Cat.No.C49E-22

## **EU RoHS Compliant**

- $\cdot$  All the products in this catalog comply with EU RoHS.
- EU RoHS is "the European Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment."
- · For more details, please refer to our website 'Murata's Approach for EU RoHS' (http://www.murata.com/info/rohs.html).



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#### Part Numbering

#### Radial Lead Type Monolithic Ceramic Capacitors

RC E R7 1H 104 K 0 M1 H03 A (Part Number)

#### Product ID

#### 2Series/Terminal

Product ID	Series/Terminal	
RC	E	Radial Lead Type Monolithic Ceramic Capacitors 125°C max. (for Automotive) (DC25V-DC1kV)
RH	E	Radial Lead Type Monolithic Ceramic Capacitors 150°C max. (for Automotive) (DC50V-DC100V)
RD	E	Radial Lead Type Monolithic Ceramic Capacitors (Only for General Use) (DC25V-DC1kV)

#### **3**Temperature Characteristics

Code	Temperature Characteristics	Reference Temperature	Temperature Range	Capacitance Change or Temperature Coefficient	Operating Temperature Range	
5C	C0G*	25°C	25 to 125°C	0±30ppm/°C	-55 to 125°C	
5G	X8G*	25°C	25 to 150°C	0±30ppm/°C	-55 to 150°C	
7U	U2J	25°C	25 to 125°C	-750±120ppm/°C	-55 to 125°C	
C7	X7S	25°C	-55 to 125°C	±22%	-55 to 125°C	
D7	X7T	25°C	-55 to 125°C	+22, -33%	-55 to 125°C	
F1	F	20°C	-25 to 85°C	+30, -80%	-25 to 85°C	
F5	Y5V	25°C	-30 to 85°C	+22, -82%	-30 to 85°C	
	VOI	0500	-55 to 125°C	±15%	-55 to 150°C	
L8	X8L	25°C	125 to 150°C	+15, -40%		
R7	X7R	25°C	-55 to 125°C	±15%	-55 to 125°C	

<sup>\*</sup> Please refer to table for Capacitance change under reference temperature.

<sup>•</sup> Capacitance change from each temperature

		Capacitance Change from 25°C (%)								
Char.	Nominal Values (ppm/°C) *1	-55	5°C	-30	)°C	-10°C				
		Max.	Min.	Max.	Min.	Max.	Min.			
COG	0±30	0.58	-0.24	0.40	-0.17	0.25	-0.11			
X8G	0±30	0.58	-0.24	0.40	-0.17	0.25	-0.11			
U2J	-750±120	8.78	5.04	6.04	3.47	3.84	2.21			

<sup>\*1:</sup> Nominal values denote the temperature coefficient within a range of 25 to 125°C.

#### 4Rated Voltage

Code	Rated Voltage
1E	DC25V
1H	DC50V
2A	DC100V
2E	DC250V
2W	DC450V
2J	DC630V
3A	DC1kV

#### **5**Capacitance

Expressed by three figures. The unit is pico-farad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros that follow the two numbers. If there is a decimal point, it is expressed by the capital letter "R." In this case, all figures are significant digits.

#### **6**Capacitance Tolerance

Code	Capacitance Tolerance	Temperature Characteristics	Capacitance Step		
С	±0.25pF		≦5pF : 1pF Step		
D	±0.5pF	C0G/X8G	6 to 9pF : 1pF Step		
J	±5%		≧10 : E12 Series		
K	±10%	X7S/X7T/X7R/ X8L	E6 Series		
М	±20%	X7S/X7T/ X7R/X8L	E3 Series		
Z	+80%, -20%	F/Y5V	E3 Series		





Dimensions (LxW)

Difficisions (LX								
Code	Dimensions (LxW)							
0	3.6×3.5mm or 4.0×3.5mm or 5.0×3.5mm (Depends on Part Number List)							
1	4.0×3.5mm or 4.5×3.5mm or 5.0×3.5mm (Depends on Part Number List)							
2	5.5×4.0mm							
3	5.5×5.0mm							
4	7.5×5.5mm							
5	7.5×7.5mm (DC630V, DC1kV: 7.5×8.0mm)							
U	7.7×12.5mm (DC630V, DC1kV: 7.7×13.0mm)							
W	5.5×7.5mm							

## 8 Lead Style

Code	Lead Style	Lead Spacing			
A2	Straight Long	2.5mm			
B1	Straight Long	5.0mm			
DB	Straight Taping	2.5mm			
E1/E2	Straight Taping	5.0mm			
K1	Inside Crimp	5.0mm			
M1/M2	Inside Crimp Taping	5.0mm			
P1	Outside Crimp	2.5mm			
S1/S2	Outside Crimp Taping	2.5mm			

Lead distance between reference and bottom planes.

M1, S1, DB :  $H_0 = 16.0\pm0.5$ mm M2, S2 :  $H_0 = 20.0\pm0.5$ mm E1 :  $H = 17.5\pm0.5$ mm E2 :  $H = 20.0\pm0.5$ mm

## Individual Specification Code Expressed by three figures

#### Packaging

Code	Packaging
Α	Ammo Pack
В	Bulk



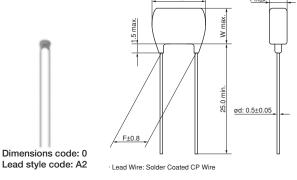
# Radial Lead Type Monolithic Ceramic Capacitors



## RCE Series 125°C max. (for Automotive) (DC25V-DC1kV)

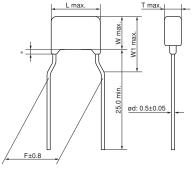
#### ■ Features

- 1. Small size and large capacitance
- 2. Low ESR and ESL suitable for high frequency
- 3. Meet AEC-Q200, ISO7637-2 (surge test) requirement
- 4. Meet LF (Lead Free) and HF (Halogen Free)
- 5. Flow soldering and welding are available. (Re-flow soldering is not available.)
- 6. If copper wire is necessary at welding process, copper wire is available based on request.

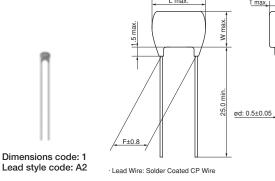


(in mm)

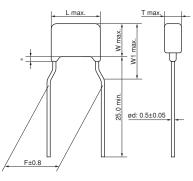




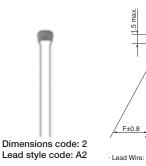
Coating extension does not exceed the end of the lead bend Lead Wire: Solder Coated CP Wire

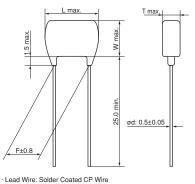






Coating extension does not exceed the end of the lead bend Lead Wire: Solder Coated CP Wire

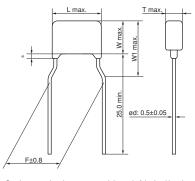




(in mm)

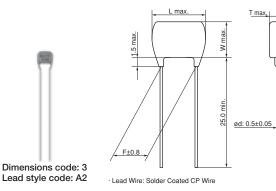
(in mm)





Coating extension does not exceed the end of the lead bend

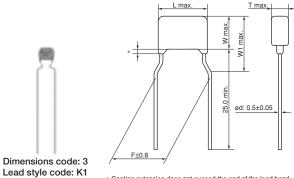
Lead Wire: Solder Coated CP Wire







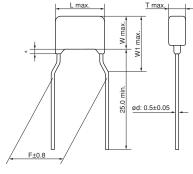




\* Coating extension does not exceed the end of the lead bend Lead Wire: Solder Coated CP Wire

(in mm)



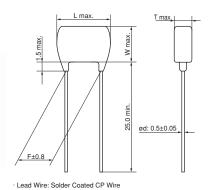


\* Coating extension does not exceed the end of the lead bend.
Lead Wire: Solder Coated CP Wire

(in mm)



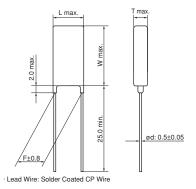
Dimensions code: 5 Lead style code: B1



(in mm)

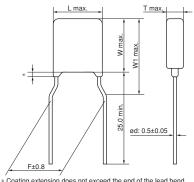


Dimensions code: U Lead style code: B1



(in mm)





Coating extension does not exceed the end of the lead bend.
Lead Wire: Solder Coated CP Wire

#### ■ Dimensions

Dimensions and	Dimensions (mm)								
Lead Style Code	L	W	W1	Т	F	d			
0A2/0DB	3.6	3.5	-		2.5	0.5			
0K1/0M1	3.6	3.5	6.0		5.0	0.5			
1A2/1DB	4.0	3.5	-		2.5	0.5			
1K1/1M1	4.0	3.5	5.0		5.0	0.5			
2A2/2DB	5.5	4.0	-		2.5	0.5			
2K1/2M1	5.5	4.0	6.0	See the individual	5.0	0.5			
3A2/3DB	5.5	5.0	-	product specification	2.5	0.5			
3K1/3M1	5.5	5.0	7.5		5.0	0.5			
4K1/4M1	7.5	5.5	8.0		5.0	0.5			
5B1/5E1	7.5	7.5*	-		5.0	0.5			
UB1/UE1	7.7	12.5*	-		5.0	0.5			
WK1/WM1	5.5	7.5	10.0		5.0	0.5			

\*DC630V, DC1kV: W+0.5mm

■ Marking

Rate		DC	25V		DC50V			DC100V		DC250V	DC630V	DC1kV
Dimensions Char		X7S	X7R	C0G	X7S	X7R	C0G	X7S	X7R		X7R, U2J	
0		224K	104K	A	_	224K	A	_	224K	_	_	_
1			-	102J	-		102J	-		U 102J	-	_
2		(M 475)	-	-	(M K5C)	105 K5C	-	-	(M 105)	(U2J) (U2J) (V7F)	(U2J)  (153)  (W77D)	(U2J) (U2J) (MAC)
3, 4, W		(M226 K2C	-	_	-	(M335 K5C)	_	(M225 K1C)	_	(X7R) (M473 J4U (U2J) (M224 K4C (X7R)	(X7R) (M103 J7U (U2J) (M104 K7C (X7R)	(X7R) (M472 JAU (U2J) (M333 KAC (X7R)
5, U		-	-	-	-	-	-	-	-	- (X74 K4C (X7R)	(M) 333 J7U (U2J) (U2J) (M) 474 M7C (X7R)	(U2J) (U2J) (W104 (KAC) (X7R)
Temperature Characteristics					X7S/X7R ch he marking		char.: U)					
Nominal Capacitano	се	Under 100	pF: Actual v	alue 100p	oF and over	: Marked wi	th 3 figures					
Capacitance Toleran	CA	Marked with code A part is omitted (Please refer to the marking example.)										
Rated Voltage		Marked with code (DC25V: 2, DC50V: 5, DC100V: 1, DC250V: 4, DC630V: 7, DC1kV: A) A part is omitted (Please refer to the marking example.)										
Manufacturer's Identification		Marked wit A part is or		se refer to t	he marking	example.)						

## Temperature Compensating Type, C0G/U2J Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C1H1R0C0□□H03□	C0G (EIA)	50Vdc	1.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H1R0C0□□H03□	C0G (EIA)	50Vdc	1.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H2R0C0□□H03□	C0G (EIA)	50Vdc	2.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H2R0C0□□H03□	C0G (EIA)	50Vdc	2.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H3R0C0□□H03□	C0G (EIA)	50Vdc	3.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H3R0C0□□H03□	C0G (EIA)	50Vdc	3.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H4R0C0□□H03□	<b>14R0C0</b> □□ <b>H03</b> □ C0G (EIA) 50Vdc 4.0	4.0pF±5%	3.6×3.5	2.5	2.5	A2	DB	
RCE5C1H4R0C0□□H03□	C0G (EIA)	50Vdc	4.0pF±5%	3.6×3.5	2.5	5.0	K1 A2	M1 DB
RCE5C1H5R0C0□□H03□	C0G (EIA)	50Vdc	5.0pF±5%	3.6×3.5	2.5	2.5		
RCE5C1H5R0C0□□H03□	C0G (EIA)	50Vdc	5.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H6R0D0□□H03□	C0G (EIA)	50Vdc	6.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H6R0D0□□H03□	C0G (EIA)	50Vdc	6.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H7R0D0□□H03□	C0G (EIA)	50Vdc	7.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H7R0D0□□H03□	<b>RCE5C1H7R0D0</b> □□ <b>H03</b> □ C0G (EIA) 50Vdc 7.0pF±5%		3.6×3.5	2.5	5.0	K1	M1	
RCE5C1H8R0D0□□H03□	C0G (EIA)	50Vdc	8.0pF±5%	3.6×3.5	2.5	2.5	A2	DB

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Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C1H8R0D0□□H03□	C0G (EIA)	50Vdc	8.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H9R0D0□□H03□	C0G (EIA)	50Vdc	9.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H9R0D0□□H03□	C0G (EIA)	50Vdc	9.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H100J0□□H03□	C0G (EIA)	50Vdc	10pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H100J0□□H03□	C0G (EIA)	50Vdc	10pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H120J0□□H03□	C0G (EIA)	50Vdc	12pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H120J0□□H03□	C0G (EIA)	50Vdc	12pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H150J0□□H03□	C0G (EIA)	50Vdc	15pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H150J0□□H03□	C0G (EIA)	50Vdc	15pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H180J0□□H03□	C0G (EIA)	50Vdc	18pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H180J0□□H03□	C0G (EIA)	50Vdc	18pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H220J0□□H03□	C0G (EIA)	50Vdc	22pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H220J0□□H03□	C0G (EIA)	50Vdc	22pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H270J0□□H03□	C0G (EIA)	50Vdc	27pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H270J0□□H03□	C0G (EIA)	50Vdc	27pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H330J0□□H03□	C0G (EIA)	50Vdc	33pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H330J0□□H03□	C0G (EIA)	50Vdc	33pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H390J0□□H03□	C0G (EIA)	50Vdc	39pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H390J0□□H03□	C0G (EIA)	50Vdc	39pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H470J0□□H03□	C0G (EIA)	50Vdc	47pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H470J0□□H03□	C0G (EIA)	50Vdc	47pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H560J0□□H03□	C0G (EIA)	50Vdc	56pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H560J0□□H03□	C0G (EIA)	50Vdc	56pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H680J0 H03	COG (EIA)	50Vdc	68pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H680J0□□H03□	C0G (EIA)	50Vdc	68pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H820J0□□H03□	C0G (EIA)	50Vdc	82pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H820J0□□H03□	C0G (EIA)	50Vdc	82pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H101J0 H03	C0G (EIA)	50Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H101J0 H03	C0G (EIA)	50Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H121J0□□H03□	C0G (EIA)	50Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H121J0□□H03□	C0G (EIA)	50Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H151J0 H03	C0G (EIA)	50Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H151J0 H03	C0G (EIA)	50Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H181J0□□H03□	C0G (EIA)	50Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H181J0 H03	C0G (EIA)	50Vdc	180pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H221J0 H03	C0G (EIA)	50Vdc	220pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H221J0□□H03□	C0G (EIA)	50Vdc	220pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H271J0□□H03□	C0G (EIA)	50Vdc	270pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H271J0□□H03□	COG (EIA)	50Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H331J0□□H03□	C0G (EIA)	50Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H331J0□□H03□	COG (EIA)	50Vdc	330pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H391J0□□H03□	COG (EIA)	50Vdc	390pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H391J0 H03	COG (EIA)	50Vdc	390pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H471J0□□H03□	COG (EIA)	50Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H471J0□□H03□	COG (EIA)	50Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H561J0□□H03□	COG (EIA)	50Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H561J0 H03	COG (EIA)	50Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H681J0□□H03□	COG (EIA)	50Vdc	680pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H681J0□□H03□	COG (EIA)	50Vdc	680pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H821J0□□H03□	COG (EIA)	50Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H821J0□□H03□	COG (EIA)	50Vdc	820pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H102J0 H03	COG (EIA)	50Vdc	1000pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H102J0□H03□	COG (EIA)	50Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H122J0□□H03□	COG (EIA)	50Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB
	COG (EIA)	50Vdc	1200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H122.IO		55 V GC	1-00pi ±070	0.070.0	2.0	5.5	13.1	141.1
RCE5C1H122J0□□H03□ RCE5C1H152J0□□H03□	C0G (EIA)	50Vdc	1500pF±5%	3.6×3.5	2.5	2.5	A2	DB

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C1H182J0□□H03□	C0G (EIA)	50Vdc	1800pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H182J0□□H03□	C0G (EIA)	50Vdc	1800pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H222J0□□H03□	C0G (EIA)	50Vdc	2200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H222J0□□H03□	C0G (EIA)	50Vdc	2200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H272J0□□H03□	C0G (EIA)	50Vdc	2700pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H272J0□□H03□	C0G (EIA)	50Vdc	2700pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H332J0□□H03□	C0G (EIA)	50Vdc	3300pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H332J0□□H03□	C0G (EIA)	50Vdc	3300pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H392J0□□H03□	C0G (EIA)	50Vdc	3900pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H392J0□□H03□	C0G (EIA)	50Vdc	3900pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H472J1□□H03□	C0G (EIA)	50Vdc	4700pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H472J1□□H03□	C0G (EIA)	50Vdc	4700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H562J1□□H03□	COG (EIA)	50Vdc	5600pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H562J1□□H03□	COG (EIA)	50Vdc	5600pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H682J1□□H03□	COG (EIA)	50Vdc	6800pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H682J1□□H03□	COG (EIA)	50Vdc	6800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H822J1□□H03□	COG (EIA)	50Vdc	8200pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H822J1□□H03□	COG (EIA)	50Vdc	8200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H103J1□□H03□	C0G (EIA)	50Vdc	10000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H103J1□□H03□	C0G (EIA)	50Vdc	10000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H123J1□□H03□	C0G (EIA)	50Vdc	12000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H123J1□□H03□	COG (EIA)	50Vdc	12000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H153J1□□H03□	COG (EIA)	50Vdc	15000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H153J1 H03	COG (EIA)	50Vdc	15000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H183J1□□H03□	COG (EIA)	50Vdc	18000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H183J1□□H03□	COG (EIA)	50Vdc	18000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H223J1□□H03□	COG (EIA)	50Vdc	22000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H223J1□□H03□	COG (EIA)	50Vdc	22000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A1R0C0□□H03□	COG (EIA)	100Vdc	1.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A1R0C0□□H03□	COG (EIA)	100Vdc	1.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A2R0C0 H03	COG (EIA)	100Vdc	2.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A2R0C0□□H03□	COG (EIA)	100Vdc	2.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A3R0C0□□H03□	COG (EIA)	100Vdc	3.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A3R0C0 H03	COG (EIA)	100Vdc	3.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A4R0C0□□H03□	C0G (EIA)	100Vdc	4.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A4R0C0□□H03□	C0G (EIA)	100Vdc	4.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A5R0C0 H03	C0G (EIA)	100Vdc	5.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A5R0C0□□H03□	COG (EIA)	100Vdc	5.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A6R0D0 H03	COG (EIA)	100Vdc	6.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A6R0D0 H03	COG (EIA)	100Vdc	6.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A7R0D0 H03	COG (EIA)	100Vdc	7.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A7R0D0 H03	COG (EIA)	100Vdc	7.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A8R0D0 H03	COG (EIA)	100Vdc	8.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A8R0D0 H03	COG (EIA)	100Vdc	8.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A9R0D0 H03	COG (EIA)	100Vdc	9.0pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A9R0D0 H03	COG (EIA)	100Vdc	9.0pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A100J0 H03	COG (EIA)	100Vdc	10pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A100J0 H03	COG (EIA)	100Vdc	10pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A120J0 H03	COG (EIA)	100Vdc	12pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A120J0 H03	COG (EIA)	100Vdc	12pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A150J0 H03	COG (EIA)	100Vdc	15pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A150J0 H03	COG (EIA)	100Vdc	15pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A180J0□□H03□	COG (EIA)	100Vdc	18pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A180J0□□H03□	COG (EIA)	100Vdc	18pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A220J0 H03	COG (EIA)	100Vdc	22pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A220J0 H03	COG (EIA)	100Vdc	22pF±5% 22pF±5%	3.6×3.5	2.5	5.0	K1	M1
	1		· ·				A2	DB
RCE5C2A270J0□□H03□	C0G (EIA)	100Vdc	27pF±5%	3.6×3.5	2.5	2.5	HZ	סט



Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C2A270J0□□H03□	C0G (EIA)	100Vdc	27pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A330J0□□H03□	C0G (EIA)	100Vdc	33pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A330J0□□H03□	C0G (EIA)	100Vdc	33pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A390J0□□H03□	C0G (EIA)	100Vdc	39pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A390J0□□H03□	C0G (EIA)	100Vdc	39pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A470J0□□H03□	C0G (EIA)	100Vdc	47pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A470J0□□H03□	C0G (EIA)	100Vdc	47pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A560J0□□H03□	C0G (EIA)	100Vdc	56pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A560J0□□H03□	C0G (EIA)	100Vdc	56pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A680J0□□H03□	C0G (EIA)	100Vdc	68pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A680J0□□H03□	C0G (EIA)	100Vdc	68pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A820J0□□H03□	C0G (EIA)	100Vdc	82pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A820J0□□H03□	C0G (EIA)	100Vdc	82pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A101J0□□H03□	C0G (EIA)	100Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A101J0□□H03□	C0G (EIA)	100Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A121J0 H03	COG (EIA)	100Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A121J0 H03	COG (EIA)	100Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A151J0 H03	COG (EIA)	100Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A151J0 H03	COG (EIA)	100Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A181J0 H03	COG (EIA)	100Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A181J0 H03	COG (EIA)	100Vdc	180pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A221J0 H03	COG (EIA)	100Vdc	220pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A221J0 H03	COG (EIA)	100Vdc	220pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A271J0 H03	COG (EIA)	100Vdc	270pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A271J0 H03	COG (EIA)	100Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A331J0 H03	COG (EIA)	100Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A331J0 H03	COG (EIA)	100Vdc	330pF±5%	3.6×3.5 3.6×3.5	2.5	5.0 2.5	K1 A2	M1 DB
RCE5C2A391J0 H03 RCE5C2A391J0 H03	COG (EIA)	100Vdc	390pF±5% 390pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A471J0 H03	COG (EIA)	100Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A471J0 H03	COG (EIA)	100Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A681J0□□H03□	C0G (EIA)	100Vdc	680pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A681J0□□H03□	COG (EIA)	100Vdc	680pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A821J0□□H03□	COG (EIA)	100Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A821J0□□H03□	C0G (EIA)	100Vdc	820pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A102J0□□H03□	COG (EIA)	100Vdc	1000pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A102J0□□H03□	C0G (EIA)	100Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A122J0□□H03□	C0G (EIA)	100Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A122J0□□H03□	C0G (EIA)	100Vdc	1200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A152J0□□H03□	C0G (EIA)	100Vdc	1500pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A152J0□□H03□	C0G (EIA)	100Vdc	1500pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A182J1□□H03□	C0G (EIA)	100Vdc	1800pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A182J1□□H03□	C0G (EIA)	100Vdc	1800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A222J1□□H03□	C0G (EIA)	100Vdc	2200pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A222J1□□H03□	C0G (EIA)	100Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A272J1□□H03□	C0G (EIA)	100Vdc	2700pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A272J1□□H03□	C0G (EIA)	100Vdc	2700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A332J1□□H03□	C0G (EIA)	100Vdc	3300pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A332J1□□H03□	C0G (EIA)	100Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE7U2E101J1□□H03□	U2J (EIA)	250Vdc	100pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E151J1□□H03□	U2J (EIA)	250Vdc	150pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E221J1□□H03□	U2J (EIA)	250Vdc	220pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E331J1□□H03□	U2J (EIA)	250Vdc	330pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E471J1□□H03□	U2J (EIA)	250Vdc	470pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E681J1□□H03□	U2J (EIA)	250Vdc	680pF±5%	4.0×3.5	3.15	5.0	K1	M1

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE7U2E102J1□□H03□	U2J (EIA)	250Vdc	1000pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E152J1□□H03□	U2J (EIA)	250Vdc	1500pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E222J1□□H03□	U2J (EIA)	250Vdc	2200pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E332J1□□H03□	U2J (EIA)	250Vdc	3300pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E472J1□□H03□	U2J (EIA)	250Vdc	4700pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E682J2□□H03□	U2J (EIA)	250Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2E103J2□□H03□	U2J (EIA)	250Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J100J2□□H03□	U2J (EIA)	630Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J150J2□□H03□	U2J (EIA)	630Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J220J2□□H03□	U2J (EIA)	630Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J330J2□□H03□	U2J (EIA)	630Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J470J2□□H03□	U2J (EIA)	630Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J680J2□□H03□	U2J (EIA)	630Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J101J2□□H03□	U2J (EIA)	630Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J151J2□□H03□	U2J (EIA)	630Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J221J2□□H03□	U2J (EIA)	630Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J331J2□□H03□	U2J (EIA)	630Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J471J2□□H03□	U2J (EIA)	630Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J681J2□□H03□	U2J (EIA)	630Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J102J2□□H03□	U2J (EIA)	630Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J152J2□□H03□	U2J (EIA)	630Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J222J2□□H03□	U2J (EIA)	630Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J332J2□□H03□	U2J (EIA)	630Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J472J2□□H03□	U2J (EIA)	630Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J682J3□□H03□	U2J (EIA)	630Vdc	6800pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U2J103J3□□H03□	U2J (EIA)	630Vdc	10000pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U2J153J4□□H03□	U2J (EIA)	630Vdc	15000pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U2J223J4□□H03□	U2J (EIA)	630Vdc	22000pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U2J333J5□□H03□	U2J (EIA)	630Vdc	33000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U2J473J5□□H03□	U2J (EIA)	630Vdc	47000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U2J943JU□□H03□	U2J (EIA)	630Vdc	94000pF±5%	7.7×13.0	4.0	5.0	B1	E1
RCE7U3A100J2□□H03□	U2J (EIA)	1000Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A150J2□□H03□	U2J (EIA)	1000Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A220J2□□H03□	U2J (EIA)	1000Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A330J2□□H03□	U2J (EIA)	1000Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A470J2□□H03□	U2J (EIA)	1000Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A680J2□□H03□	U2J (EIA)	1000Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A101J2□□H03□	U2J (EIA)	1000Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A151J2□□H03□	U2J (EIA)	1000Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A221J2□□H03□	U2J (EIA)	1000Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A331J2□□H03□	U2J (EIA)	1000Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A471J2□□H03□	U2J (EIA)	1000Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A681J2□□H03□	U2J (EIA)	1000Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A102J2□□H03□	U2J (EIA)	1000Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A152J3□□H03□	U2J (EIA)	1000Vdc	1500pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U3A222J3□□H03□	U2J (EIA)	1000Vdc	2200pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U3A332J4□□H03□	U2J (EIA)	1000Vdc	3300pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U3A472J4□□H03□	U2J (EIA)	1000Vdc	4700pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U3A682J5□□H03□	U2J (EIA)	1000Vdc	6800pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U3A103J5□□H03□	U2J (EIA)	1000Vdc	10000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U3A203JU□□H03□	U2J (EIA)	1000Vdc	20000pF±5%	7.7×13.0	4.0	5.0	B1	E1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)



## **High Dielectric Constant Type, X7R/X7S Characteristics**

Part Number         Temp. Char.         Rated Voltage         Capacitance         Differsions LxW (mm)         Differsions LxW (mm)         Lead Space (	Code Taping  DB  M1  DB  M1
RCER71E335K2□□H03□       X7R (EIA)       25Vdc       3.3μF±10%       5.5×4.0       3.15       5.0       K1         RCER71E475K2□□H03□       X7R (EIA)       25Vdc       4.7μF±10%       5.5×4.0       3.15       2.5       A2         RCER71E475K2□□H03□       X7R (EIA)       25Vdc       4.7μF±10%       5.5×4.0       3.15       5.0       K1	M1 DB
RCER71E475K2□□H03□       X7R (EIA)       25Vdc       4.7μF±10%       5.5×4.0       3.15       2.5       A2         RCER71E475K2□□H03□       X7R (EIA)       25Vdc       4.7μF±10%       5.5×4.0       3.15       5.0       K1	DB
RCER71E475K2□□H03□ X7R (EIA) 25Vdc 4.7μF±10% 5.5×4.0 3.15 5.0 K1	
	M1
DCED71E106K2   U02   V7D /EIA\ 251/da 100/E1409/ E F F C 40 0 F	1011
RCER71E106K3□□H03□   X7R (EIA)   25Vdc   $10\mu$ F± $10\%$   $5.5\times5.0$   $4.0$   $2.5$   A2	DB
<b>RCER71E106K3</b> □□ <b>H03</b> □ X7R (EIA) 25Vdc 10μF±10% 5.5×5.0 4.0 5.0 K1	M1
<b>RCER71E226MW</b> □□ <b>H03</b> □ X7R (EIA) 25Vdc 22μF±20% 5.5×7.5 4.0 5.0 K1	M1
RCER71H221K0□□H03□         X7R (EIA)         50Vdc         220pF±10%         3.6×3.5         2.5         2.5         A2	DB
<b>RCER71H221K0</b> □□ <b>H03</b> □ X7R (EIA) 50Vdc 220pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H331K0□□H03□         X7R (EIA)         50Vdc         330pF±10%         3.6×3.5         2.5         2.5         A2	DB
<b>RCER71H331K0</b> □□ <b>H03</b> □ X7R (EIA) 50Vdc 330pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H471K0□□H03□         X7R (EIA)         50Vdc         470pF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H471K0□□H03□ X7R (EIA) 50Vdc 470pF±10% 3.6×3.5 2.5 5.0 K1	M1
<b>RCER71H681K0</b> □□ <b>H03</b> □ X7R (EIA) 50Vdc 680pF±10% 3.6×3.5 2.5 2.5 A2	DB
RCER71H681K0□□H03□ X7R (EIA) 50Vdc 680pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H102K0□□H03□         X7R (EIA)         50Vdc         1000pF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H102K0□□H03□         X7R (EIA)         50Vdc         1000pF±10%         3.6×3.5         2.5         5.0         K1	M1
RCER71H152K0□□H03□ X7R (EIA) 50Vdc 1500pF±10% 3.6×3.5 2.5 2.5 A2	DB
RCER71H152K0□□H03□ X7R (EIA) 50Vdc 1500pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H222K0□□H03□ X7R (EIA) 50Vdc 2200pF±10% 3.6×3.5 2.5 2.5 A2	DB
RCER71H222K0□□H03□ X7R (EIA) 50Vdc 2200pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H332K0□□H03□ X7R (EIA) 50Vdc 3300pF±10% 3.6×3.5 2.5 2.5 A2	DB
RCER71H332K0□□H03□ X7R (EIA) 50Vdc 3300pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H472K0□□H03□ X7R (EIA) 50Vdc 4700pF±10% 3.6×3.5 2.5 2.5 A2	DB
RCER71H472K0□□H03□ X7R (EIA) 50Vdc 4700pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H682K0□□H03□ X7R (EIA) 50Vdc 6800pF±10% 3.6×3.5 2.5 2.5 A2	DB
RCER71H682K0□□H03□ X7R (EIA) 50Vdc 6800pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H103K0□□H03□ X7R (EIA) 50Vdc 10000pF±10% 3.6×3.5 2.5 2.5 A2	DB
RCER71H103K0□□H03□ X7R (EIA) 50Vdc 10000pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H153K0□□H03□         X7R (EIA)         50Vdc         15000pF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H153K0□□H03□         X7R (EIA)         50Vdc         15000pF±10%         3.6×3.5         2.5         5.0         K1	M1
RCER71H223K0□□H03□         X7R (EIA)         50Vdc         22000pF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H223K0□□H03□ X7R (EIA) 50Vdc 22000pF±10% 3.6×3.5 2.5 5.0 K1	M1
RCER71H333K0□□H03□         X7R (EIA)         50Vdc         33000pF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H333K0□□H03□         X7R (EIA)         50Vdc         33000pF±10%         3.6×3.5         2.5         5.0         K1	M1
RCER71H473K0□□H03□         X7R (EIA)         50Vdc         47000pF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H473K0□□H03□         X7R (EIA)         50Vdc         47000pF±10%         3.6×3.5         2.5         5.0         K1	M1
RCER71H683K0□□H03□         X7R (EIA)         50Vdc         68000pF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H683K0□□H03□         X7R (EIA)         50Vdc         68000pF±10%         3.6×3.5         2.5         5.0         K1	M1
RCER71H104K0□□H03□         X7R (EIA)         50Vdc         0.10μF±10%         3.6×3.5         2.5         2.5         A2	DB
RCER71H104K0□□H03□         X7R (EIA)         50Vdc         0.10μF±10%         3.6×3.5         2.5         5.0         K1	M1
RCER71H154K1□□H03□         X7R (EIA)         50Vdc         0.15μF±10%         4.0×3.5         2.5         2.5         A2	DB
<b>RCER71H154K1</b> □□ <b>H03</b> □ X7R (EIA) 50Vdc 0.15μF±10% 4.0×3.5 2.5 5.0 K1	M1
<b>RCER71H224K1</b> □□ <b>H03</b> □ X7R (EIA) 50Vdc 0.22μF±10% 4.0×3.5 2.5 2.5 A2	DB
<b>RCER71H224K1</b> □□ <b>H03</b> □ X7R (EIA) 50Vdc 0.22μF±10% 4.0×3.5 2.5 5.0 K1	M1
RCER71H334K1□□H03□         X7R (EIA)         50Vdc         0.33μF±10%         4.0×3.5         2.5         2.5         A2	DB
<b>RCER71H334K1</b> □□ <b>H03</b> □ X7R (EIA) 50Vdc 0.33μF±10% 4.0×3.5 2.5 5.0 K1	M1
RCER71H474K1□□H03□         X7R (EIA)         50Vdc         0.47μF±10%         4.0×3.5         2.5         2.5         A2	DB
RCER71H474K1□□H03□         X7R (EIA)         50Vdc         0.47μF±10%         4.0×3.5         2.5         5.0         K1	M1
RCER71H684K2□□H03□         X7R (EIA)         50Vdc         0.68μF±10%         5.5×4.0         3.15         2.5         A2	DB
RCER71H684K2□□H03□         X7R (EIA)         50Vdc         0.68μF±10%         5.5×4.0         3.15         5.0         K1	M1
RCER71H105K2□□H03□         X7R (EIA)         50Vdc         1.0μF±10%         5.5×4.0         3.15         2.5         A2	DB
RCER71H105K2□□H03□         X7R (EIA)         50Vdc         1.0μF±10%         5.5×4.0         3.15         5.0         K1	M1
RCER71H155K2□□H03□         X7R (EIA)         50Vdc         1.5μF±10%         5.5×4.0         3.15         2.5         A2	DB
RCER71H155K2□□H03□         X7R (EIA)         50Vdc         1.5μF±10%         5.5×4.0         3.15         5.0         K1	M1

Part Number	Temp. Char.		Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCER71H225K2□□H03□	X7R (EIA)	50Vdc	2.2μF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71H225K2□□H03□	X7R (EIA)	50Vdc	2.2μF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71H335K3□□H03□	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCER71H335K3□□H03□	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER71H475K3□□H03□	X7R (EIA)	50Vdc	4.7μF±10%	5.5×5.0	4.0	2.5	A2	DB
RCER71H475K3□□H03□	X7R (EIA)	50Vdc	4.7μF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER71H106MW□□H03□	X7R (EIA)	50Vdc	10μF±20%	5.5×7.5	4.0	5.0	K1	M1
RCER72A221K0□□H03□	X7R (EIA)	100Vdc	220pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A221K0□□H03□	X7R (EIA)	100Vdc	220pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A331K0□□H03□	X7R (EIA)	100Vdc	330pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A331K0□□H03□	X7R (EIA)	100Vdc	330pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A471K0□□H03□	X7R (EIA)	100Vdc	470pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A471K0□□H03□	X7R (EIA)	100Vdc	470pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A681K0□□H03□	X7R (EIA)	100Vdc	680pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A681K0□□H03□	X7R (EIA)	100Vdc	680pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A102K0□□H03□	X7R (EIA)	100Vdc	1000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A102K0□□H03□	X7R (EIA)	100Vdc	1000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A152K0□□H03□	X7R (EIA)	100Vdc	1500pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A152K0□□H03□	X7R (EIA)	100Vdc	1500pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A222K0□□H03□	X7R (EIA)	100Vdc	2200pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A222K0□□H03□	X7R (EIA)	100Vdc	2200pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A332K0□□H03□	X7R (EIA)	100Vdc	3300pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A332K0□□H03□	X7R (EIA)	100Vdc	3300pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A472K0□□H03□	X7R (EIA)	100Vdc	4700pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A472K0□□H03□	X7R (EIA)	100Vdc	4700pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A682K0□□H03□	X7R (EIA)	100Vdc	6800pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A682K0□□H03□	X7R (EIA)	100Vdc	6800pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A103K0□□H03□	X7R (EIA)	100Vdc	10000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A103K0□□H03□	X7R (EIA)	100Vdc	10000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A153K0□□H03□	X7R (EIA)	100Vdc	15000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A153K0□□H03□	X7R (EIA)	100Vdc	15000pF±10%	3.6×3.5 3.6×3.5 3.6×3.5 4.0×3.5	3.5 2.5 3.5 2.5 3.5 2.5	5.0 2.5 5.0 2.5	K1 A2 K1 A2	M1
RCER72A223K0□□H03□	X7R (EIA)	(EIA) 100Vdc (EIA) 100Vdc	22000pF±10% 22000pF±10% 33000pF±10%					DB
RCER72A223K0□□H03□	X7R (EIA)							M1
RCER72A333K1□□H03□	X7R (EIA)							DB
RCER72A333K1□□H03□	X7R (EIA)	100Vdc	33000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A473K1□□H03□	X7R (EIA)	100Vdc	47000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A473K1□□H03□	X7R (EIA)	100Vdc	47000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A683K1□□H03□	X7R (EIA)	100Vdc	68000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A683K1 H03	X7R (EIA)	100Vdc	68000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A104K1 H03	X7R (EIA)	100Vdc	0.10µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A104K1 H03	X7R (EIA)	100Vdc	0.10µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A154K2 H03	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A154K2 H03	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A224K2 H03	X7R (EIA)	100Vdc	0.22μF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A224K2 H03	X7R (EIA)	100Vdc	0.22μF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A334K1 - H03	X7R (EIA)	100Vdc	0.33µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A334K1 H03	X7R (EIA)	100Vdc	0.33µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A474K2 H03	X7R (EIA)	100Vdc	0.47µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A474K2 H03	X7R (EIA)	100Vdc	0.47μF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A684K2 H03	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A684K2 H03	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A105K2 H03	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A105K2 H03	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCEC72A155K3 H03	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCEC72A155K3 H03	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCEC72A225K3 H03	X7S (EIA)	100Vdc	2.2µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCEC72A225K3□□H03□	X7S (EIA)	100Vdc	2.2μF±10%	5.5×5.0	4.0	5.0	K1	M1

Continued from the preceding pa	Temp.	Rated		Dimensions	Dimension	Lead Space	Lead Style	Lead Style
Part Number	Char.	Voltage	Capacitance	LxW	Т	F F	Code Bulk	Code
RCEC72A475MW□□H03□	X7S (EIA)	100Vdc	4.7µF±20%	(mm) 5.5×7.5	(mm) 4.0	(mm) 5.0	K1	Taping M1
RCER72E102K1  H03	X7S (EIA)	250Vdc	4.7μ1 ±20% 1000pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E152K1 - H03	X7R (EIA)	250Vdc	1500pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E222K1 H03	X7R (EIA)	250 Vdc	2200pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E332K1 - H03	X7R (EIA)	250Vdc		4.0×3.5	3.15	5.0	K1	M1
RCER72E472K1  H03	X7R (EIA)	250Vdc	3300pF±10% 4700pF±10%		3.15	5.0	K1	M1
	, ,			4.0×3.5				
RCER72E682K1 H03	X7R (EIA)	250Vdc	6800pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E103K1 H03	X7R (EIA)	250Vdc	10000pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E153K1  H03	X7R (EIA)	250Vdc	15000pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E223K1  H03	X7R (EIA)	250Vdc	22000pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E333K2 H03	X7R (EIA)	250Vdc	33000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72E473K2 H03	X7R (EIA)	250Vdc	47000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72E683K2 H03	X7R (EIA)	250Vdc	68000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72E104K2 H03	X7R (EIA)	250Vdc	0.10µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72E154K3□□H03□	X7R (EIA)	250Vdc	0.15µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER72E224K3□□H03□	X7R (EIA)	250Vdc	0.22µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER72E334K4□□H03□	X7R (EIA)	250Vdc	0.33µF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER72E474K4□□H03□	X7R (EIA)	250Vdc	0.47µF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER72E684K5□□H03□	X7R (EIA)	250Vdc	0.68µF±10%	7.5×7.5	4.0	5.0	B1	E1
RCER72E105K5□□H03□	X7R (EIA)	250Vdc	1.0µF±10%	7.5×7.5	4.0	5.0	B1	E1
RCER72E225MU□□H03□	X7R (EIA)	250Vdc	2.2µF±20%	7.5×12.5	4.0	5.0	B1	E1
RCER72J102K2□□H03□	X7R (EIA)	630Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J152K2□□H03□	X7R (EIA)	630Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J222K2□□H03□	X7R (EIA)	630Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J332K2□□H03□	X7R (EIA)	630Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J472K2□□H03□	X7R (EIA)	630Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J682K2□□H03□	X7R (EIA)	630Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J103K2□□H03□	X7R (EIA)	630Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J153K2□□H03□	X7R (EIA)	630Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J223K2□□H03□	X7R (EIA)	630Vdc	22000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J333K3□□H03□	X7R (EIA)	630Vdc	33000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER72J473K3□□H03□	X7R (EIA)	630Vdc	47000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER72J683K4□□H03□	X7R (EIA)	630Vdc	68000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER72J104K4□□H03□	X7R (EIA)	630Vdc	0.10µF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER72J154K5□□H03□	X7R (EIA)	630Vdc	0.15µF±10%	7.5×8.0	4.0	5.0	B1	E1
RCER72J224K5□□H03□	X7R (EIA)	630Vdc	0.22µF±10%	7.5×8.0	4.0	5.0	B1	E1
RCER72J474MU□□H03□	X7R (EIA)	630Vdc	0.47µF±20%	7.7×13.0	4.0	5.0	B1	E1
RCER73A102K2□□H03□	X7R (EIA)	1000Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A152K2□□H03□	X7R (EIA)	1000Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A222K2□□H03□	X7R (EIA)	1000Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A332K2□□H03□	X7R (EIA)	1000Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A472K2□□H03□	X7R (EIA)	1000Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A682K2□□H03□	X7R (EIA)	1000Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A103K2□□H03□	X7R (EIA)	1000Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A153K3□□H03□	X7R (EIA)	1000Vdc	15000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER73A223K3□□H03□	X7R (EIA)			5.5×5.0	4.0	5.0	K1	M1
RCER73A333K4□□H03□			7.5×5.5	4.0	5.0	K1	M1	
RCER73A473K4□□H03□			47000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER73A683K5□□H03□	X7R (EIA)	1000Vdc	68000pF±10%	7.5×8.0	4.0	5.0	B1	E1
DOEDTO A 104KE TO LICOT	7.7.T. (E1/1)	100014	0.40./51400/	7.5.0.0	1.0	5.0	D.	

1000Vdc Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

1000Vdc

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

X7R (EIA)

X7R (EIA)

RCER73A104K5□□H03□

RCER73A224MU□□H03□



 $7.5 \times 8.0$ 

7.7×13.0

4.0

4.0

5.0

5.0

В1

B1

 $0.10 \mu F \pm 10\%$ 

 $0.22 \mu F \pm 20\%$ 

E1

E1

## Temperature Compensating Type Specifications and Test Methods

No.	AEC-Q200	Test Item	Specifications	AEC-Q200 Test Method
1	Pre-and P			_
	High Tem Exposure	perature (Storage)	The measured and observed characteristics should satisfy the specifications in the following table.	
		Appearance	No defects or abnormalities	
		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Sit the capacitor for 1,000±12h at 150±3°C. Let sit for 24±2h at
2		Q	$30pF \le C: Q \ge 350$ $10pF \le C < 30pF: Q \ge 275+5C/2$ $10pF > C: Q \ge 200+10C$ C: Nominal Capacitance (pF)	room temperature, then measure.
		I.R.	More than $1,000M\Omega$ or $50M\Omega \cdot \mu F$ (Whichever is smaller)	
	Temperat Cycling		The measured and observed characteristics should satisfy the specifications in the following table.	
		Appearance	No defects or abnormalities	Perform the 1,000 cycles according to the four heat treatments
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	listed in the following table. Let sit for 24±2h at *room condition, then measure.
3		Q	30pF ≤ C: Q ≥ 350 10pF ≤ C < 30pF: Q ≥ 275+5C/2 10pF > C: Q ≥ 200+10C	Step         1         2         3         4           Temp. (°C) -55+0/-3         Room Temp.         125+3/-0         Room Temp.           Time (min.)         15±3         1         15±3         1
			C: Nominal Capacitance (pF)	
	I.R.		1,000MΩ or 50MΩ · μF min. (Whichever is smaller)	
	Moisture Resistance		The measured and observed characteristics should satisfy the specifications in the following table.	Apply the 24h heat (25 to 65°C) and humidity (80 to 98%) treatment shown below, 10 consecutive times.  Let sit for 24±2h at *room condition, then measure.
		Appearance	No defects or abnormalities	Humidity Humidity Humidity Humidity Humidity
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	(°C) 90-98% 80-98% 90-98% 80-98% 90-98% 65
4		Q	$30pF \le C: Q \ge 200$ $30pF > C: Q \ge 100+10C/3$	55 50 45 45 40 87 35
		I.R.	C: Nominal Capacitance (pF) $500 M\Omega \text{ or } 25 M\Omega \cdot \mu \text{F min. (Whichever is smaller)}$	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24  Hours
	Biased Hu	umidity	The measured and observed characteristics should satisfy the specifications in the following table.	
		Appearance	No defects or abnormalities	
5		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Apply the rated voltage and DC1.3+0.2/-0V (add 6.8kΩ resistor) at 85±3°C and 80 to 85% humidity for 1,000±12h.  Remove and let sit for 24±2h at *room condition, then measure.
		Q	$30pF \le C: Q \ge 200$ $30pF > C: Q \ge 100+10C/3$	The charge/discharge current is less than 50mA.
			C: Nominal Capacitance (pF)	
		I.R.	500MΩ or 25MΩ · μF min. (Whichever is smaller)	
	Operation	al Life	The measured and observed characteristics should satisfy the specifications in the following table.	
		Appearance	No defects or abnormalities	Apply the voltage shown in the table for 1,000±12h at 125±3°C.
		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Let sit for 24±2h at *room condition, then measure. The charge/discharge current is less than 50mA.
6		Q	$30pF \le C: Q \ge 350$ $10pF \le C < 30pF: Q \ge 275+5C/2$ $10pF > C: Q \ge 200+10C$	Rated VoltageTest VoltageDC50V, DC100V200% of the rated voltageDC250V150% of the rated voltageDC630V, DC1kV120% of the rated voltage
			C: Nominal Capacitance (pF)	
		I.R.	1,000M $\Omega$ or 50M $\Omega$ · μF min. (Whichever is smaller)	

 $<sup>^{\</sup>star}$  "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa



## Temperature Compensating Type Specifications and Test Methods

Ontinued from the preceding page.

No.	AEC-Q200	Test Item	Specifications	AEC-Q200 Test Method			
7	External \	/isual	No defects or abnormalities	Visual inspection			
8	Physical I	Dimension	Within the specified dimensions	Using calipers and micrometers.			
9	Marking		To be easily legible.	Visual inspection			
		Appearance	No defects or abnormalities	Per MIL-STD-202 Method 215			
		Capacitance	Within the specified tolerance	Solvent 1: 1 part (by volume) of isopropyl alcohol			
10	Resistance to Solvents	Q	30pF ≤ C: Q ≥ 1,000 30pF > C: Q ≥ 400+20C	3 parts (by volume) of mineral spirits Solvent 2: Terpene defluxer Solvent 3: 42 parts (by volume) of water			
			C: Nominal Capacitance (pF)	1 part (by volume) of propylene glycol monomethyl ether			
		I.R.	More than 10,000M $\Omega$ or 500M $\Omega \cdot \mu F$ (Whichever is smaller)	1 part (by volume) of monoethanolamine			
		Appearance	No defects or abnormalities	Three shocks in each direction should be applied along			
	Machaniaal	Capacitance	Within the specified tolerance	Three shocks in each direction should be applied along 3 mutually perpendicular axes of the test specimen (18 shocks).			
11	Mechanical Shock	Q	$30pF \le C : Q \ge 1,000$ $30pF > C : Q \ge 400+20C$	The specified test pulse should be Half-sine and should have a duration: 0.5ms, peak value: 1,500G and velocity change: 4.7m/s.			
			C : Nominal Capacitance (pF)	ondinge. 4.711/3.			
		Appearance	No defects or abnormalities	The capacitor should be subjected to a simple harmonic motion			
		Capacitance	Within the specified tolerance	having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 2,000Hz.			
12	Vibration		30pF ≤ C: Q ≥ 1,000	The frequency range, from 10 to 2,000Hz and return to 10Hz,			
		Q	30pF > C: Q ≥ 400+20C	should be traversed in approximately 20min. This motion should be applied for 12 items in each 3 mutually perpendicular			
			C: Nominal Capacitance (pF)	directions (total of 36 times).			
	Resistance Soldering I		The measured and observed characteristics should satisfy the specifications in the following table.				
		Appearance	No defects or abnormalities				
13		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	The lead wire is immersed in the melted solder 1.5 to 2mm from the main body at 260±5°C for 10±1s. The specified items are measured after 24±2h.			
		Dielectric Strength (Between Terminals)	No defects				
	Thermal S	Shock	The measured and observed characteristics should satisfy the specifications in the following table.				
		Appearance	No defects or abnormalities	Perform the 300 cycles according to the two heat treatments			
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	listed in the following table (Maximum transfer time is 20s.). Let sit for 24±2h at *room condition, then measure.			
14			$30pF \le C \colon Q \ge 350$	Step 1 2			
		Q	$10pF \le C < 30p: Q \ge 275+5C/2$ $10pF > C: Q \ge 200+10C$	Temp. (°C) -55+0/-3 125+3/-0 Time (min.) 15±3 15±3			
			·	1020			
		I.R.	C: Nominal Capacitance (pF)  1,000MΩ or 50MΩ · μF min. (Whichever is smaller)	_			
		Appearance					
		Capacitance	Within the specified tolerance	-			
		Oupdoitarioc	30pF ≤ C: Q ≥ 1,000	-			
15	ESD	Q	30pF > C: Q ≥ 400+20C	Per AEC-Q200-004			
			C: Nominal Capacitance (pF)				
		I.R.	More than 10,000M $\!\Omega$ or 500M $\!\Omega\cdot\mu F$ (Whichever is smaller)				
16	6 Solderability		Lead wire should be soldered with uniform coating on the axial direction over 95% of the circumferential direction.	Should be placed into steam aging for 8h±15min. The terminal of capacitor is dipped into a solution of ethanol (JIS K 8101) and rosin (JIS K 5902) (25% rosin in weight propotion). Immerse in solder solution for 2±0.5 seconds. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body.			

 $<sup>^{\</sup>star}$  "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa



## **Temperature Compensating Type Specifications and Test Methods**

Continued from the preceding page.

No.	AEC-Q200	Test Item	Specif	fications	AEC	-Q200 Test Me	ethod
		Appearance	No defects or abnormalities		Visual inspection.		
		Capacitance	Within the specified tolerance		The capacitance, Q sho		
		Q	$30pF \le C: Q \ge 1,000$ $30pF > C: Q \ge 400+20C$ C: Nominal Capacitance (pF)		frequency and voltage s  Nominal Cap. $C \le 1000pF$ $C > 1000pF$	Frequency 1±0.1MHz 1±0.1kHz	Voltage AC0.5 to 5V (r.m.s.) AC1±0.2V (r.m.s.)
		I.R.	Between Terminals	10,000MΩ or 500MΩ · μF min. (Whichever is smaller)	The insulation resistanc voltage not exceeding the of charging.	e should be me	easured with a DC
17	Electrical Charac- terization				The capacitor should no shown in the table is ap for 1 to 5 seconds. (Charge/Discharge curre	plied between t	-
		Dielectric Strength	Between Terminals	No defects or abnormalities	Rated Voltage DC50V, DC100V DC250V DC630V DC1kV	300% ( 200% ( 150% (	Test Voltage of the rated voltage of the rated voltage of the rated voltage of the rated voltage
			Body Insulation	The capacitor is placed in a container with metal balls of 1mm diameter so that each terminal, short-circuit is kept approximately 2mm from the balls, and 250% of the rated DC voltage is impressed for 1 to 5 seconds between capacitor terminals and metal balls.  (Charge/Discharge current ≤ 50mA.)			
18	Terminal Strength	Tensile Strength	Termination not to be broken o	r loosened	As in the figure, fix the origradually to each lead in until reaching 10N and to 10±1 seconds.	n the radial dire	ction of the capacitor
		Bending Strength	Termination not to be broken o	Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds.			
					The capacitance change each specified temperate	ture step.	
					Step 1		emperature (°C) 25±2
					2		-55±3
			Within the specified Tolerance.		3		25±2
	Capacitar	nce	(Table A)		45		125±3 25±2
19	· ·		Capacitance Drift is within ±0.2 (Whichever is larger)	The temperature coefficient is determind using the capacitance measured in step 3 as a reference. When cycling the temperature sequentially from step 1 through 5 (-55°C to +125°C) the capacitance should be within the specified tolerance for the temperature coefficient and capacitance change as Table A.  The capacitance drift is caluculated by dividing the differences between the maximum and minimum measured values in the step 1, 3 and 5 by the capacitance value in step 3.			

<sup>\* &</sup>quot;room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

#### Table A

	I abic	DIC A											
		Nominal Values	С	Capacitance Change from 25°C (%)									
	Char.	(ppm/°C) *	-5	55	-3	30	-10						
		(ppiii/ 0)	Max.	Min.	Max.	Min.	Max.	Min.					
	C0G	0±30	0.58	-0.24	0.40	-0.17	0.25	-0.11					
	112.1	-750+120	8 78	5.04	6.04	3 47	3 84	2 21					

<sup>\*</sup> Nominal values denote the temperature coefficient within a range of 25°C to 125°C.



## **High Dielectric Constant Type Specifications and Test Methods**

No.	AEC-Q200	Test Item	Specifications	AEC-Q200	Test Method				
1	Pre-and P	ost-Stress Test		_					
	High Tem Exposure	perature (Storage)	The measured and observed characteristics should satisfy the specifications in the following table.						
		Appearance	No defects or abnormalities						
2		Capacitance Change	Within ±12.5%	Sit the capacitor for 1,000±12h room temperature, then measu	at 150±3°C. Let sit for 24±2h at re.				
		D.F.	0.04 max.						
		I.R.	More than 1,000M $\Omega$ or $50M\Omega \cdot \mu F$ (Whichever is smaller)						
	Cycling specifications in the following table.  Appearance No defects or abnormalities  Canacitance		The measured and observed characteristics should satisfy the specifications in the following table.	listed in the following table. Let sit for 24±2h at *room c					
			No defects or abnormalities	then measure.					
3			Within ±12.5%	Temp. (°C) -55+0/-3 Room	2 3 4 Temp. 125+3/-0 Room Temp. 1 15±3 1				
		D.F.	0.05 max.	•Pretreatment	1 1020 1				
	I.R. 1,000MΩ or 50MΩ · μF min. (Whichever is smaller)				150+0/-10°C for 60±5min and condition.				
	Moisture Resistance	e	The measured and observed characteristics should satisfy the specifications in the following table.	Apply the 24h heat (25 to 65°C treatment shown below, 10 cor	secutive times.				
	Appearance No defects or abnormalities		Let sit for 24±2h at *room cond	,					
		Capacitance Change	Within ±12.5%	(°C) 90.98% 80.98% 90.98% 80.98% 90.98% 90.98% 90.98% 90.98%					
		D.F.	0.05 max.	55 50					
4		l.R.	500MΩ or 25MΩ · μF min. (Whichever is smaller)		cycle = 24 hours 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Hours				
	Biased H	umidity	The measured and observed characteristics should satisfy the specifications in the following table.						
		Appearance	No defects or abnormalities		C1.3+0.2/-0V (add 6.8kΩ resistor)				
5		Capacitance Change	Within ±12.5%	at 85±3°C and 80 to 85% humi Remove and let sit for 24±2h a The charge/discharge current is	t *room condition, then measure.				
		D.F.	0.05 max.						
		I.R.	500MΩ or 25MΩ · μF min. (Whichever is smaller)						
	Operation	nal Life	The measured and observed characteristics should satisfy the specifications in the following table.	Let sit for 24±2h at *room cond					
		Appearance	No defects or abnormalities	The charge/discharge current is  •Pretreatment	s less than bullia.				
6		Capacitance Change	Within ±12.5%	Apply test voltage for 60±5min Remove and let sit for 24±2h					
		D.F.	0.04 max.	Rated Voltage	Test Voltage				
		I.R.	1,000MΩ or 50MΩ · μF min. (Whichever is smaller)	DC25V, DC50V, DC100V DC250V DC630V DC1kV	200% of the rated voltage *1 150% of the rated voltage 120% of the rated voltage 110% of the rated voltage				
7	External \	/isual	No defects or abnormalities	Visual inspection					
8	Physical I	Dimension	Within the specified dimensions	Using calipers and micrometers	3.				
9	Marking		To be easily legible.	Visual inspection					

 $<sup>^{\</sup>star}$  "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

<sup>\*1:</sup> below parts are applicable in rated voltage×150%.

			-	
Ī	Char.	Rated Voltage	Capacitance	Dimensions
	R7	2A	334	1
	R7	2A	474-105	2
	C7	2A	155-225	3
	C7	2A	475	W



## High Dielectric Constant Type Specifications and Test Methods

( ) Continued from the preceding page.

lo.	AEC-Q200	Test Item	Specifications		AEC-Q200 Test M	lethod			
		Appearance	No defects or abnormalities	Per MIL-STD-202					
		Capacitance	Within the specified tolerance		t (by volume) of isop ts (by volume) of mir				
0	Resistance	D.F.	0.025 max.	Solvent 2: Terpene defluxer					
U	to Solvents	I.R.	More than 10,000M $\Omega$ or 500M $\Omega \cdot \mu F$ (Whichever is smaller)	Solvent 3: 42 parts (by volume) of water 1 part (by volume) of propylene glycol monomethyl ether 1 part (by volume) of monoethanolamine					
		Appearance	No defects or abnormalities		each direction should				
1	Mechanical	Capacitance	Within the specified tolerance		3 mutually perpendicular axes of the test specimen (18 shocks). The specified test pulse should be Half-sine and should				
	Shock	D.F.	0.025 max.		0.5ms, peak value: 1				
		Appearance	No defects or abnormalities	· ·	•	a simple harmonic motior			
		Capacitance	Within the specified tolerance			e frequency being varied nits of 10 and 2,000Hz.			
2	Vibration	D.F.	0.025 max.	The frequency range, from 10 to 2,000Hz and return to 10Hz, should be traversed in approximately 20min. This motion should be applied for 12 items in each 3 mutually perpendiculdirections (total of 36 times).					
	Resistance Soldering I		The measured and observed characteristics should satisfy the specifications in the following table.						
		Appearance	No defects or abnormalities			ed solder 1.5 to 2mm			
3		Capacitance Change	Wthin ±7.5%	are measured after Pretreatment	•	±1s. The specified items			
		Dielectric Strength (Between terminals)	No defects	Perform the heat treatment at 150+0/-10°C for 60±5min and then let sit for 24±2h at *room condition.					
	Thermal S	Shock	The measured and observed characteristics should satisfy the specifications in the following table.	Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20s.).					
		Appearance	No defects or abnormalities	Let sit for 24±2h a	at *room condition, th	nen measure.			
4		Capacitance	Within ±12.5%	Step	1	2			
4		Change	WILLIIII ±12.376	Temp. (°C) Time (min.)	-55+0/-3 15±3	125+3/-0 15±3			
		D.F.	0.05 max.	•Pretreatment					
		I.R.	1,000M $\!\Omega$ or $50M\Omega\cdot\mu F$ min. (Whichever is smaller)		it treatment at 150+0 1±2h at *room condit	/-10°C for 60±5min and ion.			
		Appearance	No defects or abnormalities						
5	ESD	Capacitance	Within the specified tolerance	Dor AEC 0200 0	0.4				
5	E3D	D.F.	0.025 max.	Per AEC-Q200-004					
		I.R.	More than 10,000M $\Omega$ or 500M $\Omega \cdot \mu F$ (Whichever is smaller)						
6	Solderability		Lead wire should be soldered with uniform coating on the axial direction over 95% of the circumferential direction.	Should be placed into steam aging for 8h±15min. The terminal of capacitor is dipped into a solution of ethal (JIS K 8101) and rosin (JIS K 5902) (25% rosin in weight propotion). Immerse in solder solution for 2±0.5 seconds. In both cases the depth of dipping is up to about 1.5 to 2r from the terminal body.					

<sup>\* &</sup>quot;room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa





## **High Dielectric Constant Type Specifications and Test Methods**

Continued from the preceding page.

lo. AEC-Q20	0 Test Item	Specif	ications	AEC-Q200 Test Method			
	Appearance	No defects or abnormalities		Visual inspection.			
	Capacitance	Within the specified tolerance		The capacitance/D.F. should be frequency and voltage shown in			
	D.F.	0.025 max.		Frequency 1±0.1kHz	Voltage 1±0.2V (r.m.s.)		
	I.R.	Between Terminals	10,000M $\Omega$ or 500M $\Omega$ · μF min. (Whichever is smaller)	The insulation resistance shoul voltage not exceeding the rated of charging.			
Electrica				The capacitor should not be da shown in the table is applied be for 1 to 5 seconds. (Charge/Discharge current ≤ 50	etween the terminations		
terization	Dielectric Strength	Between Terminals	No defects or abnormalities	Rated Voltage DC25V, DC50V, DC100V DC250V DC630V DC1kV	Test Voltage 250% of the rated voltage 200% of the rated voltage 150% of the rated voltage 120% of the rated voltage		
		Body Insulation	sulation No defects or abnormalities		The capacitor is placed in a container with metal balls of 1mm diameter so that each terminal, short-circuit is kept approximately 2mm from the balls, and 250% of the rated DC voltage is impressed for 1 to 5 seconds between capacitor terminals and metal balls. (Charge/Discharge current ≤ 50mA.)		
Terminal Strength		Termination not to be broken or	r loosened	As in the figure, fix the capacitor gradually to each lead in the rauntil reaching 10N and then ker 10±1 seconds.	dial direction of the capacitor		
	Bending Strength	Termination not to be broken or	r loosened				
Capacitance 9 Temperature Characteristics		Char.X7R: Within ±15% Char.X7S: Within ±22%		The capacitance change should each specified temperature ste  Step  1 2 3 4 5  The ranges of capacitance cha 25°C value over the temperature should be within the specified representation of	Temperature (°C)  25±2 -55±3 25±2 125±3 25±2 nge compared with the above re ranges shown in the table		

<sup>\* &</sup>quot;room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa



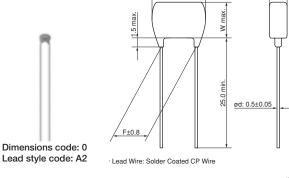
## Radial Lead Type Monolithic Ceramic Capacitors



## RHE Series 150°C max. (for Automotive) (DC50V-DC100V)

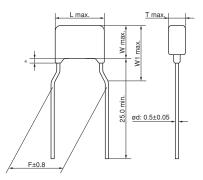
#### Features

- 1. Small size and large capacitance
- 2. Low ESR and ESL suitable for high frequency
- 3. Applied maximum temperature up to 150°C Note: Maximum accumulative time to 150°C is within 2000 hours.
- 4. Meet AEC-Q200, ISO7637-2 (surge test) requirement
- 5. Meet LF (Lead Free) and HF (Halogen Free)
- 6. Flow soldering and welding are available. (Re-flow soldering is not available.)
- 7. If copper wire is necessary at welding process, copper wire is available based on request.



(in mm)

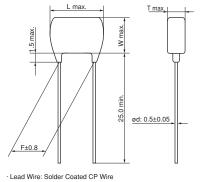




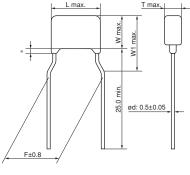
Coating extension does not exceed the end of the lead bend Lead Wire: Solder Coated CP Wire

(in mm)





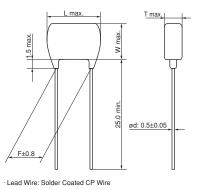




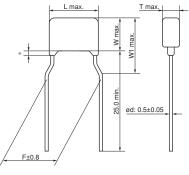
Coating extension does not exceed the end of the lead bend Lead Wire: Solder Coated CP Wire

(in mm)

Dimensions code: 2 Lead style code: A2

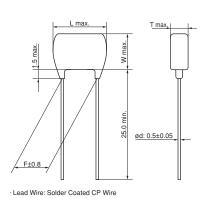






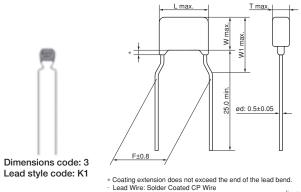
Coating extension does not exceed Lead Wire: Solder Coated CP Wire

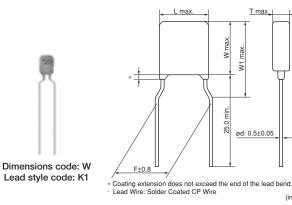
Dimensions code: 3 Lead style code: A2











#### ■ Dimensions

Dimensions and		Dimensions (mm)									
Lead Style Code	L	W	W1	Т	F	d					
0A2/0DB	3.6	3.5	-		2.5	0.5					
0K1/0M1	3.6	3.5	6.0		5.0	0.5					
1A2/1DB	4.0	3.5	-		2.5	0.5					
1K1/1M1	4.0	3.5	5.0		5.0	0.5					
2A2/2DB	5.5	4.0	-	See the individual product specification	2.5	0.5					
2K1/2M1	5.5	4.0	6.0	product specification	5.0	0.5					
3A2/3DB	5.5	5.0	-		2.5	0.5					
3K1/3M1	5.5	5.0	7.5		5.0	0.5					
WK1/WM1	5.5	7.5	10.0		5.0	0.5					

■ Marking

Marking	Туре	Temperature Compensating Type	High Dielectric	Constant Type			
<b>a</b>	Rated Voltage	DC50V, DC100V	DC50V	DC100V			
Dimensions Code	Temp. Char.	X8G	X	BL			
	0	8 102J	( 8 104K )	(8 103K)			
	1	1023	104K	103K			
	2	_	(M 105)	(M 224 K18			
	3, W	_	(M 335) K58	_			
Temperat	ure Characteristics	Marked with code (X8G, X8L cha	r.: 8)				
Nomir	nal Capacitance	Marked with 3 figures					
Capaci	tance Tolerance	Marked with code					
Ra	ated Voltage	Marked with code (DC50V: 5, DC100V: 1) A part is omitted (Please refer to the marking example.)					
Manufact	urer's Identification	Marked with M A part is omitted (Please refer to the marking example.)					

## **Temperature Compensating Type, X8G Characteristics**

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHE5G1H101J0□□H03□	X8G (Murata)	50Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H101J0□□H03□	X8G (Murata)	50Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H121J0□□H03□	X8G (Murata)	50Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H121J0□□H03□	X8G (Murata)	50Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H151J0□□H03□	X8G (Murata)	50Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H151J0□□H03□	X8G (Murata)	50Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H181J0□□H03□	X8G (Murata)	50Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H181J0□□H03□	X8G (Murata)	50Vdc	180pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H221J0□□H03□	X8G (Murata)	50Vdc	220pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H221J0□□H03□	X8G (Murata)	50Vdc	220pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H271J0□□H03□	X8G (Murata)	50Vdc	270pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H271J0□□H03□	X8G (Murata)	50Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H331J0□□H03□	X8G (Murata)	50Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H331J0□□H03□	X8G (Murata)	50Vdc	330pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H391J0□□H03□	X8G (Murata)	50Vdc	390pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H391J0□□H03□	X8G (Murata)	50Vdc	390pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H471J0□□H03□	X8G (Murata)	50Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H471J0□□H03□	X8G (Murata)	50Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H561J0□□H03□	X8G (Murata)	50Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H561J0□□H03□	X8G (Murata)	50Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H681J0 H03	X8G (Murata)	50Vdc	680pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H681J0 H03	X8G (Murata)	50Vdc	680pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H821J0 H03	X8G (Murata)	50Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H821J0 H03	X8G (Murata)	50Vdc	820pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H102J0 H03	X8G (Murata)	50Vdc	1000pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H102J0 H03	X8G (Murata)	50Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H122J0 H03	X8G (Murata)	50Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H122J0 H03	X8G (Murata)	50Vdc 50Vdc	1200pF±5%	3.6×3.5 3.6×3.5	2.5	5.0 2.5	K1 A2	M1 DB
RHE5G1H152J0 H03 RHE5G1H152J0 H03	X8G (Murata) X8G (Murata)	50Vdc	1500pF±5% 1500pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H182J0 H03	X8G (Murata)	50Vdc	1800pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H182J0 H03	X8G (Murata)	50Vdc	1800pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H222J0 H03	X8G (Murata)	50Vdc	2200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H222J0 H03	X8G (Murata)	50Vdc	2200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H272J0 H03	X8G (Murata)	50Vdc	2700pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H272J0 H03	X8G (Murata)	50Vdc	2700pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H332J0□□H03□	X8G (Murata)	50Vdc	3300pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H332J0□□H03□	X8G (Murata)	50Vdc	3300pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H392J0□□H03□	X8G (Murata)	50Vdc	3900pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H392J0□□H03□	X8G (Murata)	50Vdc	3900pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H472J1□□H03□	X8G (Murata)	50Vdc	4700pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H472J1□□H03□	X8G (Murata)	50Vdc	4700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H562J1□□H03□	X8G (Murata)	50Vdc	5600pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H562J1□□H03□	X8G (Murata)	50Vdc	5600pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H682J1□□H03□	X8G (Murata)	50Vdc	6800pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H682J1□□H03□	X8G (Murata)	50Vdc	6800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H822J1□□H03□	X8G (Murata)	50Vdc	8200pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H822J1□□H03□	X8G (Murata)	50Vdc	8200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H103J1□□H03□	X8G (Murata)	50Vdc	10000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H103J1□□H03□	X8G (Murata)	50Vdc	10000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G2A101J0□□H03□	X8G (Murata)	100Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A101J0□□H03□	X8G (Murata)	100Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A121J0□□H03□	X8G (Murata)	100Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A121J0 H03	X8G (Murata)	100Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A151J0□□H03□	X8G (Murata)	100Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHE5G2A151J0 H03	X8G (Murata)	100Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A181J0□□H03□	X8G (Murata)	100Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A181J0□□H03□	X8G (Murata)	100Vdc	180pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A221J0□□H03□	X8G (Murata)	100Vdc	220pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A221J0□□H03□	X8G (Murata)	100Vdc	220pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A271J0□□H03□	X8G (Murata)	100Vdc	270pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A271J0□□H03□	X8G (Murata)	100Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A331J0□□H03□	X8G (Murata)	100Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A331J0□□H03□	X8G (Murata)	100Vdc	330pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A391J0□□H03□	X8G (Murata)	100Vdc	390pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A391J0□□H03□	X8G (Murata)	100Vdc	390pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A471J0□□H03□	X8G (Murata)	100Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A471J0□□H03□	X8G (Murata)	100Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A561J0□□H03□	X8G (Murata)	100Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A561J0□□H03□	X8G (Murata)	100Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A681J0□□H03□	X8G (Murata)	100Vdc	680pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A681J0□□H03□	X8G (Murata)	100Vdc	680pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A821J0□□H03□	X8G (Murata)	100Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A821J0□□H03□	X8G (Murata)	100Vdc	820pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A102J0□□H03□	X8G (Murata)	100Vdc	1000pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A102J0□□H03□	X8G (Murata)	100Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A122J0□□H03□	X8G (Murata)	100Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A122J0□□H03□	X8G (Murata)	100Vdc	1200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A152J0□□H03□	X8G (Murata)	100Vdc	1500pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A152J0 H03	X8G (Murata)	100Vdc	1500pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A182J1□□H03□	X8G (Murata)	100Vdc	1800pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G2A182J1□□H03□	X8G (Murata)	100Vdc	1800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G2A222J1□□H03□	X8G (Murata)	100Vdc	2200pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G2A222J1□□H03□	X8G (Murata)	100Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G2A272J1□□H03□	X8G (Murata)	100Vdc	2700pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G2A272J1□□H03□	X8G (Murata)	100Vdc	2700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G2A332J1□□H03□	X8G (Murata)	100Vdc	3300pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G2A332J1□□H03□	X8G (Murata)	100Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

## **High Dielectric Constant Type, X8L Characteristics**

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHEL81H221K0□□H03□	X8L (Murata)	50Vdc	220pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H221K0□□H03□	X8L (Murata)	50Vdc	220pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H331K0□□H03□	X8L (Murata)	50Vdc	330pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H331K0□□H03□	X8L (Murata)	50Vdc	330pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H471K0□□H03□	X8L (Murata)	50Vdc	470pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H471K0□□H03□	X8L (Murata)	50Vdc	470pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H681K0□□H03□	X8L (Murata)	50Vdc	680pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H681K0□□H03□	X8L (Murata)	50Vdc	680pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H102K0□□H03□	X8L (Murata)	50Vdc	1000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H102K0□□H03□	X8L (Murata)	50Vdc	1000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H152K0□□H03□	X8L (Murata)	50Vdc	1500pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H152K0□□H03□	X8L (Murata)	50Vdc	1500pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H222K0□□H03□	X8L (Murata)	50Vdc	2200pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H222K0□□H03□	X8L (Murata)	50Vdc	2200pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H332K0□□H03□	X8L (Murata)	50Vdc	3300pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H332K0□□H03□	X8L (Murata)	50Vdc	3300pF±10%	3.6×3.5	2.5	5.0	K1	M1

	Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 6800pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 10000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 10000pF±10Vh, 3.8-6.35 2.5 2.5 2.5 A2 RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 10000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 10000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 15000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 20000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 20000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 20000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 20000pF±10Vh, 3.8-6.35 2.5 5.0 5.0 K1 M. M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 47000pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 47000pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 67000pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 68000pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 68000pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 6000pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 6000pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.15pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.15pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.15pF±10Vh, 3.8-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.15pF±10Vh, 4.0-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.35pF±10Vh, 4.0-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.35pF±10Vh, 4.0-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.35pF±10Vh, 4.0-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vdc 60.35pF±10Vh, 4.0-6.35 2.5 5.0 K1 M. RHELBHRGSZMCI_H0301 XBI, (Muralla) 50Vd	RHEL81H472K0□□H03□	X8L (Murata)	50Vdc	4700pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELBH1908XCI_H0301   XBL (Murata)   SOVIDE   G8000FF10%   3.8-6.35   2.5   5.0   K1   N. RHELBH11008XCI_H0301   XBL (Murata)   SOVIDE   T0000pF10%   3.8-6.35   2.5   5.0   K1   N. RHELBH1908XCI_H0301   XBL (Murata)   SOVIDE   T0000pF10%   3.8-6.35   2.5   5.0   K1   N. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   T0000pF10%   3.8-6.35   2.5   5.0   K1   N. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   T0000pF10%   3.8-6.35   2.5   5.0   K1   N. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   22000pF110%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   22000pF110%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   22000pF110%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   33000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   33000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   33000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   47000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   68000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   68000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   68000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   6.000pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   0.10pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   0.10pF10%   3.8-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   0.10pF10%   4.0-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   0.2pF10%   4.0-6.35   2.5   2.5   A.2   C. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   0.2pF10%   4.0-6.35   2.5   5.0   K1   M. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   0.2pF10%   4.0-6.35   2.5   5.0   K1   M. RHELBH193XCI_H0301   XBL (Murata)   SOVIDE   0.2pF10%   5.5-6.0   3.15	RHEL81H472K0□□H03□	X8L (Murata)	50Vdc	4700pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHELBIHIO3KO_CH0GC	RHEL81H682K0□□H03□	X8L (Murata)	50Vdc	6800pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELBHHOSKOILCH03L	RHEL81H682K0□□H03□	X8L (Murata)	50Vdc	6800pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHELBIHISSKO_IMBG]	RHEL81H103K0□□H03□	X8L (Murata)	50Vdc	10000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELBIHISSKOICH03	RHEL81H103K0□□H03□	X8L (Murata)	50Vdc	10000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H228K0□LH093□	RHEL81H153K0□□H03□	X8L (Murata)	50Vdc	15000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELBHH323KO	RHEL81H153K0□□H03□	X8L (Murata)	50Vdc	15000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHELB1H333K0□LH03□	RHEL81H223K0□□H03□	X8L (Murata)	50Vdc	22000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELBH1473K0□CH03□	RHEL81H223K0□□H03□	X8L (Murata)	50Vdc	22000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H473K0     H03     X8L (Murata)   SOVde   47000pF±10%   3.6x3.5   2.5   2.5   5.0   K1   Murata   Murata   SOVde   47000pF±10%   3.6x3.5   2.5   5.0   K1   Murata   Murata   SOVde   47000pF±10%   3.6x3.5   2.5   5.0   K1   Murata   SOVde   68000pF±10%   3.6x3.5   2.5   2.5   5.0   K1   Murata   SOVde   68000pF±10%   3.6x3.5   2.5   2.5   5.0   K1   Murata   SOVde   68000pF±10%   3.6x3.5   2.5   2.5   5.0   K1   Murata   SOVde   0.10pF±10%   3.6x3.5   2.5   2.5   5.0   K1   Murata   SOVde   0.10pF±10%   3.6x3.5   2.5   2.5   5.0   K1   Murata   SOVde   0.10pF±10%   4.0x3.5   2.5   2.5   5.0   K1   Murata   SOVde   0.15pF±10%   4.0x3.5   2.5   2.5   5.0   K1   Murata   SOVde   0.15pF±10%   4.0x3.5   2.5   2.5   5.0   K1   Murata   SOVde   0.22pF±10%   4.0x3.5   2.5   5.0   K1   Murata   SOVde   0.22pF±10%   4.0x3.5   2.5   5.0   K1   Murata   SOVde   0.23pF±10%   4.0x3.5   2.5   5.0   K1   Murata   SOVde   0.33pF±10%   5.5x4.0   3.15   5.0   K1   Murata   SOVde   0.33pF±10%	RHEL81H333K0□□H03□	X8L (Murata)	50Vdc	33000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELB1H473K0    H03	RHEL81H333K0□□H03□	X8L (Murata)	50Vdc	33000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHELB1H683K0□   H03□   X8L (Murata)   S0Vdc   68000pF±10%   3.6x3.5   2.5   5.0   K1   MRELB1H104K0□   H03□   X8L (Murata)   S0Vdc   68000pF±10%   3.6x3.5   2.5   5.0   K1   MRELB1H104K0□   H03□   X8L (Murata)   S0Vdc   0.10pF±10%   3.6x3.5   2.5   5.0   K1   MRELB1H104K0□   X8L (Murata)   S0Vdc   0.10pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H154K1□   H03□   X8L (Murata)   S0Vdc   0.10pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H24K1□   H03□   X8L (Murata)   S0Vdc   0.22pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H224K1□   H03□   X8L (Murata)   S0Vdc   0.22pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H324K1□   H03□   X8L (Murata)   S0Vdc   0.22pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H324K1□   H03□   X8L (Murata)   S0Vdc   0.33pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H334K1□   H03□   X8L (Murata)   S0Vdc   0.33pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H334K1□   H03□   X8L (Murata)   S0Vdc   0.33pF±10%   4.0x3.5   2.5   5.0   K1   MRELB1H334K1□   H03□   X8L (Murata)   S0Vdc   0.47pF±10%   5.5x4.0   3.15   2.5   A2   □   MRELB1H344K2□   H03□   X8L (Murata)   S0Vdc   0.47pF±10%   5.5x4.0   3.15   2.5   A2   □   MRELB1H346K2□   H03□   X8L (Murata)   S0Vdc   0.68pF±10%   5.5x4.0   3.15   5.0   K1   MRELB1H684K2□   H03□   X8L (Murata)   S0Vdc   0.68pF±10%   5.5x4.0   3.15   5.0   K1   MRELB1H106K2□   H03□   X8L (Murata)   S0Vdc   0.68pF±10%   5.5x4.0   3.15   5.0   K1   MRELB1H106K2□   MRELB1H106K2□   S0U   MRELB1	RHEL81H473K0□□H03□	X8L (Murata)	50Vdc	47000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELBIHGS3KO   H03   XBL (Murala)	RHEL81H473K0□□H03□	X8L (Murata)	50Vdc	47000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHELBIH104K0   H03   XBL (Murata)	RHEL81H683K0□□H03□	X8L (Murata)	50Vdc	68000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHELBIH194K0   H03	RHEL81H683K0□□H03□	X8L (Murata)	50Vdc	68000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H154K1	RHEL81H104K0□□H03□	X8L (Murata)	50Vdc	0.10µF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81H154K1	RHEL81H104K0□□H03□	X8L (Murata)	50Vdc	0.10µF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81H224K1		X8L (Murata)	50Vdc	0.15µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL81H324K1	RHEL81H154K1□□H03□	X8L (Murata)	50Vdc	0.15µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL81H334K1	RHEL81H224K1□□H03□	X8L (Murata)	50Vdc	0.22µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL81H334K1	RHEL81H224K1□□H03□	X8L (Murata)	50Vdc	0.22µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHELB1H474K2   H03   X8L (Murata) 50Vdc	RHEL81H334K1□□H03□	X8L (Murata)	50Vdc	0.33µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL81H474K2   H03   X8L (Murata)	RHEL81H334K1□□H03□	X8L (Murata)	50Vdc	0.33µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL81H684K2□H03□	RHEL81H474K2□□H03□	X8L (Murata)	50Vdc	0.47µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHEL81H684K2□H03□	RHEL81H474K2□□H03□	X8L (Murata)	50Vdc	0.47µF±10%	5.5×4.0	3.15	5.0	K1	M1
RHEL81H105K2	RHEL81H684K2□□H03□	X8L (Murata)	50Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHEL81H105K2□□H03□         X8L (Murata)         50Vdc         1.0µF±10%         5.5×4.0         3.15         5.0         K1         M.           RHEL81H155K2□□H03□         X8L (Murata)         50Vdc         1.5µF±10%         5.5×4.0         3.15         2.5         A2         □           RHEL81H155K2□□H03□         X8L (Murata)         50Vdc         1.5µF±10%         5.5×4.0         3.15         5.0         K1         M.           RHEL81H225K2□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×4.0         3.15         5.0         K1         M.           RHEL81H335K3□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×4.0         3.15         5.0         K1         M.           RHEL81H335K3□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5×5.0         4.0         2.5         A2         □           RHEL81H35K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         2.5         A2         □           RHEL81H375K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         5.0         K1         M.           RHEL81H166MW□H03□         X8L (Murata)         100Vdc         2	RHEL81H684K2□□H03□	X8L (Murata)	50Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RHEL81H155K2□□H03□         X8L (Murata)         50Vdc         1.5µF±10%         5.5×4.0         3.15         2.5         A2         D           RHEL81H155K2□□H03□         X8L (Murata)         50Vdc         1.5µF±10%         5.5×4.0         3.15         5.0         K1         M           RHEL81H225K2□□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×4.0         3.15         5.0         K1         M           RHEL81H325K3□□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×6.0         4.0         2.5         A2         D           RHEL81H335K3□□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5×5.0         4.0         2.5         A2         D           RHEL81H35K3□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5×5.0         4.0         5.0         K1         M           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         5.0         K1         M           RHEL82A221K0□□H03□         X8L (Murata)         50Vdc         10µF±20%         5.5×5.0         4.0         5.0         K1         M           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         220pF	RHEL81H105K2□□H03□	X8L (Murata)	50Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHELB1H155K2□H03□         X8L (Murata)         50Vdc         1.5µF±10%         5.5×4.0         3.15         5.0         K1         M           RHELB1H225K2□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×4.0         3.15         2.5         A2         D           RHELB1H225K2□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×4.0         3.15         5.0         K1         M           RHELB1H335K3□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5×5.0         4.0         2.5         A2         D           RHEL81H35K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         5.0         K1         M           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         5.0         K1         M           RHEL81H106MW□H03□         X8L (Murata)         50Vdc         1.7µF±10%         5.5×5.0         4.0         5.0         K1         M           RHEL82A221K0□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A31K0□H03□         X8L (Murata)         100Vdc         330pF±10% </th <th>RHEL81H105K2□□H03□</th> <th>X8L (Murata)</th> <th>50Vdc</th> <th>1.0µF±10%</th> <th>5.5×4.0</th> <th>3.15</th> <th>5.0</th> <th>K1</th> <th>M1</th>	RHEL81H105K2□□H03□	X8L (Murata)	50Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RHEL81H225K2□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×4.0         3.15         2.5         A2         D           RHEL81H225K2□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5×4.0         3.15         5.0         K1         M           RHEL81H335K3□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5×5.0         4.0         2.5         A2         D           RHEL81H375K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         2.5         A2         D           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         2.5         A2         D           RHEL81H175K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5×5.0         4.0         5.0         K1         M           RHEL82H175K3□H03□         X8L (Murata)         50Vdc         10µF±20%         5.5×7.5         4.0         5.0         K1         M           RHEL82A21K0□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A31K0□H03□         X8L (Murata)         100Vdc         330pF±10% <th>RHEL81H155K2□□H03□</th> <th>X8L (Murata)</th> <th>50Vdc</th> <th>1.5µF±10%</th> <th>5.5×4.0</th> <th>3.15</th> <th>2.5</th> <th>A2</th> <th>DB</th>	RHEL81H155K2□□H03□	X8L (Murata)	50Vdc	1.5µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHEL81H225K2□H03□         X8L (Murata)         50Vdc         2.2µF±10%         5.5x4.0         3.15         5.0         K1         M           RHEL81H335K3□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5x5.0         4.0         2.5         A2         D           RHEL81H335K3□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5x5.0         4.0         2.5         A2         D           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H166MW□H03□         X8L (Murata)         50Vdc         10µF±20%         5.5x7.5         4.0         5.0         K1         M           RHEL82A21K0□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A231K0□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A31K0□H03□         X8L (Murata)         100Vdc         470pF±10% <th>RHEL81H155K2□□H03□</th> <th>· ' '</th> <th></th> <th>•</th> <th></th> <th></th> <th></th> <th></th> <th>M1</th>	RHEL81H155K2□□H03□	· ' '		•					M1
RHEL81H335K3□H03□         X8L (Murata)         50Vdc         3.3μF±10%         5.5x5.0         4.0         2.5         A2         D           RHEL81H335K3□H03□         X8L (Murata)         50Vdc         3.3μF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7μF±10%         5.5x5.0         4.0         2.5         A2         D           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7μF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H106MW□H03□         X8L (Murata)         50Vdc         10μF±20%         5.5x7.5         4.0         5.0         K1         M           RHEL82A221K0□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         2.5         A2         D           RHEL82A31K0□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A31K0□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A15K0□H03□         X8L (Murata)         100Vdc         470pF±10% <th>RHEL81H225K2□□H03□</th> <th>X8L (Murata)</th> <th>50Vdc</th> <th>2.2µF±10%</th> <th>5.5×4.0</th> <th>3.15</th> <th>2.5</th> <th>A2</th> <th>DB</th>	RHEL81H225K2□□H03□	X8L (Murata)	50Vdc	2.2µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHEL81H335K3□H03□         X8L (Murata)         50Vdc         3.3µF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5x5.0         4.0         2.5         A2         □           RHEL81H475K3□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H106MW□H03□         X8L (Murata)         50Vdc         10µF±20%         5.5x7.5         4.0         5.0         K1         M           RHEL82A221K0□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A331K0□H03□         X8L (Murata)         100Vdc         230pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A31K0□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A471K0□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A671K0□H03□         X8L (Murata)         100Vdc         470pF±10% </th <th>RHEL81H225K2□□H03□</th> <th>X8L (Murata)</th> <th>50Vdc</th> <th>2.2µF±10%</th> <th>5.5×4.0</th> <th>3.15</th> <th>5.0</th> <th>K1</th> <th>M1</th>	RHEL81H225K2□□H03□	X8L (Murata)	50Vdc	2.2µF±10%	5.5×4.0	3.15	5.0	K1	M1
RHEL81H475K3□□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5x5.0         4.0         2.5         A2         D           RHEL81H475K3□□H03□         X8L (Murata)         50Vdc         4.7µF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H106MW□□H03□         X8L (Murata)         50Vdc         10µF±20%         5.5x7.5         4.0         5.0         K1         M           RHEL82A221K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         2.5         A2         D           RHEL82A221K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         2.5         A2         D           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         2.5         A2         D           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc	RHEL81H335K3□□H03□	X8L (Murata)	50Vdc	3.3µF±10%	5.5×5.0	4.0	2.5	A2	DB
RHEL81H475K3□□H03□         X8L (Murata)         50Vdc         4.7μF±10%         5.5x5.0         4.0         5.0         K1         M           RHEL81H106MW□□H03□         X8L (Murata)         50Vdc         10μF±20%         5.5x7.5         4.0         5.0         K1         M           RHEL82A221K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A321K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A31K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc <th< th=""><th>RHEL81H335K3□□H03□</th><th>X8L (Murata)</th><th>50Vdc</th><th>3.3µF±10%</th><th>5.5×5.0</th><th>4.0</th><th>5.0</th><th>K1</th><th>M1</th></th<>	RHEL81H335K3□□H03□	X8L (Murata)	50Vdc	3.3µF±10%	5.5×5.0	4.0	5.0	K1	M1
RHEL81H106MW□□H03□         X8L (Murata)         50Vdc         10µF±20%         5.5x7.5         4.0         5.0         K1         M           RHEL82A221K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A221K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A31K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc	RHEL81H475K3□□H03□	X8L (Murata)	50Vdc	4.7μF±10%	5.5×5.0	4.0	2.5	A2	DB
RHEL82A221K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         2.5         A2         D           RHEL82A221K0□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         2.5         A2         D           RHEL82A371K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc	RHEL81H475K3□□H03□	X8L (Murata)	50Vdc	4.7μF±10%	5.5×5.0	4.0	5.0		M1
RHEL82A221KO□□H03□         X8L (Murata)         100Vdc         220pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A331KO□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6×3.5         2.5         2.5         A2         □           RHEL82A331KO□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A371KO□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6×3.5         2.5         2.5         A2         □           RHEL82A471KO□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A681KO□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         2.5         A2         □           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc		,							M1
RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc		<u> </u>		•					DB
RHEL82A331K0□□H03□         X8L (Murata)         100Vdc         330pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         2.5         A2         □           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6x3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc		1 1		•					M1
RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc		· , ,							DB
RHEL82A471K0□□H03□         X8L (Murata)         100Vdc         470pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc		, ,		·					M1
RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         10		<u> </u>		-					DB
RHEL82A681K0□□H03□         X8L (Murata)         100Vdc         680pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A322K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M		· · · · · ·							M1
RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A102K0□□H03□         X8L (Murata)         100Vdc         1000pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A152K0□□H03□         X8L (Murata)         100Vdc         1500pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M		<u> </u>				_			DB
RHEL82A102K0□□H03□       X8L (Murata)       100Vdc       1000pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A152K0□□H03□       X8L (Murata)       100Vdc       1500pF±10%       3.6×3.5       2.5       2.5       A2       □         RHEL82A152K0□□H03□       X8L (Murata)       100Vdc       1500pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A222K0□□H03□       X8L (Murata)       100Vdc       2200pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A322K0□□H03□       X8L (Murata)       100Vdc       2200pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       5.0       K1       M		<u> </u>							M1
RHEL82A152K0□□H03□       X8L (Murata)       100Vdc       1500pF±10%       3.6×3.5       2.5       2.5       A2       D         RHEL82A152K0□□H03□       X8L (Murata)       100Vdc       1500pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A222K0□□H03□       X8L (Murata)       100Vdc       2200pF±10%       3.6×3.5       2.5       2.5       A2       D         RHEL82A322K0□□H03□       X8L (Murata)       100Vdc       2200pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       5.0       K1       M		<u> </u>							DB
RHEL82A152K0□□H03□       X8L (Murata)       100Vdc       1500pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A222K0□□H03□       X8L (Murata)       100Vdc       2200pF±10%       3.6×3.5       2.5       2.5       A2       D         RHEL82A222K0□□H03□       X8L (Murata)       100Vdc       2200pF±10%       3.6×3.5       2.5       5.0       K1       M         RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       2.5       A2       D         RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       5.0       K1       M		<u> </u>							M1
RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M		<u> </u>							DB
RHEL82A222K0□□H03□         X8L (Murata)         100Vdc         2200pF±10%         3.6×3.5         2.5         5.0         K1         M           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         2.5         A2         D           RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M		<del> </del>							M1
RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       2.5       A2       D         RHEL82A332K0□□H03□       X8L (Murata)       100Vdc       3300pF±10%       3.6×3.5       2.5       5.0       K1       M		<u> </u>							DB
RHEL82A332K0□□H03□         X8L (Murata)         100Vdc         3300pF±10%         3.6×3.5         2.5         5.0         K1         M		<u> </u>							M1
		<u> </u>							DB
RHELX204/2KU     HO3     XXI (Murata)   100\/do   4700oE+10%   36√35   35   35   36   40   F		<u> </u>							M1
	RHEL82A472K0 H03	X8L (Murata)	100Vdc	4700pF±10%	3.6×3.5	2.5	2.5	A2	DB M1



Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHEL82A682K0□□H03□	X8L (Murata)	100Vdc	6800pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL82A682K0□□H03□	X8L (Murata)	100Vdc	6800pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL82A103K0□□H03□	X8L (Murata)	100Vdc	10000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL82A103K0□□H03□	X8L (Murata)	100Vdc	10000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL82A153K0□□H03□	X8L (Murata)	100Vdc	15000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL82A153K0□□H03□	X8L (Murata)	100Vdc	15000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL82A223K0□□H03□	X8L (Murata)	100Vdc	22000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL82A223K0□□H03□	X8L (Murata)	100Vdc	22000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL82A333K1□□H03□	X8L (Murata)	100Vdc	33000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL82A333K1□□H03□	X8L (Murata)	100Vdc	33000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL82A473K1□□H03□	X8L (Murata)	100Vdc	47000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL82A473K1□□H03□	X8L (Murata)	100Vdc	47000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL82A683K1□□H03□	X8L (Murata)	100Vdc	68000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL82A683K1□□H03□	X8L (Murata)	100Vdc	68000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL82A104K1□□H03□	X8L (Murata)	100Vdc	0.10µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL82A104K1□□H03□	X8L (Murata)	100Vdc	0.10µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL82A154K2□□H03□	X8L (Murata)	100Vdc	0.15µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHEL82A154K2□□H03□	X8L (Murata)	100Vdc	0.15µF±10%	5.5×4.0	3.15	5.0	K1	M1
RHEL82A224K2□□H03□	X8L (Murata)	100Vdc	0.22µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHEL82A224K2□□H03□	X8L (Murata)	100Vdc	0.22µF±10%	5.5×4.0	3.15	5.0	K1	M1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

## **Specifications and Test Methods**

			Specifi	cation					
No.	AEC-Q200	Test Item	Temperature Compensating Type (Char. X8G)	High Dielectric Constant Type (Char. X8L)	AEC-Q200 Test Method				
1	Pre-and P	ost-Stress Test		-					
	High Tem Exposure	perature (Storage)	The measured and observed ch specifications in the following tal	•					
		Appearance	No defects or abnormalities						
2		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Within ±12.5%	Sit the capacitor for 1,000±12h at 150±3°C. Let sit for 24±2h at room temperature, then measure.				
		Q/D.F.	Q≧350	0.04 max.					
		I.R.	More than 1,000M $\Omega$ or 50M $\Omega \cdot \mu$	ıF (Whichever is smaller)					
	Temperat Cycling	ture	The measured and observed ch specifications in the following tal	•	Perform the 1,000 cycles according to the four heat treatments listed in the following table. Let sit for 24±2h at *room condition,				
		Appearance	No defects or abnormalities exceedating	ept color change of outer	Step         1         2         3         4				
3		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Within ±12.5%	Temp. (°C)         -55+0/-3         Room Temp.         150+3/-0         Room Temp.           Time (min.)         15±3         1         15±3         1				
		Q/D.F.	Q≧350	0.05 max.	•Pretreatment  Perform the heat treatment at 150+0/-10°C for 60±5 min and				
		I.R.	1,000M $\Omega$ or 50M $\Omega$ · μF min. (Wi	nichever is smaller)	then let sit for 24±2h at *room condition. (for Char. X8L)				
	Moisture Resistance	e	The measured and observed ch specifications in the following tal	•	Apply the 24h heat (25 to 65°C) and humidity (80 to 98%) treatment shown below, 10 consecutive times.				
		Appearance	No defects or abnormalities		Let sit for 24±2h at *room condition, then measure.				
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Within ±12.5%	Humidity Humidity Humidity Humidity Humidity (°C) 90-98% 80-98% 90-98% 80-98% 90-98%  70 65 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				
		Q/D.F.	Q≧200	0.05 max.	55 50				
4		l.R.	500M $\Omega$ or 25M $\Omega$ · μF min. (Whice	chever is smaller)	0 1 2 3 4 5 6 7 8 9 101112131415161718192021222324  Hours				
	Biased H	umidity	The measured and observed ch specifications in the following tal	•	Apply the rated voltage and DC1.3+0.2/-0V (add 6.8kΩ resistor				
		Appearance	No defects or abnormalities		at 85±3°C and 80 to 85% humidity for 1,000±12h.  Remove and let sit for 24±2h at *room condition, then measure.				
5		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Within ±12.5%	The charge/discharge current is less than 50mA.  •Pretreatment				
		Q/D.F.	Q≥200	0.05 max.	Perform the heat treatment at 150+0/-10°C for 60±5 min and				
		I.R.	500M $\Omega$ or 25M $\Omega$ · μF min. (Which	chever is smaller)	then let sit for 24±2h at *room condition. (for Char. X8L)				
	Operation	nal Life	The measured and observed ch specifications in the following tal	,	Apply 150% of the rated voltage for 1,000±12h at 150±3°C.				
		Appearance	No defects or abnormalities excoonting	ept color change of outer	Let sit for 24±2h at *room condition, then measure. The charge/discharge current is less than 50mA.				
6		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Within ±12.5%	•Pretreatment Apply test voltage for 60±5 min at test temperature.				
		Q/D.F.	Q≧350	0.04 max.	Remove and let sit for 24±2h at *room condition.  (for Char. X8L)				
		I.R.	1,000M $\Omega$ or 50M $\Omega$ · μF min. (W	nichever is smaller)					
7	External Visual No defects or abnormalities				Visual inspection				
8	Physical Dimension W		Within the specified dimensions		Using calipers and micrometers.				
9	Marking		To be easily legible.		Visual inspection				

 $<sup>^{\</sup>star}$  "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa





## Specifications and Test Methods

\( \) Continued from the preceding page.

			Specif						
lo.	AEC-Q200	Test Item	Temperature Compensating Type (Char. X8G)	High Dielectric Constant Type (Char. X8L)		AEC-Q200 Test	Method		
		Appearance	No defects or abnormalities		Per MIL-STD-202				
		Capacitance	Within the specified tolerance			t (by volume) of iso			
	Resistance	Q/D.F.	Q≥1,000	0.025 max.	3 parts (by volume) of mineral spirits Solvent 2: Terpene defluxer				
0	to Solvents				Solvent 3: 42 pa				
		I.R.	More than 10,000M $\Omega$ or 500M $\Omega$	· μF (Whichever is smaller)	part (by volume) of propylene glycol     monomethyl ether     part (by volume) of monoethanolamine				
		Appearance	No defects or abnormalities		Three shocks in e	each direction shou	ld be applied along 3		
1	Mechanical	Capacitance	Within the specified tolerance				est specimen (18 shocks) lalf-sine and should		
	Shock	Q/D.F.	Q≥1,000	0.025 max.		1,500G and velocity			
		Appearance	No defects or abnormalities		· ·	•	a simple harmonic motion		
		Capacitance	Within the specified tolerance				he frequency being varied limits of 10 and 2,000Hz.		
2	Vibration	Q/D.F.	Q≥1,000	0.025 max.	The frequency range, from 10 to 2,000Hz and return to should be traversed in approximately 20min. This moti should be applied for 12 items in each 3 mutually perp directions (total of 36 times).				
	Resistance to Soldering Heat		The measured and observed ch specifications in the following ta		The lead wire in i	mmaraad in the ma	ltod coldor 1 E to Omm		
		Appearance	No defects or abnormalities				lited solder 1.5 to 2mm 0±1s. The specified item		
3		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Within ±7.5%	are measured aft  •Pretreatment	er 24±2h.			
		Dielectric Strength (Between Terminals)	No defects		Perform the heat treatment at 150+0/-10°C for 60±5 m then let sit for 24±2h at *room condition. (for Char. X8L				
	Thermal S	Shock	The measured and observed ch specifications in the following ta		Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20s.).				
		Appearance	No defects or abnormalities		Let sit for 24±2h	at *room condition,	then measure.		
		Capacitance	Within ±5% or ±0.5pF	M/H-1- 140 F0/	Step	1	2		
4		Change	(Whichever is larger)	Within ±12.5%	Temp. (°C) Time (min.)	-55+0/-3 15±3	150+3/-0 15±3		
		Q/D.F.	Q≧350	0.05 max.	•Pretreatment	1020	1020		
		I.R.	1,000M $\Omega$ or 50M $\Omega$ · μF min. (W	hichever is smaller)			-0/-10°C for 60±5min and lition. (for Char. X8L)		
		Appearance	No defects or abnormalities						
5	ESD	Capacitance	Within the specified tolerance		Per AEC-Q200-0	04			
,	LOD	Q/D.F.	Q≥1,000	0.025 max.	1 61 AEC-Q200-0	U <del>-1</del>			
		I.R.	More than 10,000M $\Omega$ or 500M $\Omega$	· μF (Whichever is smaller)					
6 Solderabili		Lead wire should be soldered with u			(JIS-K-8101) and propotion) and the 2±0.5 sec. In both	rosin (JIS-K-5902) en into molten sold	l into a solution of ethano (25%rosin in weight er (JIS-Z-3282) for of dipping is up to about		
						Free Solder (Sn-3.0 or H63A Eutectic S			

<sup>\* &</sup>quot;room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa





## **Specifications and Test Methods**

Continued from the preceding page.

			•	ication				
o. AEC-Q20	00 Test Item	Temperature Co (Char	mpensating Type : X8G)	High Dielectric Constant Type (Char. X8L)	AEC-Q200 Test Method			
	Appearance	No defects or a	abnormalities		Visual inspection.			
	Capacitance	Within the spec	cified tolerance		The capacitance, Q/D.F. should be measured at 25°C at the frequency and voltage shown in the table.			
	Q/D.F.	Q≧1,000		0.025 max.	Char.         Nominal Cap.         Frequency         Voltage           X8G         C≤1,000pF         1±0.1MHz         AC0.5 to 5V (r.m.s.           X8G         C>1000pF         1±0.1kHz         AC1±0.2V (r.m.s.           X8L         -         1±0.1kHz         AC1±0.2V (r.m.s.			
	Insulation Resistance	Room Temperature	10,000MΩ or 50 (Whichever is s	00MΩ · μF min. smaller)	The insulation resistance should be measured at 25±3°C DC voltage not exceeding the rated voltage at normal temperature and humidity and within 2min. of charging. (Charge/Discharge current $\leq$ 50mA.)			
Electrica Charac-	(I.R.)	High Temperature	100M $\Omega$ or 5M $\Omega$ (Whichever is s	•	The insulation resistance should be measured at 150±3°C wit a DC voltage not exceeding the rated voltage at normal temperature and humidity and within 2min. of charging. (Charge/Discharge current ≤ 50mA.)			
terizatio		Between Terminals	No defects or a	bnormalities	The capacitor should not be damaged when DC voltage of 300% of the rated voltage (for Char. X8G) or DC voltage of 250% of the rated voltage (for Char. X8L) is applied between the terminations for 1 to 5 seconds. (Charge/Discharge current ≤ 50mA.)			
	Dielectric Strength	Body Insulation	No defects or a	bnormalities	The capacitor is placed in a container with metal balls of 1mm diameter so that each terminal, short-circuit is kept approximately 2mm from the balls, and 250% of the rated DC voltage is impressed for 1 to 5 seconds between capacitor terminals and metal balls.  (Charge/Discharge current ≤ 50mA.)			
8 Character		Termination no	it to be broken or	loosened	As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the force applied for 10±1 seconds.			
Strengtl	Bending Strength	Termination no	t to be broken or	loosened	Each lead wire should be subjected to a force of 2.5N and to be bent 90° at the point of egress in one direction. Each win then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds.			
9 Temper	Within the specified Tolerance. (Table A) perature racteristics  Capacitance Drift is within ±0.2% or ±0.05pF (Whichever is larger)			Within ±15% (Temp. Range: -55 to +125°C) Within +15/-40% (Temp. Range: +125 to +150°C)	The capacitance change should be measured after 5min. a each specified temperature step.    Step			

<sup>\* &</sup>quot;room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

#### Table A

			_55°C								
		Nominal Values	Capacitance Change from 25°C (%)								
	Char.		-55	5°C	-30	0°C	−10°C				
		(ppm/°C) *	Max.	Min.	Max.	Min.	Max.	Min.			
	YAG	0+30	0.58	_0 24	0.40	_0.17	0.25	_0.11			

<sup>\*</sup> Nominal values denote the temperature coefficient within a range of 25°C to 150°C.



# Radial Lead Type Monolithic Ceramic Capacitors



## RDE Series (For General Use Only) (DC25V-DC1kV)

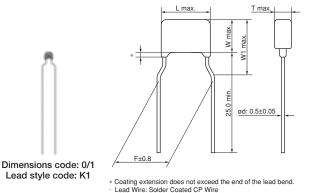
#### ■ Features

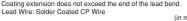
- 1. Small size and large capacitance
- 2. Low ESR characteristics for high frequency
- 3. Meet LF (Lead Free) and HF (Halogen Free)
- 4. Flow soldering is available, but re-flow soldering is not available.

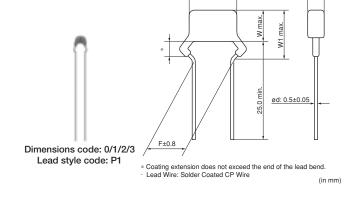
#### Applications

General electronic equipment

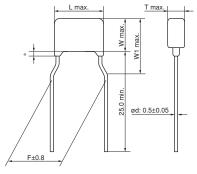
(Do not use for automotive-related power train and safety equipment.)







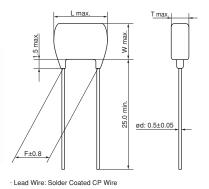




Coating extension does not exceed the end of the lead bend Lead Wire: Solder Coated CP Wire



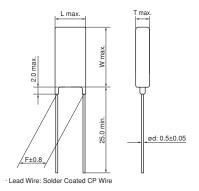
Dimensions code: 5 Lead style code: B1



(in mm)

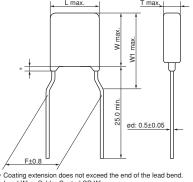


Lead style code: B1



(in mm)

# Dimensions code: W Lead style code: K1



Lead Wire: Solder Coated CP Wire

#### Dimensions

Dimensions and		Dimensions (mm)									
Lead Style Code	L	W	W1	Т	F	d					
0P1/0S1	5.0	3.5	6.0		2.5	0.5					
0K1/0M1	4.0	3.5	6.0		5.0	0.5					
1P1/1S1	5.0	3.5	5.0		2.5	0.5					
1K1/1M1	4.5	3.5	5.0		5.0	0.5					
2P1/2S1	5.5	4.0	6.0		2.5	0.5					
2K1/2M1	5.5	4.0	6.0	See the individual	5.0	0.5					
3P1/3S1	5.5	5.0	7.5	product specification	2.5	0.5					
3K1/3M1	5.5	5.0	7.5		5.0	0.5					
4K1/4M1	7.5	5.5	8.0		5.0	0.5					
5B1/5E1	7.5	7.5*	-		5.0	0.5					
UB1/UE1	7.7	12.5*	-		5.0	0.5					
WK1/WM1	5.5	7.5	10.0		5.0	0.5					

\*DC630V, DC1kV: W+0.5mm



■ Marking

■ Marking													
Rated Voltag	e DC	25V			DC50V				DC100V		DC250V	DC630V	DC1kV
Dimensions Char.	X7S	X7R	C0G	X7S	X7R	F	Y5V	C0G	X7S	X7R		X7R, U2J	
0	224K	104K	A	-	224K	473	103Z	A	_	224K	_	_	_
1	\\	_	102J	-		-	-	\/	-	\ <u></u>	U 102J	_	-
2	475 K2C	) –	-	(M 475 K5C)	(MK5C)	_	-	-	-	(M) 105 (K1C)	(U2J) (U2J) (W473 (X7R)	(U2J) (U2J) (X7R)	102 JAU (U2J) (U2J) (MKAC) (X7R)
3, 4, W	M226 K2C	_	-	-	(M335 K5C	-	-	-	(M225 K1C	-	(M473 J4U (U2J) (M224 K4C (X7R)	(M103 J7U (U2J) (M104 K7C (X7R)	(M472 JAU (U2J) (M333 KAC (X7R)
5, U	-	-	-	-	-	-	-	-	-	-	- (M 474 K4C (X7R)	(U2J) (U2J) (W474, M7C (X7R)	(U2J) (U2J) (U2T) (X7R)
Temperature Characteristics		with code omitted (F					V char.: F	, U2J cha	r.: U)				
Nominal Capacitance	Under 1	00pF: Actu	ual value	100pF a	nd over: N	larked wit	h 3 figures	3					
Capacitance Tolerance		with code omitted (F	Please ref	er to the n	narking ex	ample.)							
Rated Voltage	Lower h	with code orizontal li omitted (f	ne for F cl	nar.			250V: 4, D	C630V: 7	, DC1kV:	A)			
Manufacturer's Identification	Marked A part is	with M omitted (F	Please ref	er to the n	narking ex	ample.)							

## Temperature Compensating Type, C0G/U2J Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C1H1R0C0□□H03□	C0G (EIA)	50Vdc	1.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H1R0C0□□H03□	C0G (EIA)	50Vdc	1.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H2R0C0□□H03□	C0G (EIA)	50Vdc	2.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H2R0C0□□H03□	C0G (EIA)	50Vdc	2.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H3R0C0□□H03□	C0G (EIA)	50Vdc	3.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H3R0C0□□H03□	C0G (EIA)	50Vdc	3.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H4R0C0□□H03□	C0G (EIA)	50Vdc	4.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H4R0C0□□H03□	C0G (EIA)	50Vdc	4.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H5R0C0□□H03□	C0G (EIA)	50Vdc	5.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H5R0C0□□H03□	C0G (EIA)	50Vdc	5.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H6R0D0□□H03□	C0G (EIA)	50Vdc	6.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H6R0D0□□H03□	C0G (EIA)	50Vdc	6.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H7R0D0□□H03□	C0G (EIA)	50Vdc	7.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H7R0D0□□H03□	C0G (EIA)	50Vdc	7.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1





Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C1H8R0D0□□H03□	C0G (EIA)	50Vdc	8.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H8R0D0□□H03□	C0G (EIA)	50Vdc	8.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H9R0D0□□H03□	C0G (EIA)	50Vdc	9.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H9R0D0□□H03□	C0G (EIA)	50Vdc	9.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H100J0□□H03□	C0G (EIA)	50Vdc	10pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H100J0□□H03□	C0G (EIA)	50Vdc	10pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H120J0□□H03□	C0G (EIA)	50Vdc	12pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H120J0□□H03□	C0G (EIA)	50Vdc	12pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H150J0□□H03□	C0G (EIA)	50Vdc	15pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H150J0□□H03□	C0G (EIA)	50Vdc	15pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H180J0□□H03□	C0G (EIA)	50Vdc	18pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H180J0□□H03□	C0G (EIA)	50Vdc	18pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H220J0□□H03□	C0G (EIA)	50Vdc	22pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H220J0□□H03□	C0G (EIA)	50Vdc	22pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H270J0□□H03□	C0G (EIA)	50Vdc	27pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H270J0□□H03□	C0G (EIA)	50Vdc	27pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H330J0□□H03□	C0G (EIA)	50Vdc	33pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H330J0□□H03□	C0G (EIA)	50Vdc	33pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H390J0□□H03□	C0G (EIA)	50Vdc	39pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H390J0□□H03□	C0G (EIA)	50Vdc	39pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H470J0□□H03□	C0G (EIA)	50Vdc	47pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H470J0□□H03□	C0G (EIA)	50Vdc	47pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H560J0□□H03□	C0G (EIA)	50Vdc	56pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H560J0 H03	C0G (EIA)	50Vdc	56pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H680J0 H03	C0G (EIA)	50Vdc	68pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H680J0 H03	C0G (EIA)	50Vdc	68pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H820J0 H03	COG (EIA)	50Vdc	82pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H820J0 H03	COG (EIA)	50Vdc	82pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H101J0 H03	COG (EIA)	50Vdc	100pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H101J0 H03	COG (EIA)	50Vdc	100pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H121J0 H03	COG (EIA)	50Vdc	120pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H121J0□□H03□  RDE5C1H151J0□□H03□	COG (EIA)	50Vdc 50Vdc	120pF±5%	5.0×3.5 4.0×3.5	2.5	2.5 5.0	P1 K1	S1 M1
RDE5C1H151J0 H03	COG (EIA)	50Vdc 50Vdc	150pF±5% 150pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H181J0   H03	COG (EIA)	50Vdc	180pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H181J0   H03	COG (EIA)	50Vdc	180pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H221J0   H03	COG (EIA)	50Vdc	220pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H221J0	COG (EIA)	50Vdc	220pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H271J0 H03	COG (EIA)	50Vdc	270pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H271J0	COG (EIA)	50Vdc	270pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H331J0 H03	COG (EIA)	50Vdc	330pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H331J0	COG (EIA)	50Vdc	330pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H391J0 H03	COG (EIA)	50Vdc	390pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H391J0□□H03□	COG (EIA)	50Vdc	390pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H471J0□□H03□	COG (EIA)	50Vdc	470pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H471J0□□H03□	C0G (EIA)	50Vdc	470pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H561J0□□H03□	C0G (EIA)	50Vdc	560pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H561J0□□H03□	C0G (EIA)	50Vdc	560pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H681J0□□H03□	C0G (EIA)	50Vdc	680pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H681J0□□H03□	C0G (EIA)	50Vdc	680pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H821J0□□H03□	C0G (EIA)	50Vdc	820pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H821J0□□H03□	C0G (EIA)	50Vdc	820pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H102J0□□H03□	C0G (EIA)	50Vdc	1000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H102J0□□H03□	C0G (EIA)	50Vdc	1000pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H122J0□□H03□	C0G (EIA)	50Vdc	1200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H122J0□□H03□	C0G (EIA)	50Vdc	1200pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H152J0□□H03□	C0G (EIA)	50Vdc	1500pF±5%	4.0×3.5	2.5	5.0	K1	M1

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C1H152J0□□H03□	C0G (EIA)	50Vdc	1500pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H182J0□□H03□	C0G (EIA)	50Vdc	1800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H182J0□□H03□	C0G (EIA)	50Vdc	1800pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H222J0□□H03□	C0G (EIA)	50Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H222J0□□H03□	C0G (EIA)	50Vdc	2200pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H272J0□□H03□	C0G (EIA)	50Vdc	2700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H272J0□□H03□	C0G (EIA)	50Vdc	2700pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H332J0□□H03□	C0G (EIA)	50Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H332J0□□H03□	C0G (EIA)	50Vdc	3300pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H392J0□□H03□	C0G (EIA)	50Vdc	3900pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H392J0□□H03□	C0G (EIA)	50Vdc	3900pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H472J1□□H03□	C0G (EIA)	50Vdc	4700pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H472J1□□H03□	C0G (EIA)	50Vdc	4700pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H562J1□□H03□	C0G (EIA)	50Vdc	5600pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H562J1□□H03□	C0G (EIA)	50Vdc	5600pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H682J1□□H03□	C0G (EIA)	50Vdc	6800pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H682J1□□H03□	C0G (EIA)	50Vdc	6800pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H822J1□□H03□	C0G (EIA)	50Vdc	8200pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H822J1□□H03□	C0G (EIA)	50Vdc	8200pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H103J1□□H03□	C0G (EIA)	50Vdc	10000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H103J1□□H03□	C0G (EIA)	50Vdc	10000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H123J1□□H03□	C0G (EIA)	50Vdc	12000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H123J1□□H03□	C0G (EIA)	50Vdc	12000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H153J1□□H03□	C0G (EIA)	50Vdc	15000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H153J1□□H03□	C0G (EIA)	50Vdc	15000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H183J1□□H03□	C0G (EIA)	50Vdc	18000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H183J1□□H03□	C0G (EIA)	50Vdc	18000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H223J1□□H03□	C0G (EIA)	50Vdc	22000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H223J1□□H03□	C0G (EIA)	50Vdc	22000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C2A1R0C0□□H03□	C0G (EIA)	100Vdc	1.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A1R0C0□□H03□	C0G (EIA)	100Vdc	1.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A2R0C0□□H03□	C0G (EIA)	100Vdc	2.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A2R0C0□□H03□	C0G (EIA)	100Vdc	2.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A3R0C0□□H03□	C0G (EIA)	100Vdc	3.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A3R0C0□□H03□	C0G (EIA)	100Vdc	3.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A4R0C0□□H03□	C0G (EIA)	100Vdc	4.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A4R0C0□□H03□	C0G (EIA)	100Vdc	4.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A5R0C0□□H03□	C0G (EIA)	100Vdc	5.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A5R0C0□□H03□	C0G (EIA)	100Vdc	5.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A6R0D0□□H03□	C0G (EIA)	100Vdc	6.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A6R0D0□□H03□	C0G (EIA)	100Vdc	6.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A7R0D0□□H03□	C0G (EIA)	100Vdc	7.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A7R0D0□□H03□	C0G (EIA)	100Vdc	7.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A8R0D0□□H03□	C0G (EIA)	100Vdc	8.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A8R0D0□□H03□	C0G (EIA)	100Vdc	8.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A9R0D0□□H03□	C0G (EIA)	100Vdc	9.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A9R0D0□□H03□	C0G (EIA)	100Vdc	9.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A100J0□□H03□	C0G (EIA)	100Vdc	10pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A100J0□□H03□	C0G (EIA)	100Vdc	10pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A120J0□□H03□	C0G (EIA)	100Vdc	12pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A120J0□□H03□	C0G (EIA)	100Vdc	12pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A150J0□□H03□	C0G (EIA)	100Vdc	15pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A150J0□□H03□	C0G (EIA)	100Vdc	15pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A180J0□□H03□	C0G (EIA)	100Vdc	18pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A180J0□□H03□	C0G (EIA)	100Vdc	18pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A220J0□□H03□	C0G (EIA)	100Vdc	22pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A220J0□□H03□	C0G (EIA)	100Vdc	22pF±5%	5.0×3.5	2.5	2.5	P1	S1

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C2A270J0□□H03□	C0G (EIA)	100Vdc	27pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A270J0 H03	C0G (EIA)	100Vdc	27pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A330J0□□H03□	C0G (EIA)	100Vdc	33pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A330J0□□H03□	C0G (EIA)	100Vdc	33pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A390J0□□H03□	C0G (EIA)	100Vdc	39pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A390J0□□H03□	C0G (EIA)	100Vdc	39pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A470J0□□H03□	C0G (EIA)	100Vdc	47pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A470J0□□H03□	C0G (EIA)	100Vdc	47pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A560J0□□H03□	C0G (EIA)	100Vdc	56pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A560J0□□H03□	C0G (EIA)	100Vdc	56pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A680J0□□H03□	C0G (EIA)	100Vdc	68pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A680J0□□H03□	C0G (EIA)	100Vdc	68pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A820J0□□H03□	C0G (EIA)	100Vdc	82pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A820J0□□H03□	C0G (EIA)	100Vdc	82pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A101J0□□H03□	C0G (EIA)	100Vdc	100pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A101J0□□H03□	C0G (EIA)	100Vdc	100pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A121J0□□H03□	C0G (EIA)	100Vdc	120pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A121J0□□H03□	C0G (EIA)	100Vdc	120pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A151J0□□H03□	C0G (EIA)	100Vdc	150pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A151J0□□H03□	C0G (EIA)	100Vdc	150pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A181J0□□H03□	C0G (EIA)	100Vdc	180pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A181J0□□H03□	C0G (EIA)	100Vdc	180pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A221J0□□H03□	C0G (EIA)	100Vdc	220pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A221J0□□H03□	C0G (EIA)	100Vdc	220pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A271J0□□H03□	C0G (EIA)	100Vdc	270pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A271J0□□H03□	C0G (EIA)	100Vdc	270pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A331J0□□H03□	C0G (EIA)	100Vdc	330pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A331J0□□H03□	C0G (EIA)	100Vdc	330pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A391J0□□H03□	C0G (EIA)	100Vdc	390pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A391J0 H03	COG (EIA)	100Vdc	390pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A471J0 H03	COG (EIA)	100Vdc	470pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A471J0 H03	COG (EIA)	100Vdc	470pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A681J0 H03	COG (EIA)	100Vdc	680pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A681J0 H03	COG (EIA)	100Vdc	680pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A821J0 H03	COG (EIA)	100Vdc	820pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A821J0 H03	COG (EIA)	100Vdc	820pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A102J0□□H03□  RDE5C2A102J0□□H03□	COG (EIA)	100Vdc 100Vdc	1000pF±5%	4.0×3.5 5.0×3.5	2.5	5.0 2.5	K1 P1	M1 S1
RDE5C2A102J0 H03 RDE5C2A122J0 H03	COG (EIA)	100Vdc	1000pF±5%	5.0×3.5 4.0×3.5	2.5	5.0	K1	M1
RDE5C2A122J0 H03	C0G (EIA)	100Vdc	1200pF±5% 1200pF±5%	4.0×3.5 5.0×3.5	2.5	2.5	P1	S1
RDE5C2A152J0 H03	COG (EIA)	100Vdc	1500pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A152J0 H03	COG (EIA)	100Vdc	1500pF±5%	4.0x3.5 5.0x3.5	2.5	2.5	P1	S1
RDE5C2A182J1 H03	COG (EIA)	100Vdc	1800pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A182J1 H03	COG (EIA)	100Vdc	1800pF±5%	4.3x3.5 5.0×3.5	3.15	2.5	P1	S1
RDE5C2A222J1 H03	COG (EIA)	100Vdc	2200pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A222J1 H03	COG (EIA)	100Vdc	2200pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C2A272J1 H03	COG (EIA)	100Vdc	2700pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A272J1 H03	COG (EIA)	100Vdc	2700pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C2A332J1 H03	COG (EIA)	100Vdc	3300pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A332J1 H03	COG (EIA)	100Vdc	3300pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE7U2E101J1  H03	U2J (EIA)	250Vdc	100pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E151J1  H03	U2J (EIA)	250Vdc	150pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E221J1  H03	U2J (EIA)	250Vdc	220pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E331J1  H03	U2J (EIA)	250Vdc	330pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E471J1	U2J (EIA)	250Vdc	470pF±5%	4.5×3.5	3.15	5.0	K1	M1

RDE7U2E681J1 H03		Voltage	·	(mm)	(mm)	F (mm)	Code Bulk	Code Taping
	U2J (EIA)	250Vdc	680pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E102J1□□H03□	U2J (EIA)	250Vdc	1000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E152J1□□H03□	U2J (EIA)	250Vdc	1500pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E222J1□□H03□	U2J (EIA)	250Vdc	2200pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E332J1□□H03□	U2J (EIA)	250Vdc	3300pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E472J1□□H03□	U2J (EIA)	250Vdc	4700pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E682J2□□H03□	U2J (EIA)	250Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E103J2□□H03□	U2J (EIA)	250Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E153J2□□H03□	U2J (EIA)	250Vdc	15000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E223J2□□H03□	U2J (EIA)	250Vdc	22000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E333J3□□H03□	U2J (EIA)	250Vdc	33000pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U2E473J3□□H03□	U2J (EIA)	250Vdc	47000pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U2J100J2□□H03□	U2J (EIA)	630Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J150J2□□H03□	U2J (EIA)	630Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J220J2□□H03□	U2J (EIA)	630Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J330J2□□H03□	U2J (EIA)	630Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J470J2□□H03□	U2J (EIA)	630Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J680J2□□H03□	U2J (EIA)	630Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J101J2□□H03□	U2J (EIA)	630Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J151J2□□H03□	U2J (EIA)	630Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J221J2□□H03□	U2J (EIA)	630Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J331J2□□H03□	U2J (EIA)	630Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J471J2□□H03□	U2J (EIA)	630Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J681J2□□H03□	U2J (EIA)	630Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J102J2□□H03□	U2J (EIA)	630Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J152J2□□H03□	U2J (EIA)	630Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J222J2□□H03□	U2J (EIA)	630Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J332J2□□H03□	U2J (EIA)	630Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J472J2□□H03□	U2J (EIA)	630Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J682J3□□H03□	U2J (EIA)	630Vdc	6800pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U2J103J3□□H03□	U2J (EIA)	630Vdc	10000pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U2J153J4□□H03□	U2J (EIA)	630Vdc	15000pF±5%	7.5×5.5	4.0	5.0	K1	M1
RDE7U2J223J4□□H03□	U2J (EIA)	630Vdc	22000pF±5%	7.5×5.5	4.0	5.0	K1	M1
RDE7U2J333J5□□H03□	U2J (EIA)	630Vdc	33000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RDE7U2J473J5□□H03□	U2J (EIA)	630Vdc	47000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RDE7U2J943JU□□H03□	U2J (EIA)	630Vdc	94000pF±5%	7.7×13.0	4.0	5.0	B1	E1
RDE7U3A100J2□□H03□	U2J (EIA)	1000Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A150J2□□H03□	U2J (EIA)	1000Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A220J2□□H03□	U2J (EIA)	1000Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A330J2□□H03□	U2J (EIA)	1000Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A470J2□□H03□	U2J (EIA)	1000Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A680J2□□H03□	U2J (EIA)	1000Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A101J2□□H03□	U2J (EIA)	1000Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A151J2□□H03□	U2J (EIA)	1000Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A221J2□□H03□	U2J (EIA)	1000Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A331J2□□H03□	U2J (EIA)	1000Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A471J2□□H03□	U2J (EIA)	1000Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A681J2□□H03□	U2J (EIA)	1000Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A102J2□□H03□	U2J (EIA)	1000Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A152J3□□H03□	U2J (EIA)	1000Vdc	1500pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U3A222J3□□H03□	U2J (EIA)	1000Vdc	2200pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U3A332J4□□H03□	U2J (EIA)	1000Vdc	3300pF±5%	7.5×5.5	4.0	5.0	K1	M1
RDE7U3A472J4□□H03□	U2J (EIA)	1000Vdc	4700pF±5%	7.5×5.5	4.0	5.0	K1	M1
RDE7U3A682J5□□H03□	U2J (EIA)	1000Vdc	6800pF±5%	7.5×8.0	4.0	5.0	B1	E1
RDE7U3A103J5□□H03□	U2J (EIA)	1000Vdc	10000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RDE7U3A203JU□□H03□	U2J (EIA)	1000Vdc	20000pF±5%	7.7×13.0	4.0	5.0	B1	E1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)



# **High Dielectric Constant Type, X7R/X7S Characteristics**

Part Number	Temp.	Rated	Capacitance	Dimensions LxW	Dimension T	Lead Space F	Lead Style Code	Lead Style Code
	Char.	Voltage	0.1	(mm)	(mm)	(mm)	Bulk	Taping
RDER71E104K0 H03	X7R (EIA)	25Vdc	0.1µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71E104K0 H03	X7R (EIA)	25Vdc	0.1μF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E224K0 H03	X7S (EIA)	25Vdc	0.22µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDEC71E224K0 H03	X7S (EIA)	25Vdc	0.22µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E474K0 - H03	X7S (EIA)	25Vdc	0.47µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDEC71E474K0 H03	X7S (EIA)	25Vdc	0.47µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E105K0 H03	X7S (EIA)	25Vdc	1.0µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDEC71E105K0 H03	X7S (EIA)	25Vdc	1.0µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E225K1 H03	X7S (EIA)	25Vdc	2.2µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDEC71E225K1□□H03□	X7S (EIA)	25Vdc	2.2µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDEC71E475K2 H03	X7S (EIA)	25Vdc	4.7μF±10%	5.5×4.0	3.15	2.5	P1	S1
RDEC71E475K2□□H03□	X7S (EIA)	25Vdc	4.7μF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC71E106K2□□H03□	X7S (EIA)	25Vdc	10μF±10%	5.5×4.0	3.15	2.5	P1	S1
RDEC71E106K2□□H03□	X7S (EIA)	25Vdc	10μF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC71E226K3 H03	X7S (EIA)	25Vdc	22µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDEC71E226K3 H03	X7S (EIA)	25Vdc	22µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC71E476MW H03	X7S (EIA)	25Vdc	47μF±20%	5.5×7.5	4.0	5.0	K1	M1
RDER71H221K0□□H03□	X7R (EIA)	50Vdc	220pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H221K0□□H03□	X7R (EIA)	50Vdc	220pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H331K0□□H03□	X7R (EIA)	50Vdc	330pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H331K0□□H03□	X7R (EIA)	50Vdc	330pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H471K0□□H03□	X7R (EIA)	50Vdc	470pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H471K0□□H03□	X7R (EIA)	50Vdc	470pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H681K0□□H03□	X7R (EIA)	50Vdc	680pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H681K0□□H03□	X7R (EIA)	50Vdc	680pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H102K0□□H03□	X7R (EIA)	50Vdc	1000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H102K0□□H03□	X7R (EIA)	50Vdc	1000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H152K0□□H03□	X7R (EIA)	50Vdc	1500pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H152K0□□H03□	X7R (EIA)	50Vdc	1500pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H222K0□□H03□	X7R (EIA)	50Vdc	2200pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H222K0□□H03□	X7R (EIA)	50Vdc	2200pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H332K0□□H03□	X7R (EIA)	50Vdc	3300pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H332K0□□H03□	X7R (EIA)	50Vdc	3300pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H472K0□□H03□	X7R (EIA)	50Vdc	4700pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H472K0□□H03□	X7R (EIA)	50Vdc	4700pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H682K0□□H03□	X7R (EIA)	50Vdc	6800pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H682K0□□H03□	X7R (EIA)	50Vdc	6800pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H103K0□□H03□	X7R (EIA)	50Vdc	10000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H103K0□□H03□	X7R (EIA)	50Vdc	10000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H153K0□□H03□	X7R (EIA)	50Vdc	15000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H153K0□□H03□	X7R (EIA)	50Vdc	15000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H223K0□□H03□	X7R (EIA)	50Vdc	22000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H223K0□□H03□	X7R (EIA)	50Vdc	22000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H333K0□□H03□	X7R (EIA)	50Vdc	33000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H333K0□□H03□	X7R (EIA)	50Vdc	33000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H473K0□□H03□	X7R (EIA)	50Vdc	47000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H473K0□□H03□	X7R (EIA)	50Vdc	47000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H683K0□□H03□	X7R (EIA)	50Vdc	68000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H683K0□□H03□	X7R (EIA)	50Vdc	68000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H104K0□□H03□	X7R (EIA)	50Vdc	0.1μF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H104K0□□H03□	X7R (EIA)	50Vdc	0.1μF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H154K1□□H03□	X7R (EIA)	50Vdc	0.15µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H154K1□□H03□	X7R (EIA)	50Vdc	0.15µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H224K1□□H03□	X7R (EIA)	50Vdc	0.22µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H224K1□□H03□	X7R (EIA)	50Vdc	0.22µF±10%	5.0×3.5	3.15	2.5	P1	S1

Softmace from the preceding par	Temp.	Rated		Dimensions	Dimension	Lead Space	Lead Style	Lead Style
Part Number	Char.	Voltage	Capacitance	LxW (mm)	T (mm)	F (mm)	Code Bulk	Code Taping
RDER71H334K1□□H03□	X7R (EIA)	50Vdc	0.33µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H334K1□□H03□	X7R (EIA)	50Vdc	0.33µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H474K1□□H03□	X7R (EIA)	50Vdc	0.47µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H474K1□□H03□	X7R (EIA)	50Vdc	0.47µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H684K2□□H03□	X7R (EIA)	50Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H684K2□□H03□	X7R (EIA)	50Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER71H105K2□□H03□	X7R (EIA)	50Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H105K2□□H03□	X7R (EIA)	50Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER71H155K2□□H03□	X7R (EIA)	50Vdc	1.5µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H155K2□□H03□	X7R (EIA)	50Vdc	1.5µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER71H225K2□□H03□	X7R (EIA)	50Vdc	2.2µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H225K2□□H03□	X7R (EIA)	50Vdc	2.2µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER71H335K3□□H03□	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDER71H335K3□□H03□	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC71H475K2□□H03□	X7S (EIA)	50Vdc	4.7µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDEC71H475K2□□H03□	X7S (EIA)	50Vdc	4.7µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC71H106K3□□H03□	X7S (EIA)	50Vdc	10μF±10%	5.5×5.0	4.0	2.5	P1	S1
RDEC71H106K3□□H03□	X7S (EIA)	50Vdc	10μF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC71H226MW□□H03□	X7S (EIA)	50Vdc	22µF±20%	5.5×7.5	4.0	5.0	K1	M1
RDER72A221K0□□H03□	X7R (EIA)	100Vdc	220pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A221K0□□H03□	X7R (EIA)	100Vdc	220pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A331K0□□H03□	X7R (EIA)	100Vdc	330pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A331K0□□H03□	X7R (EIA)	100Vdc	330pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A471K0□□H03□	X7R (EIA)	100Vdc	470pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A471K0□□H03□	X7R (EIA)	100Vdc	470pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A681K0□□H03□	X7R (EIA)	100Vdc	680pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A681K0□□H03□	X7R (EIA)	100Vdc	680pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A102K0□□H03□	X7R (EIA)	100Vdc	1000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A102K0 H03	X7R (EIA)	100Vdc	1000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A152K0 H03	X7R (EIA)	100Vdc	1500pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A152K0 H03	X7R (EIA)	100Vdc	1500pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A222K0 H03	X7R (EIA)	100Vdc	2200pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A222K0 H03	X7R (EIA)	100Vdc	2200pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A332K0□□H03□  RDER72A332K0□□H03□	X7R (EIA)	100Vdc 100Vdc	3300pF±10%	4.0×3.5 5.0×3.5	2.5	5.0 2.5	K1 P1	M1 S1
RDER72A472K0 H03	X7R (EIA) X7R (EIA)	100Vdc	3300pF±10% 4700pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A472K0 H03	X7R (EIA)	100Vdc	4700pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A682K0 H03	X7R (EIA)	100Vdc	6800pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A682K0 H03	X7R (EIA)	100Vdc	6800pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A103K0 H03	X7R (EIA)	100Vdc	10000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A103K0 H03	X7R (EIA)	100Vdc	10000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A153K0□□H03□	X7R (EIA)	100Vdc	15000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A153K0□□H03□	X7R (EIA)	100Vdc	15000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A223K0□□H03□	X7R (EIA)	100Vdc	22000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A223K0□□H03□	X7R (EIA)	100Vdc	22000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A333K1□□H03□	X7R (EIA)	100Vdc	33000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A333K1□□H03□	X7R (EIA)	100Vdc	33000pF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A473K1□□H03□	X7R (EIA)	100Vdc	47000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A473K1□□H03□	X7R (EIA)	100Vdc	47000pF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A683K1□□H03□	X7R (EIA)	100Vdc	68000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A683K1□□H03□	X7R (EIA)	100Vdc	68000pF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A104K1□□H03□	X7R (EIA)	100Vdc	0.1μF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A104K1□□H03□	X7R (EIA)	100Vdc	0.1µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A154K2□□H03□	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER72A154K2□□H03□	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72A224K1□□H03□	X7R (EIA)	100Vdc	0.22µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A224K1□□H03□	X7R (EIA)	100Vdc	0.22µF±10%	5.0×3.5	3.15	2.5	P1	S1

Continued from the preceding pa	ge.	ı						ı
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDER72A334K1□□H03□	X7R (EIA)	100Vdc	0.33µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A334K1□□H03□	X7R (EIA)	100Vdc	0.33µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A474K1□□H03□	X7R (EIA)	100Vdc	0.47µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A474K1□□H03□	X7R (EIA)	100Vdc	0.47µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A684K2□□H03□	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER72A684K2□□H03□	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72A105K2□□H03□	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER72A105K2□□H03□	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC72A155K3□□H03□	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDEC72A155K3□□H03□	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC72A225K3□□H03□	X7S (EIA)	100Vdc	2.2µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDEC72A225K3□□H03□	X7S (EIA)	100Vdc	2.2µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC72A475MW□□H03□	X7S (EIA)	100Vdc	4.7µF±20%	5.5×7.5	4.0	5.0	K1	M1
RDER72E102K1□□H03□	X7R (EIA)	250Vdc	1000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E152K1□□H03□	X7R (EIA)	250Vdc	1500pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E222K1□□H03□	X7R (EIA)	250Vdc	2200pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E332K1□□H03□	X7R (EIA)	250Vdc	3300pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E472K1□□H03□	X7R (EIA)	250Vdc	4700pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E682K1□□H03□	X7R (EIA)	250Vdc	6800pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E103K1□□H03□	X7R (EIA)	250Vdc	10000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E153K1□□H03□	X7R (EIA)	250Vdc	15000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E223K1□□H03□	X7R (EIA)	250Vdc	22000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E333K2□□H03□	X7R (EIA)	250Vdc	33000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72E473K2□□H03□	X7R (EIA)	250Vdc	47000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72E683K2□□H03□	X7R (EIA)	250Vdc	68000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72E104K2□□H03□	X7R (EIA)	250Vdc	0.10µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72E154K3□□H03□	X7R (EIA)	250Vdc	0.15µF±10%	5.5×5.0	3.15	5.0	K1	M1
RDER72E224K3□□H03□	X7R (EIA)	250Vdc	0.22µF±10%	5.5×5.0	3.15	5.0	K1	M1
RDER72E334K4□□H03□	X7R (EIA)	250Vdc	0.33µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDER72E474K4□□H03□	X7R (EIA)	250Vdc	0.47µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDER72E684K5□□H03□	X7R (EIA)	250Vdc	0.68µF±10%	7.5×7.5	4.0	5.0	B1	E1
RDER72E105K5□□H03□	X7R (EIA)	250Vdc	1.0µF±10%	7.5×7.5	4.0	5.0	B1	E1
RDER72E225MU□□H03□	X7R (EIA)	250Vdc	2.2µF±20%	7.7×12.5	4.0	5.0	B1	E1
RDER72J102K2□□H03□	X7R (EIA)	630Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J152K2□□H03□	X7R (EIA)	630Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J222K2□□H03□	X7R (EIA)	630Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J332K2□□H03□	X7R (EIA)	630Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J472K2□□H03□	X7R (EIA)	630Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J682K2□□H03□	X7R (EIA)	630Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J103K2□□H03□	X7R (EIA)	630Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J153K2□□H03□	X7R (EIA)	630Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J223K2□□H03□	X7R (EIA)	630Vdc	22000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J333K3□□H03□	X7R (EIA)	630Vdc	33000pF±10%	5.5×5.0	3.15	5.0	K1	M1
RDER72J473K3□□H03□	X7R (EIA)	630Vdc	47000pF±10%	5.5×5.0	3.15	5.0	K1	M1
RDER72J683K4□□H03□	X7R (EIA)	630Vdc	68000pF±10%	7.5×5.5	3.15	5.0	K1	M1
RDER72J104K4□□H03□	X7R (EIA)	630Vdc	0.10µF±10%	7.5×5.5	3.15	5.0	K1	M1
RDER72J154K5□□H03□	X7R (EIA)	630Vdc	0.15µF±10%	7.5×8.0	4.0	5.0	B1	E1
RDER72J224K5□□H03□	X7R (EIA)	630Vdc	0.22µF±10%	7.5×8.0	4.0	5.0	B1	E1
RDER72J474MU□□H03□	X7R (EIA)	630Vdc	0.47µF±20%	7.7×13.0	4.0	5.0	B1	E1
RDER73A471K2□□H03□	X7R (EIA)	1000Vdc	470pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A681K2□□H03□	X7R (EIA)	1000Vdc	680pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A102K2□□H03□	X7R (EIA)	1000Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A152K2□□H03□	X7R (EIA)	1000Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A222K2□□H03□	X7R (EIA)	1000Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A332K2□□H03□	X7R (EIA)	1000Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A472K2□□H03□	X7R (EIA)	1000Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A682K2□□H03□	X7R (EIA)	1000Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
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Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping			
RDER73A103K2□□H03□	X7R (EIA)	1000Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1			
RDER73A153K3□□H03□	X7R (EIA)	1000Vdc	15000pF±10%	5.5×5.0	4.0	5.0	K1	M1			
RDER73A223K3□□H03□	X7R (EIA)	1000Vdc	22000pF±10%	5.5×5.0	4.0	5.0	K1	M1			
RDER73A333K4□□H03□	X7R (EIA)	1000Vdc	33000pF±10%	7.5×5.5	4.0	5.0	K1	M1			
RDER73A473K4□□H03□	X7R (EIA)	1000Vdc	47000pF±10%	7.5×5.5	4.0	5.0	K1	M1			
RDER73A683K5□□H03□	X7R (EIA)	1000Vdc	68000pF±10%	7.5×8.0	4.0	5.0	B1	E1			
RDER73A104K5□□H03□	X7R (EIA)	1000Vdc	0.10µF±10%	7.5×8.0	4.0	5.0	B1	E1			
RDER73A224MU□□H03□	X7R (EIA)	1000Vdc	0.22µF±20%	7.7×13.0	4.0	5.0	B1	E1			

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

# High Dielectric Constant Type, F/Y5V Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDEF11H103Z0□□H01□	F (JIS)	50Vdc	10000pF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF11H103Z0□□H01□	F (JIS)	50Vdc	10000pF+80/-20%	5.0×3.5	2.5	2.5	P1	S1
RDEF51H103Z0□□H03□	Y5V (EIA)	50Vdc	10000pF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF51H103Z0□□H03□	Y5V (EIA)	50Vdc	10000pF+80/-20%	5.0×3.5	2.5	2.5	P1	S1
RDEF11H223Z0□□H01□	F (JIS)	50Vdc	22000pF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF11H223Z0□□H01□	F (JIS)	50Vdc	22000pF+80/-20%	5.0×3.5	2.5	2.5	P1	S1
RDEF51H223Z0□□H03□	Y5V (EIA)	50Vdc	22000pF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF51H223Z0□□H03□	Y5V (EIA)	50Vdc	22000pF+80/-20%	5.0×3.5	2.5	2.5	P1	S1
RDEF11H473Z0□□H01□	F (JIS)	50Vdc	47000pF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF11H473Z0□□H01□	F (JIS)	50Vdc	47000pF+80/-20%	5.0×3.5	2.5	2.5	P1	S1
RDEF51H473Z0□□H03□	Y5V (EIA)	50Vdc	47000pF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF51H473Z0□□H03□	Y5V (EIA)	50Vdc	47000pF+80/-20%	5.0×3.5	2.5	2.5	P1	S1
RDEF11H104Z0□□H01□	F (JIS)	50Vdc	0.1µF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF11H104Z0□□H01□	F (JIS)	50Vdc	0.1µF+80/-20%	5.0×3.5	2.5	2.5	P1	S1
RDEF51H104Z0□□H03□	Y5V (EIA)	50Vdc	0.1µF+80/-20%	4.0×3.5	2.5	5.0	K1	M1
RDEF51H104Z0□□H03□	Y5V (EIA)	50Vdc	0.1µF+80/-20%	5.0×3.5	2.5	2.5	P1	S1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

	Specifications Specifications			cations	Test Method				
No.	Ite	m	Temperature Compensating Type	High Dielectric Constant Type		Test Method			
1 Operating Temperature Range -55 to Page -55 to Robert Range -55 to Robert Range Ra		-55 to +125°C	Char. X7R, X7S: -55 to +125°C Char. F: -25 to +85°C Char. Y5V: -30 to +85°C		_				
2	Appearance		No defects or abnormalities		Visual inspecti	on			
3	Dimension an	d Marking	See previous pages		Visual inspecti	on, Vernier Caliper			
	Between Terminals  No defects or abnormalities  Dielectric Strength				voltages of Tal	DC250V         200           DC630V         150           DC1kV         130           DC25V, DC50V         250           DC100V, DC250V         200           DC630V         150	een the terminals		
4	4 Dielectric Strength Body Insulation		No defects or abnormalities		The capacitor is placed in a container with metal balls of 1 mm diameter so that each terminal, short-circuited, is kept approximately 2mm from the balls as shown in the figure, for 1 to 5 sec. between capacitor terminals and metal balls. (Charge/Discharge current ≤ 50mA)    Rated Voltage   Test Voltage   DC25V, DC50V   250% of the rated voltage   DC100V, DC250V   200% of the rated voltage   DC630V, DC1kV   DC1300V				
5	5 Insulation Between Terminals		Rated Voltage: DC25V, DC50V, 10,000MΩ min. or 500MΩ • μF Rated Voltage: DC250V, DC630 10,000MΩ min. or 100MΩ • μF	The insulation resistance should be measured with a DC voltage not exceeding the rated voltage (DC500±50V in case of rated vlotage: DC630V, DC1kV) at normal temperature and humidity and within 2 min. of charging. (Charge/Discharge current ≤ 50mA)					
6	Capacitance	1	Within the specified tolerance		The capacitano	ce, Q/D.F. should be	measured at 25°C		
7	7 Q/Dissipation Factor (D.F.)		30pF min.: Q≥1,000 30pF max.: Q≥400+20C C: Nominal capacitance (pF)	Char. X7R: 0.025 max. Char. F, Y5V: 0.05 max. Char. X7S: 0.125 max.	Capacita  Item  Frequency  Voltage	C≦1000pF  1±0.1MHz  AC0.5 to 5V (r.m.s.)  Constant Type  Ince  C≦10μF	C>1000pF  1±0.1kHz AC1±0.2V (r.m.s.)  C>10µF  120±24Hz AC0.5±0.1V		
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The capacitance change should be measured after 5 min. at each specified temperature stage.  (1) Temperature Compensating Type The temperature coefficient is determined using the capacitance measured in step 3 as a reference. When cycling the temperature sequentially from step 1 through 5 (-55 to +125°C) the capacitance should be within the specified tolerance for the temperature coefficient and capacitance change as shown in Table A. The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in step 1, 3 and 5 by the cap. value in step 3.    Step   Temperature (°C)
min. at each specified temperature stage.  (1) Temperature Compensating Type The temperature coefficient is determined using the capacitance measured in step 3 as a reference. When cycling the temperature sequentially from step 1 through 5 (-55 to +125°C) the capacitance should be within the specified tolerance for the temperature coefficient and capacitance change as shown in Table A. The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in step 1, 3 and 5 by the cap. value in step 3.    Step   Temperature (°C)
coefficient and capacitance change as shown in Table A. The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in step 1, 3 and 5 by the cap. value in step 3.    Step   Temperature (°C)     1
3 25±2 4 125±3 5 25±2 (2) High Dielectric Constant Type The ranges of capacitance change compared with the 25°C (Char. F: 20°C) value over the temperature ranges as shown in Table B should be within the specified ranges.  • Pretreatment (for high dielectric constant type) Perform a heat treatment at 150+0/-10°C for 1 hr., and
25°C (Char. F: 20°C) value over the temperature ranges as shown in Table B should be within the specified ranges.  • Pretreatment (for high dielectric constant type) Perform a heat treatment at 150+0/-10°C for 1 hr., and
As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the force applied for 10±1 sec.
Each lead wire should be subjected to a force of 2.5N and then bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 sec.
The capacitor is soldered securely to a supporting
terminal and a 10 to 55Hz vibration of 1.5mm peak-peak amplitude is applied for 6 hrs. total, 2 hrs. in each mutually perpendicular direction. Allow 1 min. to cycle the frequency from 10Hz to 55Hz and the converse.
The terminal of a capacitor is dipped into a 25% ethanol (JIS-K-8101) solution of rosin (JIS-K-5902) and then into molten solder for 2±0.5 sec. In both cases the depth of dipping is up to about 1.5mm to 2mm from the terminal body.  Temp. of solder: 245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu) 235±5°C H60A or H63A Eutectic Solder
The lead wire is immersed in the melted solder 1.5mm
Vithin ±10% to 2mm from the main body at 350±10°C for 3.5±0.5 in ±20% sec.
The specified items are measured after 24±2 hrs. • Pretreatment (for high dielectric constant type) Perform a heat treatment at 150+0/-10°C for 1 hr., and then let sit at room temperature for 24±2 hrs.

Continued on the following page.





Continued from the preceding page.

No.	Ite	m	Specifi	cations		Test Meth	nod		
٧٥.	itei	11	Temperature Compensating Type	High Dielectric Constant Type		rest ivietn	iou		
		Appearance	No defects or abnormalities						
		Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	Char. X7R, X7S: Within ±12.5% Char. F, Y5V: Within ±30%	The capacitor cycles.	r should be subjec	cted to 5 te	emperature	
		Q/D.F.	30pF min.: Q≥350 10pF to 30pF: Q≥275+5C/2 10pF max.: Q≥200+10C C: Nominal capacitance (pF)	Char. X7R: 0.05 max. Char. F, Y5V: 0.075 max. Char. X7S: 0.2 max.	*	set for 24±2 hrs. a e. Temperature		Time (min)	
13	Temperature		, ,	DC100V		Min. Operating Te		30±3	
	Cycle	Insulation Resistance	Rated Voltage: DC25V, DC50V, 1,000MΩ, 50MΩ • μF min. (wh Rated Voltage: DC250V, DC630 1,000MΩ, 10MΩ • μF min. (wh	ichever is smaller) V	4	Room Temp Max. Operating Te Room Temp nt (for high dielecti	emp. ±3 o.	3 max. 30±3 3 max.	
		Dielectric Strength (Between Terminals)	No defects or abnormalities		Perform a heat treatment at 150+0/-10°C for 1 h then let sit at room temperature for 24±2 hrs.				
		Appearance	No defects or abnormalities						
		Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	Char. X7R, X7S: Within ±15% Char. F, Y5V: Within ±30%	Set the capac	citor at 40±2°C an	d relative	humidity of	
14	Humidity (Steady State)	Q/D.F.	30pF min.: Q≥350 10pF to 30pF: Q≥275+5C/2 10pF max.: Q≥200+10C C: Nominal capacitance (pF)	Char. X7R: 0.05 max. Char. F, Y5V: 0.075 max. Char. X7S: 0.2 max.	90 to 95% for 500±24 hrs. Remove and set for 24±2 hrs. at room temper then measure. • Pretreatment (for high dielectric constant type				
		Insulation Resistance	Rated Voltage: DC25V, DC50V, 1,000MΩ, 50MΩ • μF min. (wh Rated Voltage: DC250V, DC630 1,000MΩ, 10MΩ • μF min. (wh	ichever is smaller) V		at treatment at 15 room temperature			
		Appearance	No defects or abnormalities						
		Capacitance Change	Within ±7.5% or ±0.75pF (whichever is larger)	Char. X7R, X7S: Within ±15% Char. F, Y5V: Within ±30%	Apply the rate in 90 to 95%	ed voltage for 500: humidity.	<sup>+24</sup> hrs. a	t 40±2°C and	
15	Humidity Load	Q/D.F.	30pF min.: Q≥200 30pF max.: Q≥100+10C/3 C: Nominal capacitance (pF)	Char. X7R: 0.05 max. Char. F, Y5V: 0.075 max. Char. X7S: 0.2 max.	Remove and set for 24±2 hrs. at room temp then measure.  (Charge/Discharge current ≤50mA)  • Pretreatment (for high dielectric constant t				
		Insulation Resistance	Rated Voltage: DC25V, DC50V, 500MΩ or 25MΩ • μF min. (wh Rated Voltage: DC250V, DC630 1,000MΩ or 10MΩ • μF min. (v	ichever is smaller) V	Perform a hea	<ul> <li>Pretreatment (for high dielectric constant type)</li> <li>Perform a heat treatment at 150+0/-10°C for 1 hr., and then let sit at room temperature for 24±2 hrs.</li> </ul>			
		Appearance	No defects or abnormalities		Apply voltage	in Table for 1000	)+48 hrs. a	at the	
		Capacitance	Within ±3% or ±0.3pF	Char. X7R, X7S: Within ±15% (Rated Voltage: DC630V or less)	maximum ope Remove and	erating temperatur set for 24±2 hrs. a e. (Charge/Discha	re±3°C. at room te	mperature,	
	High	Change	(whichever is larger)	Within ±20% (Rated Voltage: DC1kV) Char. F, Y5V: Within ±30%	Temperature Compensating	Rated Voltage DC50V, DC100V, DC250V		voltage rated voltage	
16	Temperature Load	Q/D.F.       30pF min.: Q≥350       Char. X7R: 0.05 max.         10pF to 30pF: Q≥275+5C/2       Char. X7R: 0.05 max.         10pF max.: Q≥200+10C       Char. X7S: 0.2 max.         Char. X7S: 0.2 max.       Char. X7S: 0.2 max.		Type High Dielectric Constant Type	DC630V, DC1kV DC25V, DC50V, DC100V, DC250V DC630V DC1kV	150% of the	rated voltage rated voltage rated voltage rated voltage		
		Insulation Resistance	Rated Voltage: DC25V, DC50V, 1,000MΩ, 50MΩ • μF min. (wh Rated Voltage: DC250V, DC630 1,000MΩ, 10MΩ • μF min. (wh	ichever is smaller) V	Pretreatment (for high dielectric constant Appy test voltage for 1 hr., at test tempera Remove and set for 24±2 hrs. at room tem		nt type) ature.		
		Appearance	No defects or abnormalities					-	
17	Solvent Resistance	Marking	Legible	The capacitor should be fully immersed, unagitated, in reagent at 20 to 25°C for 30±5 sec. and then remove gently. Marking on the surface of the capacitor should immediately be visually examined.  Reagent:  Isopropyl alcohol					

## Table A

	Nominal Values	С	Capacitance Change from 25°C (%)								
Char.		−55°C		-30	0°C	-10°C					
	(ppm/°C) *1	Max.	Min.	Max.	Min.	Max.	Min.				
COG	0±30	0.58	-0.24	0.40	-0.17	0.25	-0.11				
U2J	-750±120	8.78	5.04	6.04	3.47	3.84	2.21				

<sup>\*1:</sup> Nominal values denote the temperature coefficient within a range of 25 to 125°C

## Table B

CI	Char. Temp. Range		Reference Temp.	Cap. Change Rate		
X	<b>7R</b> -55 to +125°C			Within ±15%		
Х	X7S	-55 t0 +125 C	25°C	Within ±22%		
Υ	′5V	−30 to + 85°C		Within ±용울%		
	F	–25 to + 85°C	20°C	Within ±36%		



# Radial Lead Type Monolithic Ceramic Capacitors



# RDE Series Large Capacitance and High Allowable Ripple Current (For General Use Only) (DC250V-DC630V)

#### ■ Features

- 1. Higher capacitance with DC-Bias; approximately 40% higher than X7R under loaded rated voltage.
- 2. Meet LF (Lead Free) and HF (Halogen Free)
- 3. Allowable higher ripple current
- Reduces acoustic noise
   Approximately 15dB reduction in comparison to leaded X7R characteristics parts.

Approximately 30dB reduction in comparison to SMD X7R characteristics part because the contact area is smaller than a SMD.

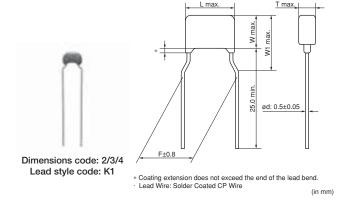
# Applications

- 1. DC smoothing capacitor for LED bulb
- 2. PFC capacitor for general use SMPS
- 3. Replace Al-E capacitor for long-life equipment

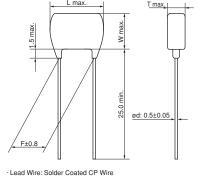
#### Dimensions

Dimensions and	DC Rated	Dimensions (mm)						
Lead Style Code	Voltage	L	W	W1	Т	F	d	
2K1/2M1	250V/450V/630V	5.5	4.0	6.0		5.0	0.5	
3K1/3M1	250V/450V/630V	5.5	5.0	7.5	See	5.0	0.5	
4K1/4M1	250V/450V/630V	7.5	5.5	8.0	the individual product	5.0	0.5	
5B1/5E1	250V/450V/630V	7.5	7.5*	-	specification	5.0	0.5	
UB1/UE1	250V/450V/630V	7.7	12.5*	-		5.0	0.5	

<sup>\*</sup>DC630V: W+0.5mm

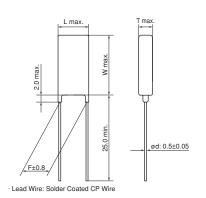






(in mm)





(in mm)

■ Marking

	Rated Voltage	DC250V	DC450V	DC630V				
Dimensions Code	Temp. Char.		X7T					
	2	(M 683)	(M 153 K97	(M 153)				
	3, 8	(M 334 K47	M 104 K97	(M 223 K77				
	5, U	②M 225 M47	(M) 474 K97	(M) 474 M77				
Temperatur	e Characteristics	Marked with code (X7T char.: 7)						
Nominal	Capacitance	Marked with 3 figures						
Capacita	nce Tolerance	Marked with code						
Rate	d Voltage	Marked with code (DC250V: 4, DC450V: 9, DC630V: 7)						
Manufacture	er's Identification	Marked with (M						

# High Dielectric Constant Type, X7T Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDED72E333K2□□H03□	X7T (EIA)	250Vdc	33000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72E473K2□□H03□	X7T (EIA)	250Vdc	47000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72E683K2□□H03□	X7T (EIA)	250Vdc	68000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72E104K3□□H03□	X7T (EIA)	250Vdc	0.10µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72E154K3□□H03□	X7T (EIA)	250Vdc	0.15µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72E224K4□□H03□	X7T (EIA)	250Vdc	0.22µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72E334K4□□H03□	X7T (EIA)	250Vdc	0.33µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72E474K5□□H03□	X7T (EIA)	250Vdc	0.47µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72E684K5□□H03□	X7T (EIA)	250Vdc	0.68µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72E105K5□□H03□	X7T (EIA)	250Vdc	1.0µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72E225MU□□H03□	X7T (EIA)	250Vdc	2.2µF±20%	7.7×12.5	4.5	5.0	B1	E1
RDED72W103K2□□H03□	X7T (EIA)	450Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W153K2□□H03□	X7T (EIA)	450Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W223K2□□H03□	X7T (EIA)	450Vdc	22000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W333K2□□H03□	X7T (EIA)	450Vdc	33000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W473K2□□H03□	X7T (EIA)	450Vdc	47000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W683K3□□H03□	X7T (EIA)	450Vdc	68000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72W104K3□□H03□	X7T (EIA)	450Vdc	0.10µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72W154K4□□H03□	X7T (EIA)	450Vdc	0.15µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72W224K5□□H03□	X7T (EIA)	450Vdc	0.22µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W334K5□□H03□	X7T (EIA)	450Vdc	0.33µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W474K5□□H03□	X7T (EIA)	450Vdc	0.47µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W564K5□□H03□	X7T (EIA)	450Vdc	0.56µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W105MU□□H03□	X7T (EIA)	450Vdc	1.0µF±20%	7.7×12.5	4.5	5.0	B1	E1
RDED72W125MU□□H03□	X7T (EIA)	450Vdc	1.2µF±20%	7.7×12.5	4.5	5.0	B1	E1
RDED72J103K2□□H03□	X7T (EIA)	630Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72J153K2□□H03□	X7T (EIA)	630Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72J223K3□□H03□	X7T (EIA)	630Vdc	22000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72J333K3□□H03□	X7T (EIA)	630Vdc	33000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72J473K3□□H03□	X7T (EIA)	630Vdc	47000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72J683K4□□H03□	X7T (EIA)	630Vdc	68000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72J104K5□□H03□	X7T (EIA)	630Vdc	0.10µF±10%	7.5×8.0	4.5	5.0	B1	E1
RDED72J154K5□□H03□	X7T (EIA)	630Vdc	0.15µF±10%	7.5×8.0	4.5	5.0	B1	E1

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Signification for the preceding page.								
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDED72J224K5□□H03□	X7T (EIA)	630Vdc	0.22µF±10%	7.5×8.0	4.5	5.0	B1	E1
RDED72J274K5□□H03□	X7T (EIA)	630Vdc	0.27µF±10%	7.5×8.0	4.5	5.0	B1	E1
RDED72J474MU□□H03□	X7T (EIA)	630Vdc	0.47µF±20%	7.7×13.0	4.5	5.0	B1	E1
RDED72J564MU□□H03□	X7T (EIA)	630Vdc	0.56µF±20%	7.7×13.0	4.5	5.0	B1	E1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

No.	No. Item		Specifications		Test Method	
1	Operating Ter Range	nperature	-55 to +125°C		-	
2	Appearance		No defects or abnormalities	Visual inspection		
3	B Dimension and Marking		See previous pages	Visual inspection, \	/ernier Caliper	
		Between Terminals	No defects or abnormalities		ld not be damaged when voltage between the terminations  current ≤ 50mA)  Test Voltage  200% of the rated voltage  150% of the rated voltage  120% of the rated voltage	
4	Dielectric Strength  Body Insulation		No defects or abnormalities	The capacitor is plated container with metadiameter so that each short-circuit, is kep 2mm from the balls the figure, and 200 DC voltage is impresed. between capa and metal balls. (Charge/Discharge≤ 50mA)	al balls of 1mm ach terminal, t approximately s as shown in % of the rated essed for 1 to 5 citor terminals	
5	Insulation Between Terminals		More than 10,000M $\Omega$ or 100M $\Omega$ $\cdot$ $\mu$ F, Whichever is smaller	The insulation resistance should be measured with DC500±50V (DC250±25V in case of rated voltage: DC250V,DC450V) at normal temperature and humidit and within 2 min. of charging.  (Charge/Discharge current ≤ 50mA)		
6	Capacitance		Within the specified tolerance	The capacitance/D.F. should be measured at the		
7	Dissipation Fa	actor (D.F.)	0.01 max.	frequency of 1±0.1kHz and a voltage of AC1±0.2V(r.m.s.).		
				The capacitance change should be measured after 5 min. at each specified temperature stage.		
	Capacitance			Step	Temperature (°C)	
8	Temperature		Within +22/-33%	1	25±2	
	Characteristic	s		2 3	55±3 	
				4	125±3	
				5	25±2	
9	Tensile Strength Terminal Strength		Termination not to be broken or loosened	As in the figure, fix the capacitor body, apply the gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the frapplied for 10±1 sec.		
		Bending Strength	Termination not to be broken or loosened	and then bent 90° a direction. Each wire	and be subjected to a force of 2.5N at the point of egress in one a is then returned to the original 10° in the opposite direction at the er 2 to 3 sec.	
		Appearance	No defects or abnormalities		ald be firmly soldered to the	
	Vibration	Capacitance	Within the specified tolerance		e and vibrated at a frequency range nm in total amplitude, with about a 1	
10	Resistance	D.F.	0.01 max.	minute rate of vibra	ation change from 10Hz to 55Hz and y for a total of 6 hrs., 2 hrs. each in 3	

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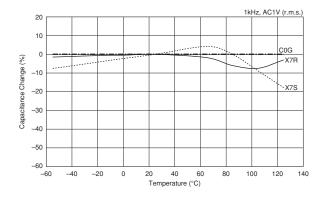
\( \) Continued from the preceding page.

No.	Iter	n	Specifications	Test Method				
11	1 Solderability of Leads		Lead wire should be soldered with uniform coating on the axial direction over 3/4 of the circumferential direction.	The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight proportion) and then into molten solder (JIS-Z-3282) for 2±0.5 sec. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body.  Temp. of solder: 245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu) 235±5°C H60A or H63A Eutectic Solder				
	Appearance		No defects or abnormalities	The leader				
	Resistance to	Capacitance Change	Within ±10%	2mm from th	The lead wire is immersed in the melted solder 1.5 to 2mm from the main body at 350±10°C for 3.5±0.5 sec. The specified items are measured after 24±2 hrs.			
12	Soldering Heat	Dielectric Strength (Between Terminals)	No defects		ent eat treatment at 150+ at room temperature fo			
		Appearance	No defects or abnormalities		or should be subjected	d to 5 temperature		
		Capacitance Change	Within ±7.5%	cycles.  Step	Temperature (°C)	Time (min)		
		D.F.	0.01 max.	1	-55±3	30±3		
13	Temperature	Insulation		23	Room Temp. 125±3	3 max. 30±3		
	Cycle	Resistance	More than 10,000M $\Omega$ or 100M $\Omega \cdot \mu F$ (Whichever is smaller)	4	Room Temp.	3 max.		
		Dielectric Strength (Between Terminals)	No defects or abnormalities	Pretreatment     Perform a heat treatment at 150+0/-10°C for 1 h     then let sit at room temperature for 24±2 hrs.				
		Appearance	No defects or abnormalities	Set the capacitor at 40±2°C and I		relative humidity of 90		
	Humidity	Capacitance Change	Within ±12.5%	to 95% for 500 $^{+24}_{0}$ hrs. Remove and set for 24±2 hrs. at room temperature, then measure.				
14	(Steady State)	D.F.	0.02 max.	Pretreatment				
	ŕ	Insulation Resistance	More than 1,000M $\Omega$ or 10M $\Omega$ · $\mu$ F (Whichever is smaller)	Perform a heat treatment at 150+0/-10°C for 1 hr then let sit at room temperature for 24±2 hrs.				
		Appearance	No defects or abnormalities	Apply the ra	ited voltage at 40±2°C	and relative humidity		
	Humidity	Capacitance Change	Within ±12.5%	of 90 to 95% 24±2 hrs. at	move and set for en measure.			
15	Load	D.F.	0.02 max.	(Onarge/Dia	scharge current ≦ 50m	u vj		
		Insulation Resistance	More than 1,000M $\Omega$ or 10M $\Omega$ · $\mu$ F (Whichever is smaller)	Perform a h	Pretreatment     Perform a heat treatment at 150+0/-10°C for 1 hr., then let sit at room temperature for 24±2 hrs.			
		Appearance	No defects or abnormalities		ge in Table for 1000 $\pm$			
		Capacitance Change	Within ±12.5%	24±2 hrs. at	perating temperature. t room temperature, th scharge current ≤ 50m	en measure.		
		D.F.	0.02 max.	`				
16	High 6 Temperature Load	emperature oad Insulation	More than 1,000M $\Omega$ or 10M $\Omega$ · $\mu F$ (Whichever is smaller)	Rated Voltage  DC250V  150% of the rated voltage  DC450V  130% of the rated voltage  DC630V  120% of the rated voltage		the rated voltage		
				Apply test vo	oltage for 1 hr., at test 24±2 hrs. at room tem			
		Appearance	No defects or abnormalities		or should be fully imm	-		
17	Solvent Resistance	Marking	Legible	reagent at 20 to 25°C for 30±5 sec. and then removed gently. Marking on the surface of the capacitor should immediately be visually examined.  Reagent:  • Isopropyl alcohol				

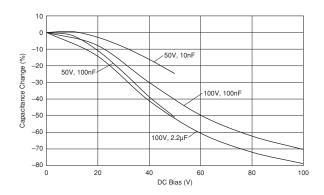


# RCE Series Characteristics Reference Data (Typical Example)

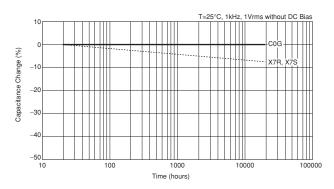
## ■ Capacitance - Temperature Characteristics



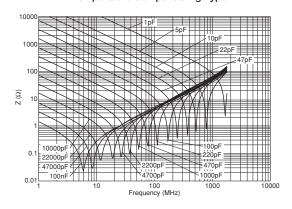
# ■ Capacitance - DC Voltage Characteristics



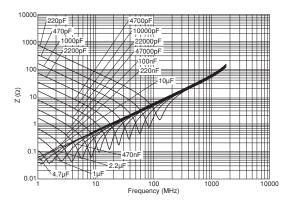
## ■ Capacitance Change - Aging



# ■ Impedance - Frequency Characteristics Temperature Compensating Type



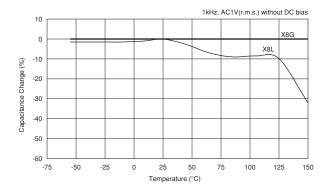
#### High Dielectric Constant Type



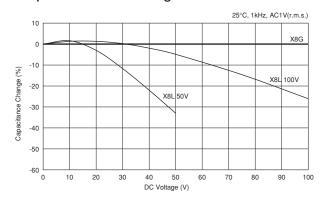


# RHE Series Characteristics Reference Data (Typical Example)

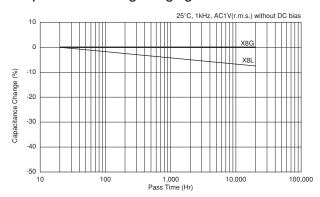
## ■ Capacitance - Temperature Characteristics



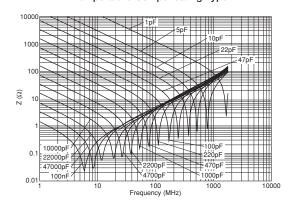
# ■ Capacitance - DC Voltage Characteristics



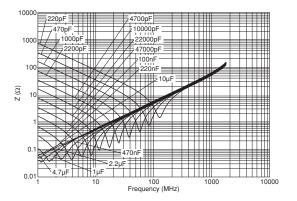
# ■ Capacitance Change - Aging



# ■ Impedance - Frequency Characteristics Temperature Compensating Type

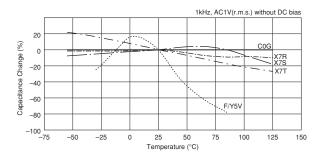


#### High Dielectric Constant Type



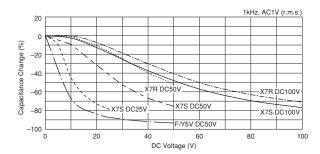
# RDE Series Characteristics Reference Data (Typical Example)

## ■ Capacitance - Temperature Characteristics

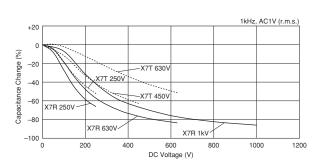


## ■ Capacitance - DC Voltage Characteristics

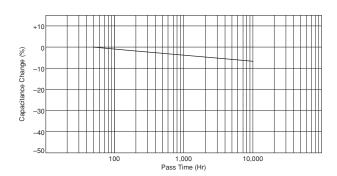
Rated Voltage: DC25V to DC100V



#### Rated Voltage: DC250V to DC1kV

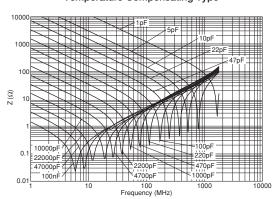


# ■ Capacitance Change - Aging

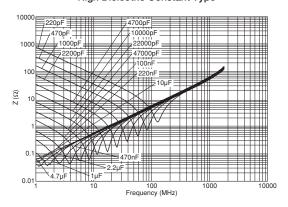


#### ■ Impedance - Frequency Characteristics

**Temperature Compensating Type** 



High Dielectric Constant Type





# **Packaging**

#### Packaging

Two types of packaging for monolithic ceramic capacitors are available.

#### 1. Bulk Packaging

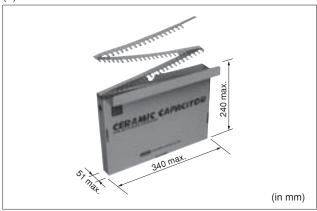
Minimum Quantity

Dimensions Code	Dimensions (LXW)	Minimum Quantity (pcs./Bag)	
0	3.6×3.5mm or 4.0×3.5mm or 5.0×3.5mm (Depends on Part Number List)		
1	4.0×3.5mm or 4.5×3.5mm or 5.0×3.5mm (Depends on Part Number List)		
2	5.5×4.0mm		
3	5.5×5.0mm	500	
4	7.5×5.5mm		
5	5 7.5×7.5mm (DC630V: 7.5×8.0mm)		
W	5.5×7.5mm or 6.0×8.0mm (Depends on Part Number List)		
U	7.7×12.5mm (DC630V: 7.7×13.0mm)	200	

Please order with an integral multiple of the minimum quantity above.

#### 2. Tape Carrier Packaging

#### (1) Dimensions of Ammo Pack



# (2) Minimum Quantity

Dimensions Code	Dimensions (LXW)	Minimum Quantity (pcs./Ammo Pack)
0	4.0×3.5mm or 5.0×3.5mm (Depends on Part Number List)	
1	4.0×3.5mm or 4.5×3.5mm or 5.0×3.5mm (Depends on Part Number List)	2000*1
2	2 5.5×4.0mm	
3	5.5×5.0mm	
5	7.5×7.5mm (DC630V: 7.5×8.0mm)	2000*2
6	10.0×10.0mm	
8	7.5×5.5mm	1500
W	5.5×7.5mm or 6.0×8.0mm (Depends on Part Number List)	
U	7.7×12.5mm (DC630V: 7.7×13.0mm)	1000*3

Please order with an integral multiple of the minimum quantity above.

\*1 1500 pcs. for RDER71H335K3 C03A, RDEC71E226K3 C03A, RDEC72A155K3 C03A, RDEC72A225K3 C03A (Two blank columns are filled with the lead style code.)

\*2 1500 pcs. for RDE Series

\*3 1500 pcs. for RDED72W105MUE1H03A, RDER72E105MUE1H03A, RDER72J474MUE1K03A

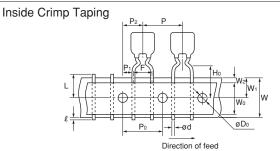
"Minimum Quantity" means the numbers of units of each delivery or order. The quantity should be an integral multiple of the "minimum quantity." (Please note that the actual delivery quantity in a package may change sometimes.)



# Packaging

Continued from the preceding page.

# ■ Taping Dimensions



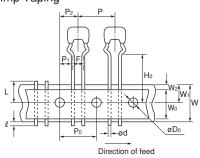
Dimensions and Lead style code	Dimensions (LXW)		
0M1	3.6×3.5mm or 4.0×3.5mm		
1M1	4.0×3.5mm or 4.5×3.5mm (Depends on Part Number List)		
2M1	5.5×4.0mm		
2M2	3.3/\ <del>4</del> .0IIIII		
3M1	5.5×5.0mm		
3M2	5.5\5.011111		
4M1	7 FVF F		
4M2	7.5×5.5mm		
WM1	5.5×7.5mm		

# Straight Taping

Dimensions and Lead style code	Dimensions (LXW)		
0DB	3.6×3.5mm		
1DB	4.0×3.5mm		
2DB	5.5×4.0mm		
3DB	5.5×5.0mm		
5E1	7.5×7.5mm		
5E2	(DC630V, DC1kV: 7.5×8.0mm)		
UE1	7.7×12.5mm (DC630V, DC1kV: 7.7×13.0mm)		

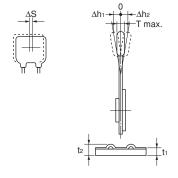
Direction of feed

# Outside Crimp Taping



Dimensions and Lead style code	Dimensions (LXW)
0S1	5.0×3.5mm
1S1	5.0×3.511111
2S1	5.5×4.0mm
2S2	5.5×4.011111
3S1	E EVE Onem
3S2	5.5×5.0mm

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Item	Code	Dimensions (mm)	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Pitch of Component	Р	12.7±1.0	
Length from Hole Center to Component Center  Length from Hole Center to Lead  Ength from Hole Center to Lead In Lead Lead  Ength from Hole Center to Lead In Lead Lead  Ength from Hole Center to Lead In Lead Lead  Ength from Hole Center to Lead In Lead Lead  Ength from Hole Center to Lead In L	Pitch of Sprocket Hole	P <sub>0</sub>	12.7±0.2	
Length from Hole Center to Component Center  Length from Hole Center to Lead  Ength from Hole Center to Lead In Lead Lead  Ength from Hole Center to Lead In Lead Lead  Ength from Hole Center to Lead In Lea		_	2.5 <sup>+0.4</sup> <sub>-0.2</sub> (DB) (S1) (S2)	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Lead Spacing	F	5.0 +0.6	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Length from Hole Center to	Б.	0.0514.0	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Component Center	P2	6.35±1.3	
Lead $ \begin{array}{c} 5.1\pm0.7 \text{ (DB) (S1) (S2)} \\ 254\pm1.5 \text{ Total length of components pitch X} \\ \hline \text{Body Dimension} & \text{Depends on Part Number List} \\ \hline \text{Deviation Along Tape, Left} \\ \text{or Right Defect} & \Delta S & \pm 2.0 \\ \hline \text{Carrier Tape Width} & W & 18.0\pm0.5 \\ \hline \text{Position of Sprocket Hole} & W1 & 9.0 \begin{array}{c} +0.5 \\ \hline \text{Deviation of Sprocket Hole} \\ \hline \text{Reference and Bottom Plane} \\ \hline \text{For Straight Lead Type} & H & 20\pm0.5 \text{ (B2)}, 17.5\pm0.5 \text{ (E1)}, 16\pm0.5 \text{ (D1)} \\ \hline \text{Diameter of Sprocket Hole} & D0 & 4.0\pm0.1 \\ \hline \text{Lead Diameter} & d & 0.5\pm0.05 \\ \hline \text{Total Tape Thickness} & t_1 & 0.6\pm0.3 \\ \hline \text{Total Thickness of Tape} \\ \hline \text{and Lead Wire} & t_2 & 1.5 \text{ max.} \\ \hline \text{Deviation Across Tape} & \Delta h1 \\ \hline \text{Defect} & L & 11.0 \begin{array}{c} +0.5 \\ \hline \text{Common Sprocket Wolth} \\ \hline \text{Outsion Length} & \ell & 0.5 \text{ max.} \\ \hline \text{Hold Down Tape Width} & W0 & 9.5 \text{ min.} \\ \hline \end{array}$	Longth from Holo Contor to	D,	3.85±0.7	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	, and the second	Г	5.1±0.7 (DB) (S1) (S2)	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Leau	254±1.5	5 Total length of components pitch $\times$ 20	
Or Right Defect         ΔS         ±2.0           Carrier Tape Width         W         18.0±0.5           Position of Sprocket Hole         W1         9.0 <sup>+0</sup> <sub>-0.5</sub> Lead Distance between         Ho         16.0±0.5 (M1) (S1)           Reference and Bottom Plane         20.0±0.5 (M2) (S2)           For Straight Lead Type         H         20±0.5 (E2),17.5±0.5 (E1),16±0.5 (E           Diameter of Sprocket Hole         Do         4.0±0.1           Lead Diameter         d         0.5±0.05           Total Tape Thickness         t1         0.6±0.3           Total Tape Thickness of Tape and Lead Wire         t2         1.5 max.           Body Thickness         T         Depends on Part Number Leaded Wire           Deviation Across Tape         Δh1	Body Dimension	De	pends on Part Number List	
or Right Defect   Carrier Tape Width   W	Deviation Along Tape, Left	AS	+2.0	
Position of Sprocket Hole         W1         9.0 + 0 - 0.5           Lead Distance between         H0         16.0 ± 0.5 (M1) (S1)           Reference and Bottom Plane         20.0 ± 0.5 (M2) (S2)           For Straight Lead Type         H         20±0.5 (E2),17.5±0.5 (E1),16±0.5 (E           Diameter of Sprocket Hole         Do         4.0 ± 0.1           Lead Diameter         d         0.5 ± 0.05           Total Tape Thickness         t1         0.6 ± 0.3           Total Thickness of Tape and Lead Wire         t2         1.5 max.           Body Thickness         T         Depends on Part Number Leaded Wiles           Deviation Across Tape         Δh1	or Right Defect		±2.0	
	Carrier Tape Width	W		
Reference and Bottom Plane         Ho         20.0±0.5 (M2) (S2)           For Straight Lead Type         H         20±0.5 (E2),17.5±0.5 (E1),16±0.5 (E           Diameter of Sprocket Hole         Do         4.0±0.1           Lead Diameter         d         0.5±0.05           Total Tape Thickness         t1         0.6±0.3           Total Thickness of Tape and Lead Wire         t2         1.5 max.           Body Thickness         T         Depends on Part Number L           Deviation Across Tape         Δh1         1.0 max.           Ah2         (Dimensions code W, U: 2.0 max.)           Portion to Cut in Case of Defect         L         11.0 <sup>+0</sup> / <sub>−1.0</sub> Protrusion Length         ℓ         0.5 max.           Hold Down Tape Width         Wo         9.5 min.	Position of Sprocket Hole	W <sub>1</sub>	9.0 <sup>+0</sup> 9.0 <sub>-0.5</sub>	
Reference and Bottom Plane         20.0±0.5 (M2) (S2)           For Straight Lead Type         H         20±0.5 (E2),17.5±0.5 (E1),16±0.5 (D           Diameter of Sprocket Hole         Do         4.0±0.1           Lead Diameter         d         0.5±0.05           Total Tape Thickness         t1         0.6±0.3           Total Thickness of Tape and Lead Wire         t2         1.5 max.           Body Thickness         T         Depends on Part Number L           Deviation Across Tape         Δh1	Lead Distance between	Що	16.0±0.5 (M1) (S1)	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Reference and Bottom Plane	П0	20.0±0.5 (M2) (S2)	
	For Straight Lead Type	Н	20±0.5 (E2),17.5±0.5 (E1),16±0.5 (DB)	
	Diameter of Sprocket Hole	D <sub>0</sub>	4.0±0.1	
	Lead Diameter	d	0.5±0.05	
and Lead Wire  Body Thickness  T Depends on Part Number L  Deviation Across Tape $ \begin{array}{c cccc} \Delta h 1 & 1.0 \text{ max.} \\ \Delta h 2 & (\text{Dimensions code W, U: 2.0 max} \end{array} $ Portion to Cut in Case of Defect  Protrusion Length $ \ell & 0.5 \text{ max.} $ Hold Down Tape Width  Wo 9.5 min.	Total Tape Thickness	t1	0.6±0.3	
and Lead Wire  Body Thickness  T Depends on Part Number L  Deviation Across Tape $ \begin{array}{c cccc} \Delta h1 & 1.0 \text{ max.} \\ \Delta h2 & (Dimensions code W, U: 2.0 \text{ ma}  \end{array} $ Portion to Cut in Case of Defect  Protrusion Length $ \ell & 0.5 \text{ max.} \\ Hold Down Tape Width $ Wo 9.5 min.	Total Thickness of Tape	to	1.5 may	
	and Lead Wire	l2	1.5 max.	
Portion to Cut in Case of Defect $ \begin{array}{c cccc} Deviation Across Tape & \Delta h2 & (Dimensions code W, U: 2.0 ma) \\ L & 11.0 \stackrel{+0}{-}1.0 \\ \hline Protrusion Length & \ell & 0.5 max. \\ \hline Hold Down Tape Width & Wo & 9.5 min. \\ \end{array} $	Body Thickness	Т	Depends on Part Number List	
Portion to Cut in Case of Defect  Protrusion Length  Hold Down Tape Width  Days (Dimensions code W, U: 2.0 may 11.0 $^{+0}_{-1.0}$ )  0.5 max.	Doviation Across Tano	∆h1	1.0 max.	
DefectL $11.0 \pm 1.0$ Protrusion Length $\ell$ $0.5 \text{ max}$ .Hold Down Tape WidthWo $9.5 \text{ min}$ .	Deviation Across Tape	∆h2	(Dimensions code W, U: 2.0 max.)	
Defect         θ           Protrusion Length         ℓ         0.5 max.           Hold Down Tape Width         Wo         9.5 min.	Portion to Cut in Case of		11 0 +0	
Hold Down Tape Width Wo 9.5 min.	Defect	_	11.0 —1.0	
	Protrusion Length	l	0.5 max.	
Hold Down Tape Position W <sub>2</sub> 1.5±1.5	Hold Down Tape Width	Wo	9.5 min.	
14.1	Hold Down Tape Position	W <sub>2</sub>	1.5±1.5	
Coating Extension Depends on Dimensions	Coating Extension	Depends on Dimensions		



# **1** Caution

## ■ **①**Caution (Storage and Operating Condition)

Operating and storage environment

The insulating coating of capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. Also avoid exposure to moisture. Before cleaning, bonding or molding this product, verify that these processes do not affect product quality by testing the performance of a cleaned, bonded or molded product in the intended

equipment. Store the capacitors where the temperature and relative humidity do not exceed 5 to 40 degrees centigrade and 20 to 70%.

Use capacitors within 6 months after delivery.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

# ■ ①Caution (Rating)

#### 1. Operating Voltage

When DC-rated capacitors are to be used in AC or ripple current circuits, be sure to maintain the Vp-p value of the applied voltage or the V0-p which contains DC bias within the rated voltage range.

When the voltage is applied to the circuit, starting or stopping may generate irregular voltage for a transit period because of resonance or switching. Be sure to use a capacitor with a rated voltage range that includes these irregular voltages. When DC-rated capacitors are to be used in input circuits from commercial power source (AC filter), be sure to use Safety Recognized Capacitors because various regulations on withstand voltage or impulse withstand established for all equipment should be taken into consideration.

Voltage	DC Voltage	DC+AC Voltage	AC Voltage	Pulse Voltage (1)	Pulse Voltage (2)
Positional Measurement	Vo-p	Vo-p	Vp-p	Vp-p	Vp-p

#### 2. Operating Temperature and Self-generated Heat

Keep the surface temperature of a capacitor below the upper limit of its rated operating temperature range. Be sure to take into account the heat generated by the capacitor itself. When the capacitor is used in a high-frequency current, pulse current or similar current, it may have self-generated heat due to dielectric loss. In the case of "High Dielectric Constant Type Capacitors," applied voltage load should be such that self-generated heat is within 20 °C under the condition where the capacitor is subjected at an atmosphere temperature of 25 °C. Please contact us if self-generated heat occurs with "Temperature Compensating Type Capacitors". When measuring, use a thermocouple of small thermal capacity -K of ø0.1mm under conditions where the capacitor is not affected by radiant heat from other components or wind from surroundings. Excessive heat may lead to deterioration of the capacitor's characteristics and reliability. Never attempt to perform measurement with the cooling fan running. Otherwise, accurate measurement cannot be ensured.

#### 3. Fail-Safe

Be sure to provide an appropriate fail-safe function on your product to prevent a second damage that may be caused by the abnormal function or the failure of our product.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.



**⚠** Caution

## ■ ①Caution (Soldering and Mounting)

Vibration and impact
 Do not expose a capacitor or its leads to excessive shock or vibration during use.

2. Soldering

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specification of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

Bonding, resin molding and coating
 In case of bonding, molding or coating this product, verify that these processes do not affect the quality of the capacitor by testing the performance of the bonded, molded or coated product in the intended equipment.

In case the amount of application, dryness/ hardening conditions of adhesives and molding resins containing organic solvents (ethyl acetate, methyl ethyl ketone, toluene, etc.) are unsuitable, the outer coating resin of a capacitor may be damaged by the organic solvents and may result, worst case, in a short circuit.

The variation in thickness of adhesive or molding resin or coating may cause an outer coating resin cracking and/or ceramic element cracking of a capacitor in a temperature cycling.

4. Treatment after bonding, resin molding and coating When the outer coating is hot (over 100 degrees centigrade) after soldering, it becomes soft and fragile, so please be careful not to give it mechanical stress.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

#### ■ **(**Caution (Handling)

Vibration and impact

Do not expose a capacitor or its leads to excessive shock or vibration during use.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.



# **Notice**

## ■ Notice (Rating)

Capacitance change of capacitor
In case of F/X7R/X7S/X7T/X8L/Y5V char.
Capacitors have an aging characteristic, whereby the capacitor continually decreases its capacitance slightly if the capacitor is left on for a long time. Moreover, capacitance might change greatly depending on the surrounding temperature or an applied voltage.

#### ■ Notice (Soldering and Mounting)

#### 1. Cleaning (ultrasonic cleaning)

To perform ultrasonic cleaning, observe the following conditions.

Rinse bath capacity: Output of 20 watts per liter or less.

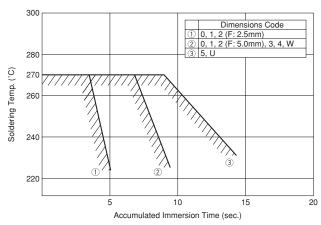
Rinsing time: 5 min. maximum.

Do not vibrate the PCB/PWB directly.

Excessive ultrasonic cleaning may lead to fatigue destruction of the lead wires.

## 2. Soldering and Mounting

(1) Allowable Conditions for Soldering Temperature and Time



Perform soldering within tolerance range (shaded portion).

## (2) Insertion of the Lead Wire

- When soldering, insert the lead wire into the PCB without mechanically stressing the lead wire.
- Insert the lead wire into the PCB with a distance appropriate to the lead space.



#### **⚠Note:**

Export Control

<For customers outside Japan>

No Murata products should be used or sold, through any channels, for use in the design, development, production, utilization, maintenance or operation of, or otherwise contribution to (1) any weapons (Weapons of Mass Destruction [nuclear, chemical or biological weapons or missiles] or conventional weapons) or (2) goods or systems specially designed or intended for military end-use or utilization by military end-users.

For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.

- 2. Please contact our sales representatives or product engineers before using the products in this catalog for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this catalog.
  - Aircraft equipment
     Undersea equipment
- ② Aerospace equipment④ Power plant equipment
- Medical equipment
- (6) Transportation equipment (vehicles, trains, ships, etc.)
- Traffic signal equipment
- Disaster prevention / crime prevention equipment
- 3. Product specifications in this catalog are as of January 2014. They are subject to change or our products in it may be discontinued without advance notice.

  Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.
- 4. Please read rating and 🛆 CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
- 5. This catalog has only typical specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.
- 6. Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our catalogs. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.
- 7. No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.



http://www.murata.com/