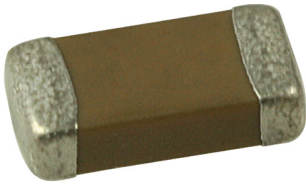


General Purpose Ceramic Capacitors (C Series)



Features:

- RoHS Compliant and Halogen Free
- Capacitance range: 0.1pF to 220uF
- Voltage range: 4V to 100V
- Terminations: 100% matte Tin (Sn), Palladium (Pd-Ag), Gold (Au) and Lead (Pb)
- Very low ESR in X7R/X5R (<10mΩ typical)

Part Number Structure

C Series	0805 Size	COG Temperature Characteristic (Dielectric)	500 Rated Voltage	101 Capacitance (picofarads)	J Tolerance	N Termination	P Packaging	Optional Thickness Identifier
01005	0201	COG	1st two digits are significant followed by number of zeroes.	1st two digits are significant, followed by number of zeroes. e.g. : 101 = 100pF	* B = ± 0.1pF * C = ± 0.25pF * D = ± 0.5pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% N = ± 30% Z = +80 - 20% * For values below 10pF only.	N = 100% matte Tin (Sn) over Nickel * P = Palladium Silver * G = Gold over Nickel Pb = 90% Tin (Sn)/10% Lead (Pb) * Pd/Ag & Gold terminations have limited values & sizes available.	D = Paper Tape (10" Reel) E = Embossed Tape (7" Reel) P = Paper Tape (7" Reel) R = Paper Tape (13" Reel) U = Embossed Tape (13" Reel)	Leave blank for standard thickness. Designate "-" for Min. "*" for Max. followed by Thickness Code e.g. :-E (min. thickness of .026") *E (max. thickness of .026")
0402	0603	X7R	4R0 = 4.0 VDCW	6R3 = 6.3 VDCW				
0805	1206	X7S	6R3 = 6.3 VDCW	100 = 10 VDCW				
1210	1812	X5V	160 = 16 VDCW	101 = 100pF				
2221	2220	Z5U	250 = 25 VDCW	R denotes decimal				
			500 = 50 VDCW	6R8 = 6.8pF				
			630 = 63 VDCW					
			101 = 100 VDCW					

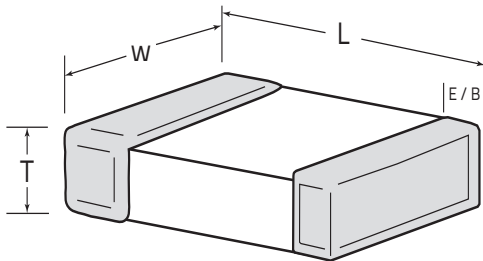
Example P/N: C0805COG500-101JNP

Optional Thickness Identifier Codes:

CODE:	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	6
DIMENSION:	.015	.020	.026	.030	.035	.040	.045	.050	.055	.060	.065	.070	.075	.080	.085	.090	.095	.100	.105	.110	.023

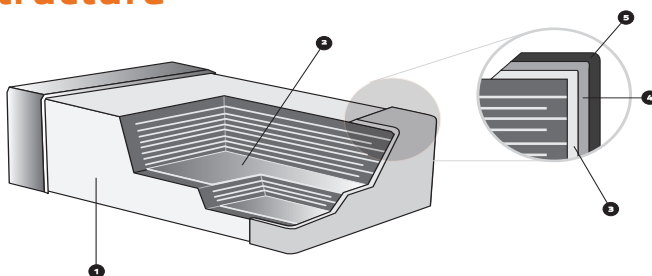
Dimensions

Unit: inches (mm)



Size	L	W	T	E/B
01005	0.016 ± 0.0008 (0.4 ± 0.02)	0.008 ± 0.0008 (0.2 ± 0.02)	See Specific Value	0.002 (min.) (0.05)
0201	0.024 ± 0.002 (0.6 ± 0.05)	0.012 ± 0.002 (0.3 ± 0.05)	See Specific Value	0.002 (min.) (0.20)
0402	0.040 ± 0.002 (1.0 ± 0.05)	0.020 ± 0.002 (0.5 ± 0.05)	See Specific Value	0.004 (min.) (0.10)
0603	0.063 ± 0.006 (1.6 ± 0.15)	0.031 ± 0.0046 (0.8 ± 0.15)	See Specific Value	0.008 (min.) (0.20)
0805	0.08 ± 0.008 (2.0 ± 0.20)	0.050 ± 0.008 (1.25 ± 0.20)	See Specific Value	0.020 ± 0.010 (0.508 ± 0.254)
1206	0.126 ± 0.008 (3.2 ± 0.20)	0.063 ± 0.008 (1.6 ± 0.20)	See Specific Value	0.020 ± 0.010 (0.508 ± 0.254)
1210	0.126 ± 0.008 (3.2 ± 0.20)	0.098 ± 0.008 (2.50 ± 0.20)	See Specific Value	0.020 ± 0.010 (0.508 ± 0.254)
1812	0.177 ± 0.012 (4.495 ± 0.30)	0.126 ± 0.012 (3.20 ± 0.30)	See Specific Value	0.024 ± 0.015 (0.6096 ± 0.381)
2220	0.225 ± 0.016 (5.715 ± 0.41)	0.200 ± 0.006 (5.08 ± 0.41)	See Specific Value	0.025 ± 0.015 (0.635 ± 0.381)

Structure

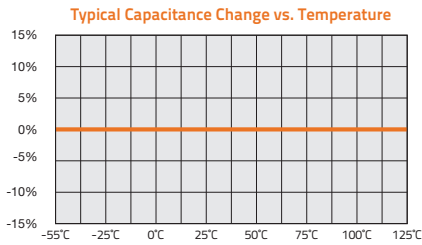


1	Ceramic Body (dielectric)	4	Nickel Plating
2	Inner Electrode	5	Tin Plating
3	Inner Termination		

General Purpose Ceramic Capacitors (C Series)

Electrical Specifications

NPO/COG



Operating Temperature Range:
-55°C to +125°C

Temperature Coefficient:
0 ±30PPM/°C

Temperature Voltage Coefficient:
0 ±30PPM/°C

Insulation Resistance:
>1000 Ω-F or 10 GΩ, for values ≤ 0.047μF
(whichever is less at 25°C, VDCV).
For Capacitance values > 0.047μF, the 500 Ω-F
rule applies. (The IR at 125°C is 10% of the
value at 25°C)

Ageing:

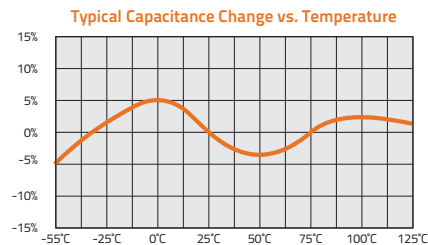
None

Withstanding Voltage:
>2.5 times VDCV

Capacitance Tolerance:
B,C,D,F,G,J,K

Dissipation Factor:
0.1% max

X7R



Operating Temperature Range:
-55°C to +125°C

Temperature Coefficient:
0 ±15%Δ°C MAX.

Temperature Voltage Coefficient:
X7R not applicable

Insulation Resistance:
>100 Ω-F or 10 GΩ, whichever is less
at 25°C, VDCV. (The IR at 125°C is 10%
of the value at 25°C)

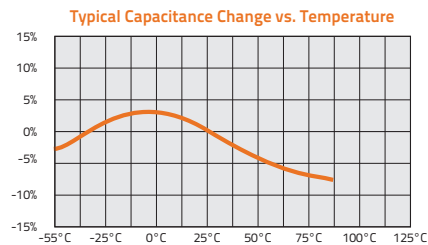
Ageing:
2.5% per decade hour, typical

Withstanding Voltage:
>2.5 times VDCV

Capacitance Tolerance:
J,K,M

Rated Voltage	D.F.	Exception of D.F.	
≥50V	≤2.5%	≤3%	0201 (50V); 0603≥0.047μF 0805≥0.22μF; 1206≥0.47μF
		≤5%	0603≥1μF; 0805≥1μF; 1206≥4.7μF; 1210≥4.7μF
25V	≤2.5%	≤5%	0201≥0.01μF; 0805≥1μF; 1210≥4.7μF
		≤10%	0402≥0.10μF; 0603≥0.33μF; 0805≥2.2μF 1206≥4.7μF; 1210≥22μF
16V	≤3.5%	≤5%	0201≥0.01μF; 0402≥0.033μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF
		≤10%	0402≥0.47μF; 0603≥0.68μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF
10V	≤5%	≤10%	0402≥0.33μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF
6.3V	≤10%		

X5R



Operating Temperature Range:
-55°C to +85°C

Temperature Coefficient:
0 ±15%Δ°C MAX.

Temperature Voltage Coefficient:
X5R not applicable

Insulation Resistance:
>100 Ω-F or 10 GΩ, whichever is less
at 25°C, VDCV. (The IR at 125°C is 10%
of the value at 25°C)

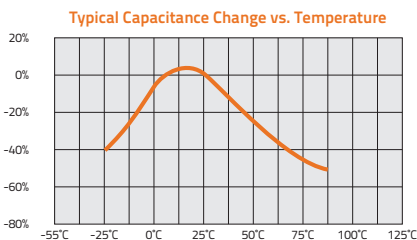
Ageing:
2.5% per decade hour, typical

Withstanding Voltage:
>2.5 times VDCV

Capacitance Tolerance:
K,M

Rated Voltage	D.F.	Exception of D.F.	
≥50V	≤2.5%	≤3%	0201 (50V); 0603≥0.047μF 0805≥0.22μF; 1206≥0.47μF
		≤5%	0603≥1μF; 0805≥1μF; 1206≥4.7μF; 1210≥4.7μF
25V	≤2.5%	≤5%	0201≥0.01μF; 0805≥1μF; 1210≥4.7μF
		≤10%	0402≥0.10μF; 0603≥0.33μF; 0805≥2.2μF 1206≥4.7μF; 1210≥22μF
16V	≤3.5%	≤5%	0201≥0.01μF; 0402≥0.033μF; 0805≥0.68μF; 1206≥2.2μF; 1210≥4.7μF
		≤10%	0402≥0.47μF; 0603≥0.68μF; 0805≥2.2μF; 1206≥4.7μF; 1210≥22μF
10V	≤5%	≤10%	0402≥0.33μF; 0603≥0.33μF; 0805≥2.2μF; 1206≥2.2μF; 1210≥22μF
6.3V	≤10%		

Z5U



Operating Temperature Range:
+10°C to +85°C

Temperature Coefficient:
+22% - 56%Δ°C MAX.

Insulation Resistance:
>100 Ω-F or 10 GΩ, whichever is less
at 25°C, VDCV. (The IR at 125°C is 10%
of the value at 25°C)

Ageing:
5% per decade hour, typical

Withstanding Voltage:
>2.5 times VDCV

Capacitance Tolerance:
M,Z

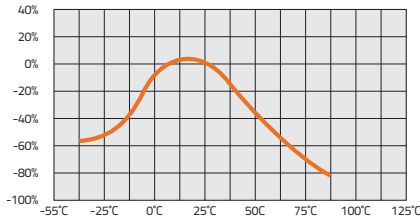
Rated Voltage	D.F.	Exception of D.F.	
≥50V	≤5%	≤9%	0603≥0.1μF; 0805≥0.47μF; 1206≥4.7μF;
25V	≤5%	≤9%	0402≥0.047μF; 0603≥0.1μF; 0805≥0.33μF; 1206≥1μF; 1210≥4.7μF
16V	≤9%	≤12.5%	0603≥2.2μF; 0805≥3.3μF; 1206≥10μF; 1210≥22μF; 1812≥47μF
10V	≤12.5%	≤16%	0603≥2.2μF; 0805≥3.3μF; 1206≥4.7μF; 1210≥10μF; 1812≥47μF
6.3V	≤16%		

General Purpose Ceramic Capacitors (C Series)

Electrical Specifications

Y5V

Typical Capacitance Change vs. Temperature



Operating Temperature Range:

-30°C to +85°C

Temperature Coefficient:

+22% - 82%Δ°C MAX.

Insulation Resistance:

>100 Ω-F or 10 GΩ, whichever is less at 25°C, WDCV. (The IR at 125°C is 10% of the value at 25°C)

Ageing:

7% per decade hour, typical

Withstanding Voltage:

>2.5 times VDCW

Capacitance Tolerance:

M,Z

Rated Voltage	D.F.	Exception of D.F.	
≥50V	≤5%	≤9%	0603±0.1uF; 0805±0.47uF; 1206±4.7uF;
25V	≤5%	≤9%	0402±0.047uF; 0603±0.1uF; 0805±0.33uF; 1206±1uF; 1210±4.7uF
16V	≤9%	≤12.5%	0603±2.2uF; 0805±3.3uF; 1206±10uF; 1210±22uF; 1812±47uF
10V	≤12.5%	≤16%	0603±2.2uF; 0805±3.3uF; 1206±4.7uF; 1210±10uF; 1812±47uF
6.3V	≤16%		

Test Parameters

Test parameters for Multilayer Ceramic Capacitors - X7R, X5R, X6S, X7S, Z5U and Y5V: 1KHz ± 100Hz at 1.0 ± 0.2 Vrms < 10uF (10 V min.)

1KHz ± 100Hz at 1.0 ± 0.1 Vrms < 10uF (6.3V max.)

120Hz ± 24Hz at 1.0 ± 0.1 Vrms ≥ 10uF

Test parameters for Multilayer Ceramic Capacitors - NPO/COG:

1MHz ± 100KHz at 1.0 ± 0.2 Vrms ≤ 1000pF, 25°C

1KHz ± 100Hz at 1.0 ± 0.2 Vrms > 1000pF, 25°C

Note: To ensure proper capacitance readings, the voltage level must be held constant. The HP4284 and Agilent E4980 has a "ALC" (Automatic Level Control) function and should be switched to the "ON" position for accurate capacitance readings.

Voltage and Capacitance Range

COG (NPO) Dielectric

Values that are typically available.

(All measurements in inches)

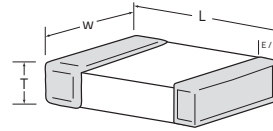
Size		01005 (± 0.0008)		0201 (± 0.002)		0402 (± 0.004)		0504 (± 0.008)		0603 (± 0.006)		0805 (± 0.008)		1206 (± 0.008)		1210 (± 0.008)		1812 (± 0.012)	
T (max)		0.008		0.012		0.025		0.040		0.033		0.055		0.070		0.075		0.085	
Min E/B		0.002		0.002		0.004		0.005		0.008		0.020 ± .010		0.020 ± .010		0.020 ± .010		0.024 ± .015	
VDCW (MAX)		6.3V	16V	25V	50V	25V	50V	25V	50V	100V	50V	100V	50V	100V	25V	50V	100V	50V	100V
CAPACITANCE CODE CAPACITANCE VALUE	OR1	0.1pF																	
	OR2	0.2pF																	
	OR3	0.3pF																	
	OR4	0.4pF																	
	OR5	0.5pF																	
	1R0	1.0pF																	
	1R2	1.2																	
	1R5	1.5																	
	1R8	1.8																	
	2R2	2.2																	
	2R7	2.7																	
	3R3	3.3																	
	3R9	3.9																	
	4R7	4.7																	
	5R0	5.0																	
	5R6	5.6																	
	6R8	6.8																	
	8R2	8.2																	
	100	10pF																	
	120	12																	
	150	15																	
	180	18																	
	220	22																	

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

X7R Dielectric



Values that are typically available.

(All measurements in inches)

Size	01005 (± 0.0008)	0201 (± 0.002)	0402 (± 0.004)				0504 (± 0.008)				0603 (± 0.006)				0805 (± 0.008)			
L	0.016	0.024	0.040				0.053				0.063				0.080			
W	0.008	0.012	0.020				0.040				0.032				0.050			
T (max)	0.008	0.012	0.025				0.040				0.038				0.058			
Min E/B	0.002	0.002	0.004				0.005				0.008				0.020 ± .010			
VDCW (MAX)	6.3V	10V	6.3V	10V	16V	25V	16V	25V	50V	100V	25V	50V	100V	10V	16V	25V	50V	100V
CAPACITANCE CODE <----->	101	100pF																
	121	120																
	151	150																
	181	180																
	221	220																
	271	270																
	331	330																
	391	390																
	471	470																
	561	560																
	681	680																
	821	820																
	102	1000pF																
	122	1200																
	152	1500																
	182	1800																
	222	2200																
	272	2700																
	332	3300																
	392	3900																
	472	4700																
	562	5600																
	682	6800																
	822	8200																
CAPACITANCE VALUE <----->	103	.01uF																
	123	.012																
	153	.015																
	183	.018																
	223	.022																
	273	.027																
	333	.033																

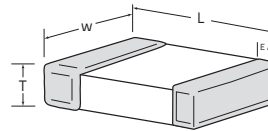
Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

All components manufactured with the X7R dielectric are also available as an X5R dielectric.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

X7R Dielectric



Values that are typically available.

(All measurements in inches)

Size			0201 (± 0.002)			0402 (± 0.004)				0603 (± 0.006)						0805 (± 0.008)							
L			0.024			0.040				0.063						0.080							
W			0.012			0.020				0.032						0.050							
T (max) *			0.012			0.025				0.038						0.058							
Min E/B			0.002			0.004				0.008						0.020 ± .010							
VDCW (MAX)			4V	6.3V	10V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	
CAPACITANCE CODE	393	CAPACITANCE VALUE	.039																				
	473		.047																				
	563		.056																				
	683		.068																				
	823		.082																				
	104		.100uF																				
	124		.120																				
	154		.150																				
	184		.180																				
	224		.220																				
	274		.270																				
	334		.330																				
	394		.390																				
	474		.470																				
	564		.560																				
	684		.680																				
	824		.820																				
	105		1.00uF																				
	125		1.20																				
	155		1.50																				
	185		1.80																				
	225		2.20																				
	335		3.30																				
	475		4.70																				
	685		6.80																				
106	10.0uF																						
156	15.0uF																						
226	22.0uF																						
476	47.0uF																						
107	100.0uF																						

* For values above 1uF, thickness may be greater than specified above.

T(max): 0603 – 0.040"
0805 – 0.060"

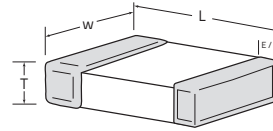
Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

All components manufactured with the X7R dielectric are also available as an X5R dielectric.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

X7R Dielectric



Values that are typically available.

(All measurements in inches)

Size		1206 (± 0.008)					1210 (±0.008)					1812 (±0.012)						2220 / 2221 °(±0.016)				
L		0.126					0.126					0.177						0.225 / .225				
W		0.063					0.098					0.126						0.200 / .210				
T (max)*		0.070					0.125					0.085						0.108 / .108				
Min E/B		0.020 ± .010					0.020 ± .010					.024 ± .015						00.025 ± .015				
VDCW (MAX)		10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	16V	25V	50V	100V	
CAPACITANCE CODE 102 122 152 182 222 272 332 392 472 562 682 822 103 123 153 183 223 273 333 393 473 563 683 823 104 124 154 184 224 274 334	CAPACITANCE VALUE 1000pF 1200 1500 1800 2200 2700 3300 3900 4700 5600 6800 8200 .01uF .012 .015 .018 .022 .027 .033 .039 .047 .056 .068 .082 .100uF .120 .150 .180 .220 .270 .330	1000pF																				
		1200																				
		1500																				
		1800																				
		2200																				
		2700																				
		3300																				
		3900																				
		4700																				
		5600																				
		6800																				
		8200																				
		.01uF																				
		.012																				
		.015																				
		.018																				
		.022																				
		.027																				
		.033																				
		.039																				
		.047																				
		.056																				
		.068																				
		.082																				
		.100uF																				
		.120																				
		.150																				
		.180																				
		.220																				
		.270																				
		.330																				

* For values above 1uF, thickness may be greater than specified above.

T(max): 1206 – 0.075" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

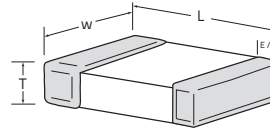
Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

All components manufactured with the X7R dielectric are also available as an X5R dielectric.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

X7R Dielectric



Values that are typically available.

(All measurements in inches)

Size	1206 (± 0.008)						1210 (±0.008)						1812 (±0.012)						2220 / 2221 (±0.016)			
L	0.126						0.126						0.177						0.225 / .225			
W	0.063						0.098						0.126						0.200 / .210			
T (max)*	0.070						0.125						0.095						0.108 / .108			
Min E/B	0.020 ± .010						0.020 ± .010						0.024 ± .015						0.025 ± .015			
VDCW (MAX)	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	16V	25V	50V	100V
394	.390																					
474	.470																					
564	.560																					
684	.680																					
824	.820																					
105	1.00uF																					
125	1.20																					
155	1.50																					
185	1.80																					
225	2.20																					
335	3.30																					
475	4.70																					
685	6.80																					
106	10.0uF																					
156	15.0uF																		X7S	X7S	X7S	
226	22.0uF																					
476	47.0uF																					
107	100.0uF																					

* For values above 1uF, thickness may be greater than specified above.

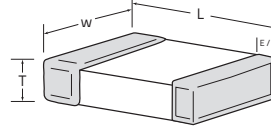
T(max): 1206 – 0.075" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.
All components manufactured with the X7R dielectric are also available as an X5R dielectric.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

X5R Dielectric



Values that are typically available.

(All measurements in inches)

Size	01005 (± 0.0008)	0201 (± 0.002)	0402 (± 0.004)	0603 (± 0.006)	0805 (± 0.008)	1206 (± 0.008)	1210 (± 0.016)	1812 (± 0.016)
L	0.016	0.024	0.040	0.063	0.080	0.126	0.126	0.177
W	0.008	0.012	0.020	0.032	0.050	0.063	0.098	0.126
T (max)	0.008	0.012	0.025	0.040	0.060	0.072	0.125	0.130
Min. E/B	0.002	0.002	0.004	0.008	0.020 ± .010	0.020 ± .010	0.020 ± .010	0.024 ± .015
VDCW (MAX)	6.3V 10V	4V 6.3V 10V 16V 25V	4V 6.3V 10V 16V 25V 50V	6.3V 10V 16V 25V 35V 50V	6.3V 10V 16V 25V 50V	6.3V 10V 16V 25V 50V	6.3V 10V 16V 25V 16V 25V	16V 25V 16V 25V
102	1000pF							
122	1200							
152	1500							
182	1800							
222	2200							
272	2700							
332	3300							
392	3900							
472	4700							
562	5600							
682	6800							
822	8200							
103	.01uF							
153	.015							
223	.022							
333	.033							
393	.039							
473	.047							
104	0.10uF							
154	.150							
224	.220							
334	.330							
474	.470							
684	.680							
105	1.00uF							
125	1.20							
155	1.50							
185	1.80							
225	2.20							
335	3.30							

For values above 1uF, thickness may be greater than specified above.

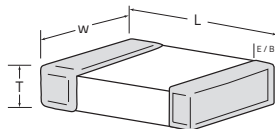
T(max): 1206 – 0.075" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.
All components manufactured with the X7R dielectric are also available as an X5R dielectric.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

X5R Dielectric (0402 - 1206)



Values that are typically available.

(All measurements in inches)

Size			0201 (± 0.002)			0402 (± 0.008)			0603 (± 0.006)					0805 (± 0.008)					1206 (± 0.008)						
L			0.024			0.040			0.063					0.080					0.126						
W			0.012			0.020			0.032					0.050					0.063						
T (max)			0.0216			0.0335			0.040					0.060					0.072						
Min E/B			0.002			0.004			0.008					0.020 ± .010					0.020 ± .010						
VDCW (MAX)			4V	6.3V	10V	4V	6.3V	10V	16V	4V	6.3V	10V	16V	25V	4V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
CAPACITANCE CODE CAPACITANCE VALUE	395	3.90uF																							
	475	4.70uF																							
	685	6.80uF																							
	106	10.0uF																							
	156	15.0uF																							
	226	22.0uF																							
	476	47.0uF																							
	107	100.0uF																							
	157	150.0uF																							
	227	220.0uF																							

X5R Dielectric (1210 - 2221)

(All measurements in inches)

Size		1210 (±0.016)					1812 (±0.016)					2220 / 2221 (±0.016)				
L		0.126					0.177					0.225 / .225				
W		0.098					0.126					0.200 / .210				
T (max)		0.125					0.130					0.135				
Min E/B		0.020 ± .010					0.024 ± .015					0.025 ± .015				
VDCW (MAX)		6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	6.3V	10V	25V	50V		
CAPACITANCE CODE CAPACITANCE VALUE	395	3.90uF														
	475	4.70uF														
	685	6.80uF														
	106	10.0uF														
	156	15.0uF														
	226	22.0uF														
	476	47.0uF														
	107	100.0uF														
	157	150.0uF														
	227	220.0uF														

For values above 1uF, thickness may be greater than specified above.

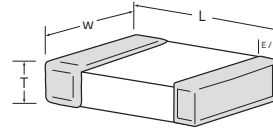
T(max): 1206 – 0.075" 1812 – 0.130"
1210 – 0.125" 2220 – 0.135"

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.
All components manufactured with the X7R dielectric are also available as an X5R dielectric.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

Z5U Dielectric



Values that are typically available.

(All measurements in inches)

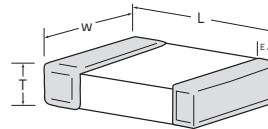
Size	0504 (± 0.008)		0603 (± 0.006)		0805 (± 0.008)		1206 (± 0.008)		1210 (± 0.016)		1812 (± 0.016)		2220 / 2221 (± 0.016)	
L	0.050		0.063		0.080		0.126		0.126		0.177		0.225 / .225	
W	0.040		0.032		0.050		0.063		0.098		0.126		0.200 / .210	
T (max)	0.040		0.038		0.058		0.070		0.075		0.085		0.108 / .108	
Min E/B	0.005		0.008		0.020 ± .010		0.020 ± .010		0.020 ± .010		0.024 ± .015		0.025 ± .015	
VDCW (MAX)	25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V	
CAPACITANCE CODE 102 122 152 182 222 272 332 392 472 562 682 822 103 123 153 183 223 273 333 393 473 563 683 823 104 124 154 184 224 274 334	CAPACITANCE VALUE 1000pF 1200 1500 1800 2200 2700 3300 3900 4700 5600 6800 8200 .01uF .012 .015 .018 .022 .027 .033 .039 .047 .056 .068 .082 .100uF .120 .150 .180 .220 .270 .330	1000pF												
		1200												
		1500												
		1800												
		2200												
		2700												
		3300												
		3900												
		4700												
		5600												
		6800												
		8200												
		.01uF												
		.012												
		.015												
		.018												
		.022												
		.027												
		.033												
		.039												
		.047												
		.056												
		.068												
		.082												
		.100uF												
		.120												
		.150												
		.180												
		.220												
		.270												
		.330												

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

Z5U Dielectric



Values that are typically available.

(All measurements in inches)

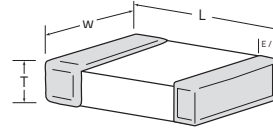
Size	0504 (± 0.008)		0603 (± 0.006)		0805 (± 0.008)		1206 (± 0.008)		1210 (± 0.016)		1812 (± 0.016)		2220 / 2221 (± 0.016)	
L	0.050		0.063		0.080		0.126		0.126		0.177		0.225 / .225	
W	0.040		0.032		0.050		0.063		0.098		0.126		0.200 / .210	
T (max)	0.040		0.038		0.058		0.070		0.075		0.085		0.108 / .108	
Min E/B	0.005		0.008		0.020 ± .010		0.020 ± .010		0.020 ± .010		0.024 ± .015		0.025 ± .015	
VDCW (MAX)	25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V		25V 50V	
CAPACITANCE CODE ↑ ↓	394	.390												
	474	.470												
	564	.560												
	684	.680												
	824	.820												
	105	1.00uF												
	125	1.20												
	155	1.50												
	185	1.80												
	225	2.20												
	335	3.30												
	395	3.90												
	475	4.70												
	685	6.80												
	106	10.0uF												
	156	15.0uF												
	226	22.0uF												
	476	47.0uF												
	107	100.0uF												

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available. For values above 1uF, thickness may be greater than specified above.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

Y5V Dielectric



Values that are typically available.

(All measurements in inches)

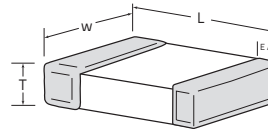
Size		0201 (± 0.002)		0402 (± 0.004)				0603 (± 0.006)				0805 (± 0.008)				1206 (± 0.008)				1210 (±0.016)				1812 (±0.016)				
L		0.024		0.040				0.063				0.080				0.126				0.126				0.177				
W		0.012		0.020				0.032				0.050				0.063				0.098				0.126				
T (max)		0.012		0.025				0.038				0.058				0.070				0.096				0.085				
Min E/B		0.002		0.004				0.008				0.020 ± .010				0.020 ± .010				0.020 ± .010				0.024 ± .015				
VDCW (MAX)		10V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	10V	16V	25V	50V	6.3V	10V	16V	25V	6.3V	10V	25V
CAPACITANCE CODE	102	1000pF																										
	122	1200																										
	152	1500																										
	182	1800																										
	222	2200																										
	272	2700																										
	332	3300																										
	392	3900																										
	472	4700																										
	562	5600																										
	682	6800																										
	822	8200																										
	103	.01uF																										
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	153	.015																										
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	223	.022																										
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124	.120																											
154	.150																											
184	.180																											
224	.220																											
274	.270																											
334	.330																											

Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.
For values above 1uF, thickness may be greater than specified above.

General Purpose Ceramic Capacitors (C Series)

Voltage and Capacitance Range

Y5V Dielectric



Values that are typically available.

(All measurements in inches)

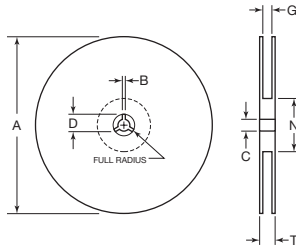
Size		0201 (± 0.002)		0402 (± 0.004)		0603 (± 0.006)				0805 (± 0.008)				1206 (± 0.008)				1210 (±0.016)				1812 (±0.016)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
L		0.024		0.040		0.063				0.080				0.126				0.126				0.177																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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T (max)		0.012		0.025		0.038				0.058				0.070				0.10				0.085																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Min E/B		0.002		0.004		0.008				0.020 ± .010				0.020 ± .010				0.020 ± .010				0.024 ± .015																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
VDCW (MAX)		10V	6.3V	10V	16V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	25V																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Note: Additional values may be available. Please contact us for more information. Due to demand and raw material fluctuations, specific values may not be available.
For values above 1uF, thickness may be greater than specified above.

General Purpose Ceramic Capacitors (C Series)

Tape and Reel Specifications

All tape and reel specifications must be adhered to per EIA-481-1-A.

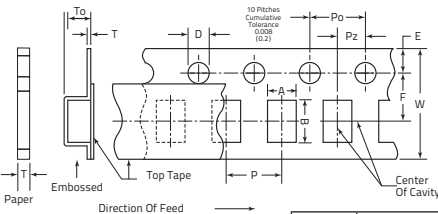


Reel Dimensions

Unit: mm (inch)

Tape	B min	C	A (7")	A (13")	D min	N min	G	T max
4mm	2.0 (0.079)	13 ± 0.05 (0.512 ± 0.02)	178 ± 2.0 (7 ± 0.079)	-	21 ± 0.8 (0.82 ± 0.03)	50 (1.97)	5.0 ± 1.5 (0.196 ± 0.05)	8.0 max (0.315 max)
8mm	2.0 (0.07)	13 ± 0.05 (0.512 ± 0.02)	178 ± 2.0 (7 ± 0.079)	330 ± 2.0 (13 ± 0.08)	20.2 (0.795)	50 (1.97)	10 ± 1.5 (0.394 ± 0.059)	14.9 (0.587)
12mm	2.0 (0.07)	13 ± 0.05 (0.512 ± 0.02)	178 ± 2.0 (7 ± 0.079)	330 ± 2.0 (13 ± 0.08)	20.2 (0.795)	50 (1.97)	10 ± 1.5 (0.394 ± 0.059)	14.9 (0.587)

Taping Specifications



7 in. Reel Quantities **

Size	01005 (E)	01005 (P)	0201	0402	0603	0805	1206	1210	1812	2221
Tape Size	4mm	8mm	8mm	8mm	8mm	8mm	8mm	8mm	12mm	12mm
Min Qty Per Reel	40,000*	20,000*	15,000	5,000	3,000	2,000	2,000	1,000	1,000	1,000
Max Qty Per Reel	40,000*	20,000*	15,000	10,000	4,000	5,000	5,000	5,000	3,000	1,000

Note: ** Quantity dependent on thickness

*Smaller quantities may be available. Please contact us.

Unit: mm (inch)

Paper Tape Carrier Dimensions (8mm)

Size (inches)	A	B	W	F	E	Po	Pz	D	t	P
01005	$\frac{0.25 \pm 0.05}{(0.010 \pm .002)}$	$\frac{0.45 \pm 0.05}{(0.018 \pm .002)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{- 0.0}$ $\frac{- 0.0}{(.039 \pm .002)}$ $- .000$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$
0201	$\frac{0.37 \pm 0.05}{(0.014 \pm .002)}$	$\frac{0.67 \pm 0.05}{(0.026 \pm .002)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{- 0.0}$ $\frac{- 0.0}{(.039 \pm .002)}$ $- .000$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$
0402	$\frac{0.65 \pm 0.1}{(.026 \pm .004)}$	$\frac{1.10 \pm 0.2}{(.043 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{- 0.0}$ $\frac{- 0.0}{(.039 \pm .002)}$ $- .000$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$
0603	$\frac{1.10 \pm 0.2}{(.043 \pm .008)}$	$\frac{1.90 \pm 0.2}{(.075 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{- 0.0}$ $\frac{- 0.0}{(.039 \pm .002)}$ $- .000$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
0805	$\frac{1.16 \pm 0.2}{(.046 \pm .008)}$	$\frac{2.4 \pm 0.2}{(.095 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{- 0.0}$ $\frac{- 0.0}{(.039 \pm .002)}$ $- .000$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1206	$\frac{2.0 \pm 0.2}{(.079 \pm .008)}$	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm 0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{- 0.0}$ $\frac{- 0.0}{(.039 \pm .002)}$ $- .000$	$\frac{1.5 \pm 0.1}{(.064 \pm .004)}$	$\frac{1.15 \text{ MAX}}{(.045 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$

Embossed Carrier Dimensions (4mm, 8mm & 12mm)

Size (inches)	A	B	W	F	E	Po	Pz	D	To	T	P
01005	$\frac{0.23}{(0.009)}$	$\frac{0.43}{(0.016)}$	$\frac{4.0 \pm 0.05}{(0.157 \pm 0.002)}$	$\frac{1.8 \pm 0.02}{(0.070 \pm 0.001)}$	$\frac{0.9 \pm 0.05}{(0.035 \pm 0.002)}$	$\frac{2.0 \pm 0.04}{(0.079 \pm 0.001)}$	$\frac{2.00}{(0.079)}$	$\frac{0.8 \pm 0.04}{(0.031 \pm 0.001)}$	$\frac{0.5 \text{ max}}{(0.019 \text{ max})}$	$\frac{0.15 - 0.4}{(0.005 - 0.015)}$	$\frac{1.00}{(0.039)}$
0805	$\frac{1.48 \pm 0.2}{(.058 \pm .008)}$	$\frac{2.3 \pm 0.2}{(.091 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm .0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{- 0.0}$ $\frac{- 0.0}{(.06 \pm .004)}$ $- .000$	$\frac{2.5 \text{ MAX}}{(.098 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1206	$\frac{2.0 \pm 0.2}{(.079 \pm .008)}$	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm .0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{- 0.0}$ $\frac{- 0.0}{(.06 \pm .004)}$ $- .000$	$\frac{2.5 \text{ MAX}}{(.098 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1210	$\frac{2.9 \pm 0.2}{(.114 \pm .008)}$	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$	$\frac{3.5 \pm .0.1}{(.138 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{- 0.0}$ $\frac{- 0.0}{(.06 \pm .004)}$ $- .000$	$\frac{2.5 \text{ MAX}}{(.098 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
1812	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$	$\frac{4.9 \pm 0.2}{(.193 \pm .008)}$	$\frac{12.0 \pm 0.3}{(.472 \pm .012)}$	$\frac{5.6 \pm .0.1}{(.221 \pm .004)}$	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$	$\frac{1.5 \pm 0.1}{- 0.0}$ $\frac{- 0.0}{(.06 \pm .004)}$ $- .000$	$\frac{3.8 \text{ MAX}}{(.150 \text{ MAX})}$	$\frac{0.6 \text{ MAX}}{(.024 \text{ MAX})}$	$\frac{8.0 \pm 0.1}{(.315 \pm .004)}$

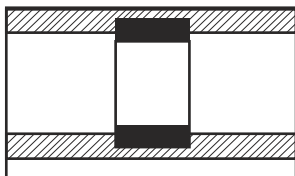
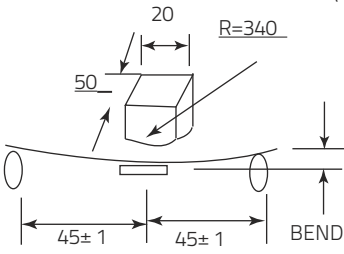
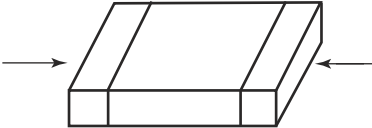
General Purpose Ceramic Capacitors (C Series)

Environmental Test Criteria

NO	ITEM		PERFORMANCE			TEST CONDITION				
1	APPEARANCE		NO ABNORMAL EXTERIOR APPEARANCE			THROUGH MICROSCOPE (X10)				
2	INSULATION RESISTANCE		10,000M OR 500M μ F PRODUCT WHICHEVER IS SMALLER (RATED VOLTAGE IS BELOW 16V: 10,000M OR 100M μ F)			RATED VOLTAGE SHALL BE APPLIED. MEASUREMENT TIME IS 60 - 120 RATED VOLTAGE TIME 60 SEC .				
3	WITHSTANDING VOLTAGE		NO DIELECTRIC BREAKDOWN OR MECHANICAL BREAKDOWN			CLASS I : 300% OF THE RATED VOLTAGE FOR 1-5 SEC, CLASS II: 250% OF THE RATED VOLTAGE FOR 1-5 SEC IS APPLIED WITH LESS THAN 50 mA CURRENT				
4	CAPACITANCE	CLASS I	WITHIN THE SPECIFIED TOLERANCE			CAPACITANCE	FREQUENCY	VOLTAGE		
						1,000pF AND BELOW	1MHz $\pm$ 10%	0.5 ~ 5 Vrms		
						MORE THAN 1,000 pF	1kHz $\pm$ 10%			
		CLASS II	WITHIN THE SPECIFIED TOLERANCE			CAPACITANCE	FREQUENCY	VOLTAGE		
						10 μ F AND BELOW	1kHz $\pm$ 10%	1.0 $\pm$ 0.2Vrms		
				MORE THAN 10 μ F	120Hz $\pm$ 20%	0.5 $\pm$ 0.1Vrms				
5	Q	CLASS I	OVER 30pF : Q 1,000 LESS THAN 30pF: Q 400 +20C (C: CAPACITANCE)			CAPACITANCE	FREQUENCY	VOLTAGE		
						1,000pF AND BELOW	1MHz $\pm$ 10%	0.5 ~ 5 Vrms		
						MORE THAN 1,000 pF	1kHz $\pm$ 10%			
6	DISSIPATION FACTOR (Tan θ CLASS II)	CLASS II	X7R, X6S, X5R							
			Rated Voltage	D.F.	Exception of D.F.					
			$\geq$ 50V	$\leq$ 2.5%	$\leq$ 3%				0201 (50V); 0603 $\geq$ 0.047 μ F 0805 $\geq$ 0.22 μ F; 1206 $\geq$ 0.47 μ F	
					$\leq$ 5%				0603 $\geq$ 1 μ F; 0805 $\geq$ 1 μ F; 1206 $\geq$ 4.7 μ F; 1210 $\geq$ 4.7 μ F	
			25V	$\leq$ 2.5%	$\leq$ 5%				0201 $\geq$ 0.01 μ F; 0805 $\geq$ 1 μ F; 1210 $\geq$ 4.7 μ F	
					$\leq$ 10%				0402 $\geq$ 0.10 μ F; 0603 $\geq$ 0.33 μ F; 0805 $\geq$ 2.2 μ F 1206 $\geq$ 4.7 μ F; 1210 $\geq$ 22 μ F	
			16V	$\leq$ 3.5%	$\leq$ 5%				0201 $\geq$ 0.01 μ F; 0402 $\geq$ 0.033 μ F; 0805 $\geq$ 0.68 μ F; 1206 $\geq$ 2.2 μ F; 1210 $\geq$ 4.7 μ F	
					$\leq$ 10%				0402 $\geq$ 0.47 μ F; 0603 $\geq$ 0.68 μ F; 0805 $\geq$ 2.2 μ F; 1206 $\geq$ 4.7 μ F; 1210 $\geq$ 22 μ F	
			10V	$\leq$ 5%	$\leq$ 10%				0402 $\geq$ 0.33 μ F; 0603 $\geq$ 0.33 μ F; 0805 $\geq$ 2.2 μ F; 1206 $\geq$ 2.2 μ F; 1210 $\geq$ 22 μ F	
			6.3V	$\leq$ 10%						
			Y5V, Z5U							
			Rated Voltage	D.F.	Exception of D.F.					
			$\geq$ 50V	$\leq$ 5%	$\leq$ 9%				0603 $\geq$ 0.1 μ F; 0805 $\geq$ 0.47 μ F; 1206 $\geq$ 4.7 μ F;	
			25V	$\leq$ 5%	$\leq$ 9%				0402 $\geq$ 0.047 μ F; 0603 $\geq$ 0.1 μ F; 0805 $\geq$ 0.33 μ F; 1206 $\geq$ 1 μ F; 1210 $\geq$ 4.7 μ F	
			16V	$\leq$ 9%	$\leq$ 12.5%				0603 $\geq$ 2.2 μ F; 0805 $\geq$ 3.3 μ F; 1206 $\geq$ 10 μ F; 1210 $\geq$ 22 μ F; 1812 $\geq$ 47 μ F	
			10V	$\leq$ 12.5%	$\leq$ 16%				0603 $\geq$ 2.2 μ F; 0805 $\geq$ 3.3 μ F; 1206 $\geq$ 4.7 μ F; 1210 $\geq$ 10 μ F; 1812 $\geq$ 47 μ F	
			6.3V	$\leq$ 16%						

General Purpose Ceramic Capacitors (C Series)

Environmental Test Criteria

NO	ITEM		PERFORMANCE		TEST CONDITION																		
7	CAPACITANCE TEMPERATURE COEFFICIENT	CLASS I	CHARACTERISTIC	TEMP. COEFFICIENT (PPM/°C)	THESE SYMMETRICAL TOLERANCE APPLY TO 2 POINT MEASUREMENT OF TEMPERATURE COEFFICIENT: ONE AT -25°C AND AT 85°C																		
			COG/NPO	0 ± 60 (±30)	STEP	TEMPERATURE (°C)																	
				-150 ± 60	1	25 ± 2																	
				-220 ± 60	2	MIN RATED TEMP ± 2																	
				-330 ± 60	3	25 ± 2																	
				-470 ± 60	4	MAX RATED TEMP ± 2																	
				-750 ± 120	5	25 ± 2																	
+350 ~ -1000																							
8	TEMPERATURE CHARACTERISTICS	CLASS II	CAPACITANCE CHANGE																				
			CHAR. CAP. CHANGE (%)																				
			X	X7R	±15%																		
				X6S	±22%																		
				X5R	±15%																		
			Y	Y5V	-82% ~ +22%																		
				Z5U	-56% ~ +22%																		
				<table><tr><th>STEP</th><th>TEMP. (°C) B</th><th>TEMP. (°C) F</th></tr><tr><td>1</td><td>25 ± 2</td><td>25 ± 2</td></tr><tr><td>2</td><td>-55 ± 2</td><td>-25 ± 2</td></tr><tr><td>3</td><td>25 ± 2</td><td>25 ± 2</td></tr><tr><td>4</td><td>125 ± 2</td><td>85 ± 2</td></tr><tr><td>5</td><td>25 ± 2</td><td>25 ± 2</td></tr></table> $\frac{C2 - C1}{C1} \times 100\%$ C1: CAPACITANCE AT STANDARD TEMPERATURE (25°C) C2: CAPACITANCE AT EACH TEMPERATURE		STEP	TEMP. (°C) B	TEMP. (°C) F	1	25 ± 2	25 ± 2	2	-55 ± 2	-25 ± 2	3	25 ± 2	25 ± 2	4	125 ± 2	85 ± 2	5	25 ± 2	25 ± 2
STEP	TEMP. (°C) B	TEMP. (°C) F																					
1	25 ± 2	25 ± 2																					
2	-55 ± 2	-25 ± 2																					
3	25 ± 2	25 ± 2																					
4	125 ± 2	85 ± 2																					
5	25 ± 2	25 ± 2																					
9	ADHESIVE STRENGTH OF TERMINATION	NO INDICATION OF PEELING SHALL OCCUR ON THE TERMINAL ELECTRODE		A 500g.f PRESSURE SHALL BE APPLIED FOR 10±1 SECOND																			
				 500g. f																			
10	BENDING STRENGTH	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCURE		BENDING SHALL BE APPLIED TO THE LIMIT (1mm) WITH 0.3mm/SEC																		
		CAPACITANCE	CHARACTER	CHANGE OF CAPACITANCE																			
			CLASS I				WITHIN ±5% OR ±0.5pF WHICHEVER IS LARGER																
			CLASS II	X (X7R, X6S, X5R)			WITHIN ±12.5%	 20 50 R=340 45± 1 45± 1 BENDING LIMIT															
Y (Y5V,Z5U)	WITHIN ±30%																						
11	SOLDERABILITY	MORE THAN 95% OF THE TERMINAL SURFACE IS TO BE SOLDERED NEWLY, SO METAL PART (A) DOES NOT COME OUT OR DISSOLVE		SOLDER TEMPERATURE : 230 ± 5 °C SOLDER: H63A FLUX: ROSIN PRE-HEATING: AT 80 ~ 120 °C FOR 10 ~ 30 SEC.																			
																							

General Purpose Ceramic Capacitors (C Series)

Environmental Test Criteria

NO	ITEM		PERFORMANCE			TEST CONDITION		
12	RESISTANCE TO SOLDERING HEAT	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR			DIP : SOLDER TEMPERATURE OF 270± 5 °C DIP TIME :10±1 SEC. EACH TERMINATION SHALL BE FULLY IMMERSED AND PREHEATED AS FOLLOWING:		
		CAPACITANCE	CHARACTERISTIC		CAP. CHANGE			
			CLASS I		WITHIN ±2.5% OR ±0.25 pF WHICHEVER IS LARGER			
			CLASS II	X	WITHIN ±7.5%			
				Y	WITHIN ±20%			
		QCLASS I	30 pF AND OVER: Q 1000 LESS THAN 30 pF: Q 400 + 20xC			MEASURE AT ROOM TEMP. AFTER COOLING FOR CLASS I : 24 ± 2 HOURS CLASS II : 48 ± 4 HOURS		
		Tan CLASS II	TO SATISFY THE SPECIFIED INITIAL VLUE					
		INSULATION RESISTANCE	TO SATISFY THE SPECIFIED INITIAL VLUE					
		WITHSTANDING VOLTAGE	TO SATISFY THE SPECIFIED INITIAL VLUE					
13	VIBRATION TEST	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR			THE CAPACITOR SHALL BE SUBJECTED TO A HARMONIC MOTION HAVING A TOTAL AMPLITUDE of 1.5mm. THE ENTIRE FREQUENCY RANGE, FROM 10 TO 55Hz AND RETURN TO 10Hz SHALL BE TRAVERSED IN 1 MINUTE. THIS CYCLE SHALL BE PERFORMED 2 HOURS IN EACH THREE MUTUALLY PERPENDICULAR DIRECTION, FOR TOTAL PERIOD of 6 HOURS.		
		CAPACITANCE	CHARACTERISTIC		CAP. CHANGE			
			CLASS I		WITHIN ±2.5% OR ±0.25 pF WHICHEVER IS LARGER			
			CLASS II	X	WITHIN ±5%			
				Y	WITHIN ±20%			
		QCLASS I	30 pF AND OVER: Q 1000 LESS THAN 30 pF: Q 400 + 20xC					
		Tan CLASS II	TO SATISFY THE SPECIFIED INITIAL VALUE					
		INSULATION RESISTANCE	TO SATISFY THE SPECIFIED INITIAL VALUE					

General Purpose Ceramic Capacitors (C Series)

Environmental Test Criteria

NO	ITEM	PERFORMANCE				TEST CONDITION																																																							
14	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR				TEMPERATURE : 40±2 °C RELATIVE HUMIDITY: 90~95 %RH TEST TIME : 500 +12/-0 Hr. MEASURE AT ROOM TEMPERATURE AFTER COOLING FOR CLASS I : 24±2 Hr. CLASS II : 48±4 Hr. SEE (FIG.3)																																																							
	CAPACITANCE	CHARACTERISTIC		CAPACITANCE CHANGE																																																									
		CLASS I		WITHIN ±5% OR±0.5pF WHICHEVER IS LARGER																																																									
		CLASS II	X	WITHIN ±12.5%																																																									
			Y	WITHIN ±30%																																																									
	QCLASS I	30pF AND OVER : Q 350 10 ~ 30pF : Q 275 + 2.5xC LESS THAN 10pF : Q 200 + 10xC																																																											
	DISSIPATION FACTOR (Tan Θ CLASS II)	X7R, X6S, X5R <table><tr><th>Rated Voltage</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr><tr><td rowspan="2">≥50V</td><td rowspan="2">≤2.5%</td><td>≤3%</td><td>0201 (50V); 0603±0.047uF 0805±0.22uF; 1206±0.47uF</td></tr><tr><td>≤5%</td><td>0603±1uF; 0805±1uF; 1206±4.7uF; 1210±4.7uF</td></tr><tr><td rowspan="2">25V</td><td rowspan="2">≤2.5%</td><td>≤5%</td><td>0201±0.01uF; 0805±1uF; 1210±4.7uF</td></tr><tr><td>≤10%</td><td>0402±0.10uF; 0603±0.33uF; 0805±2.2uF 1206±4.7uF; 1210±22uF</td></tr><tr><td rowspan="2">16V</td><td rowspan="2">≤3.5%</td><td>≤5%</td><td>0201±0.01uF; 0402±0.033uF; 0805±0.68uF; 1206±2.2uF; 1210±4.7uF</td></tr><tr><td>≤10%</td><td>0402±0.47uF; 0603±0.68uF; 0805±2.2uF; 1206±4.7uF; 1210±22uF</td></tr><tr><td>10V</td><td>≤5%</td><td>≤10%</td><td>0402±0.33uF; 0603±0.33uF; 0805±2.2uF; 1206±2.2uF; 1210±22uF</td></tr><tr><td>6.3V</td><td>≤10%</td><td></td><td></td></tr></table> Y5V, Z5U <table><tr><th>Rated Voltage</th><th>D.F.</th><th colspan="2">Exception of D.F.</th></tr><tr><td>≥50V</td><td>≤5%</td><td>≤9%</td><td>0603±0.1uF; 0805±0.47uF; 1206±4.7uF;</td></tr><tr><td>25V</td><td>≤5%</td><td>≤9%</td><td>0402±0.047uF; 0603±0.1uF; 0805±0.33uF; 1206±1uF; 1210±4.7uF</td></tr><tr><td>16V</td><td>≤9%</td><td>≤12.5%</td><td>0603±2.2uF; 0805±3.3uF; 1206±10uF; 1210±22uF; 1812±47uF</td></tr><tr><td>10V</td><td>≤12.5%</td><td>≤16%</td><td>0603±2.2uF; 0805±3.3uF; 1206±4.7uF; 1210±10uF; 1812±47uF</td></tr><tr><td>6.3V</td><td>≤16%</td><td></td><td></td></tr></table>					Rated Voltage	D.F.	Exception of D.F.		≥50V	≤2.5%	≤3%	0201 (50V); 0603±0.047uF 0805±0.22uF; 1206±0.47uF	≤5%	0603±1uF; 0805±1uF; 1206±4.7uF; 1210±4.7uF	25V	≤2.5%	≤5%	0201±0.01uF; 0805±1uF; 1210±4.7uF	≤10%	0402±0.10uF; 0603±0.33uF; 0805±2.2uF 1206±4.7uF; 1210±22uF	16V	≤3.5%	≤5%	0201±0.01uF; 0402±0.033uF; 0805±0.68uF; 1206±2.2uF; 1210±4.7uF	≤10%	0402±0.47uF; 0603±0.68uF; 0805±2.2uF; 1206±4.7uF; 1210±22uF	10V	≤5%	≤10%	0402±0.33uF; 0603±0.33uF; 0805±2.2uF; 1206±2.2uF; 1210±22uF	6.3V	≤10%			Rated Voltage	D.F.	Exception of D.F.		≥50V	≤5%	≤9%	0603±0.1uF; 0805±0.47uF; 1206±4.7uF;	25V	≤5%	≤9%	0402±0.047uF; 0603±0.1uF; 0805±0.33uF; 1206±1uF; 1210±4.7uF	16V	≤9%	≤12.5%	0603±2.2uF; 0805±3.3uF; 1206±10uF; 1210±22uF; 1812±47uF	10V	≤12.5%	≤16%	0603±2.2uF; 0805±3.3uF; 1206±4.7uF; 1210±10uF; 1812±47uF	6.3V	≤16%			
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General Purpose Ceramic Capacitors (C Series)

Environmental Test Criteria

NO	ITEM		PERFORMANCE			TEST CONDITION		
15	MOISTURE RESISTANCE	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR			APPLIED VOLTAGE: RATED VOLTAGE TEMPERATURE : 40±2 °C RELATIVE HUMIDITY: 90~95%RH TEST TIME : 500 +12/-0 Hr. CURRENT APPLIED: 50mA MAX. MEASURING AT ROOM TEMPERATURE AFTER COOLING FOR CLASS I : 24±2 Hr. CLASS II : 48±4 Hr. SEE (FIG.3)		
		CAPACITANCE	CHARACTERISTIC		CAPACITANCE CHANGE			
			CLASS I		WITHIN ±7.5% OR±0.75pF WHICHEVER IS LARGER			
			CLASS II	X	WITHIN ±12.5%			
				Y	WITHIN ±30%			
		QCLASS I	30pF AND OVER : Q 200 30pF AND BELOW : Q 100 + 10/3xC					
		DISSIPATION FACTOR (Tan Θ CLASS II)	X7R, X6S, X5R					
			Rated Voltage	D.F.	Exception of D.F.			
			≥50V	≤2.5%	≤3%		0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF	
					≤5%		0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF	
25V	≤2.5%		≤5%	0201≥0.01uF; 0805≥1uF; 1210≥4.7uF				
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6.3V	≤10%							
Y5V, Z5U								
Rated Voltage	D.F.		Exception of D.F.					
≥50V	≤5%		≤9%	0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF;				
25V	≤5%		≤9%	0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; 1206≥1uF; 1210≥4.7uF				
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10V	≤12.5%	≤16%	0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF					
6.3V	≤16%							
INSULATION RESISTANCE	MINIMUM INSULATION RESISTANCE: 100 M OR 25M .uF PRODUCT, WHICHEVER IS SMALLER							

General Purpose Ceramic Capacitors (C Series)

Environmental Test Criteria

NO	ITEM	PERFORMANCE				TEST CONDITION			
16	HIGH TEMPERATURE RESISTANCE	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR				APPLIED VOLTAGE: 150% OF RATED VOLTAGE TEST TIME : 1000 +48/-0 Hr. CURRENT APPLIED: 50mA MAX.		
		CAPACITANCE	CHARACTERISTIC		CAP. CHANGE				
			CLASS I		WITHIN ±3% OR ±0.3pF, WHICHEVER IS LARGER				
			CLASS II	X	WITHIN ±12.5%		CHAR.	TEMP.	
				Y	WITHIN ±30%		CLASS I	125 ±3 °C	
		QCLASS I	30pF AND OVER : Q 350 10 - 30 pF : Q 275 + 2.5xC LESS THAN 10pF :Q 200 + 10xC				CLASS II	X	125 ±3 °C
							Y	85 ±3 °C	
		DISSIPATION FACTOR (Tan Θ CLASS II)	X7R, X6S, X5R				(INITIAL VALUE MEASUREMENT) FOR CLASS II CAPACITORS, 150 % OF RATED VOLTAGE SHALL BE APPLIED FOR 1 HOUR AT THE MAXIMUM OPERATING TEMPERATURE, THEN KEEP IT AT ROOM TEMPERATURE. FOR 48 ±4 Hrs. SEE (FIG.3)		
			Rated Voltage	D.F.	Exception of D.F.				
			≥50V	≤2.5%	≤3%	0201 (50V); 0603≥0.047uF 0805≥0.22uF; 1206≥0.47uF			
					≤5%	0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF			
			25V	≤2.5%	≤5%	0201≥0.01uF; 0805≥1uF; 1210≥4.7uF			
					≤10%	0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF			
			16V	≤3.5%	≤5%	0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF			
					≤10%	0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF			
			10V	≤5%	≤10%	0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF			
			6.3V	≤10%					
			Y5V, Z5U						
			Rated Voltage	D.F.	Exception of D.F.				
			≥50V	≤5%	≤9%	0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF;			
			25V	≤5%	≤9%	0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; 1206≥1uF; 1210≥4.7uF			
			16V	≤9%	≤12.5%	0603≥2.2uF; 0805≥3.3uF; 1206≥10uF; 1210≥22uF; 1812≥47uF			
			10V	≤12.5%	≤16%	0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF			
			6.3V	≤16%					
		INSULATION RESISTANCE	MINIMUM INSULATION RESISTANCE: 1,000M OR 50M.μF PRODUCT WHICHEVER IS SMALLER						

General Purpose Ceramic Capacitors (C Series)

Environmental Test Criteria

NO	ITEM	PERFORMANCE				TEST CONDITION			
17	TEMPERATURE CYCLE	APPEARANCE	NO MECHANICAL DAMAGE SHALL OCCUR				CAPACITORS SHALL BE SUBJECTED TO FIVE CYCLES OF THE TEMPERATURE CYCLE AS FOLLOWING		
		CAPACITANCE	CHARACTERISTIC		CAP. CHANGE		STEP	TEMP.(°C)	TIME (MIN)
			CLASS I		WITHIN ±2.5% OR ±0.25pF WHICHEVER IS LARGER				
			CLASS II	X	WITHIN ±7.5%				
				Y	WITHIN ±20%				
		QCLASS I	30 pF AND OVER : Q 1000 LESS THAN 30pF:Q 400 +20xC				2	25	2 ~ 3
		TAN CLASS II	X7R, X6S, X5R				3	MAX. RATED TEMP. +3/-0	30
			Rated Voltage	D.F.	Exception of D.F.		4	25	2 ~ 3
			≥50V	≤2.5%	≤3%	0201 (50V); 0603±0.047uF 0805±0.22uF; 1206±0.47uF	MEASURE AT ROOM TEMPERATURE AFTER COOLING FOR CLASS I : 24±2 Hr. CLASS II : 48±4 Hr. SEE(FIG.3)		
					≤5%	0603≥1uF; 0805≥1uF; 1206≥4.7uF; 1210≥4.7uF			
			25V	≤2.5%	≤5%	0201≥0.01uF; 0805≥1uF; 1210≥4.7uF			
					≤10%	0402≥0.10uF; 0603≥0.33uF; 0805≥2.2uF 1206≥4.7uF; 1210≥22uF			
			16V	≤3.5%	≤5%	0201≥0.01uF; 0402≥0.033uF; 0805≥0.68uF; 1206≥2.2uF; 1210≥4.7uF			
					≤10%	0402≥0.47uF; 0603≥0.68uF; 0805≥2.2uF; 1206≥4.7uF; 1210≥22uF			
10V	≤5%		≤10%	0402≥0.33uF; 0603≥0.33uF; 0805≥2.2uF; 1206≥2.2uF; 1210≥22uF					
6.3V	≤10%								
Y5V, Z5U									
Rated Voltage	D.F.	Exception of D.F.							
≥50V	≤5%	≤9%	0603≥0.1uF; 0805≥0.47uF; 1206≥4.7uF;						
25V	≤5%	≤9%	0402≥0.047uF; 0603≥0.1uF; 0805≥0.33uF; 1206≥1uF; 1210≥4.7uF						
16V	≤9%	≤12.5%	0603≥2.2uF; 0805≥3.3uF; 1206≥10uF; 1210≥22uF; 1812≥47uF						
10V	≤12.5%	≤16%	0603≥2.2uF; 0805≥3.3uF; 1206≥4.7uF; 1210≥10uF; 1812≥47uF						
6.3V	≤16%								
INSULATION RESISTANCE	TO SATISFY THE SPECIFIED INITIAL VALUE								

CAPACITORS SHALL BE SUBJECTED
TO FIVE CYCLES OF THE
TEMPERATURE CYCLE AS FOLLOWING

STEP

TEMP.(°C)

TIME
(MIN)

1

MIN.
RATED TEMP.
+0/-3

30

2

25

2 ~ 3

3

MAX.
RATED TEMP.
+3/-0

30

4

25

2 ~ 3

QCLASS I

30 pF AND OVER : Q 1000
LESS THAN 30pF:Q 400+20xC

TAN CLASS II

X7R, X6S, X5R

Rated Voltage	D.F.	Exception of D.F.	
$\geq 50\text{V}$	$\leq 2.5\%$	$\leq 3\%$	0201 (50V); 0603 $\geq 0.047\mu\text{F}$ 0805 $\geq 0.22\mu\text{F}$; 1206 $\geq 0.47\mu\text{F}$
		$\leq 5\%$	0603 $\geq 1\mu\text{F}$; 0805 $\geq 1\mu\text{F}$; 1206 $\geq 4.7\mu\text{F}$; 1210 $\geq 4.7\mu\text{F}$
25V	$\leq 2.5\%$	$\leq 5\%$	0201 $\geq 0.01\mu\text{F}$; 0805 $\geq 1\mu\text{F}$; 1210 $\geq 4.7\mu\text{F}$
		$\leq 10\%$	0402 $\geq 0.10\mu\text{F}$; 0603 $\geq 0.33\mu\text{F}$; 0805 $\geq 2.2\mu\text{F}$ 1206 $\geq 4.7\mu\text{F}$; 1210 $\geq 22\mu\text{F}$
16V	$\leq 3.5\%$	$\leq 5\%$	0201 $\geq 0.01\mu\text{F}$; 0402 $\geq 0.033\mu\text{F}$; 0805 $\geq 0.68\mu\text{F}$; 1206 $\geq 2.2\mu\text{F}$; 1210 $\geq 4.7\mu\text{F}$
		$\leq 10\%$	0402 $\geq 0.47\mu\text{F}$; 0603 $\geq 0.68\mu\text{F}$; 0805 $\geq 2.2\mu\text{F}$; 1206 $\geq 4.7\mu\text{F}$; 1210 $\geq 22\mu\text{F}$
10V	$\leq 5\%$	$\leq 10\%$	0402 $\geq 0.33\mu\text{F}$; 0603 $\geq 0.33\mu\text{F}$; 0805 $\geq 2.2\mu\text{F}$; 1206 $\geq 2.2\mu\text{F}$; 1210 $\geq 22\mu\text{F}$
6.3V	$\leq 10\%$		

Y5V, Z5U

Rated Voltage	D.F.	Exception of D.F.	
$\geq 50\text{V}$	$\leq 5\%$	$\leq 9\%$	0603 $\geq 0.1\mu\text{F}$; 0805 $\geq 0.47\mu\text{F}$; 1206 $\geq 4.7\mu\text{F}$;
25V	$\leq 5\%$	$\leq 9\%$	0402 $\geq 0.047\mu\text{F}$; 0603 $\geq 0.1\mu\text{F}$; 0805 $\geq 0.33\mu\text{F}$; 1206 $\geq 1\mu\text{F}$; 1210 $\geq 4.7\mu\text{F}$
16V	$\leq 9\%$	$\leq 12.5\%$	0603 $\geq 2.2\mu\text{F}$; 0805 $\geq 3.3\mu\text{F}$; 1206 $\geq 10\mu\text{F}$; 1210 $\geq 22\mu\text{F}$; 1812 $\geq 47\mu\text{F}$
10V	$\leq 12.5\%$	$\leq 16\%$	0603 $\geq 2.2\mu\text{F}$; 0805 $\geq 3.3\mu\text{F}$; 1206 $\geq 4.7\mu\text{F}$; 1210 $\geq 10\mu\text{F}$; 1812 $\geq 47\mu\text{F}$
6.3V	$\leq 16\%$		

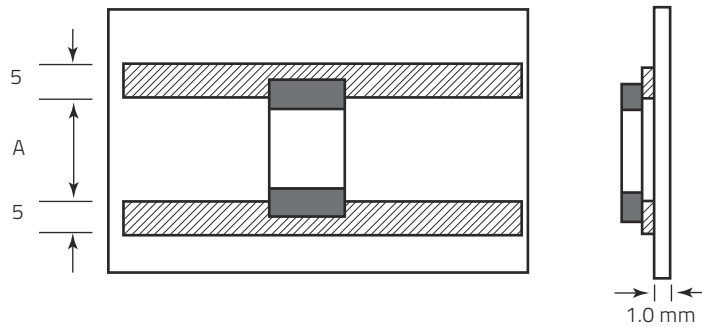
INSULATION RESISTANCE

TO SATISFY THE SPECIFIED
INITIAL VALUE

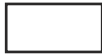
MEASURE AT ROOM TEMPERATURE
AFTER COOLING FOR
CLASS I : 24 $\pm$ 2 Hr.
CLASS II : 48 $\pm$ 4 Hr.
SEE(FIG.3)

General Purpose Ceramic Capacitors (C Series)

Adhesive Strength of Termination



CODE	DIMENSION (mm)	A (mm)	CODE	DIMENSION (mm)	A (mm)
01005 (0402)	0.40 x 0.20	0.12	1206 (3216)	3.2 x 1.6	2.2
0201 (0603)	0.61 x 0.31	0.2	1210 (3225)	3.2 x 2.5	2.2
0402 (1005)	1.0 x 0.5	0.4	1812 (4532)	4.5 x 3.2	3.5
0603 (1608)	1.6 x 0.8	1.0	2220 (5750)	5.7 x 5.08	4.7
0805 (2012)	2.0 x 1.25	1.2			

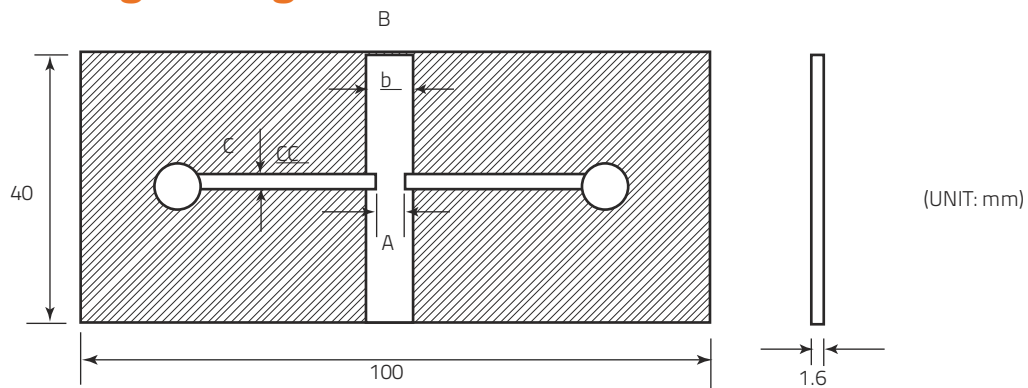


MATERIAL: ALUMINA SUBSTRATE (Al₂O₃ 95% min) OR GLASS EPOXY SUBSTRATE



COPPER FOIL (t = 0.035mm)

Substrate Bending Strength



CODE	DIMENSION (mm)	A (mm)	B (mm)	C (mm)
01005 (0402)	0.40 x 0.20	0.12	0.7	0.20
0201 (0603)	0.61 x 0.31	0.2	1.0	0.4
0402 (1005)	1.0 x 0.5	0.4	1.4	0.5
0603 (1608)	1.6 x 0.8	1.0	3.0	1.0
0805 (2012)	2.0 x 1.25	1.2	4.0	1.65
1206 (3216)	3.2 x 1.6	2.2	5.0	2.0
1210 (3225)	3.2 x 2.5	2.2	5.0	3.2
1812 (4532)	4.5 x 3.2	3.5	7.0	4.0
2220 (5750)	5.7 x 5.08	4.7	8.5	5.0

MATERIAL: GLASS EPOXY SUBSTRATE



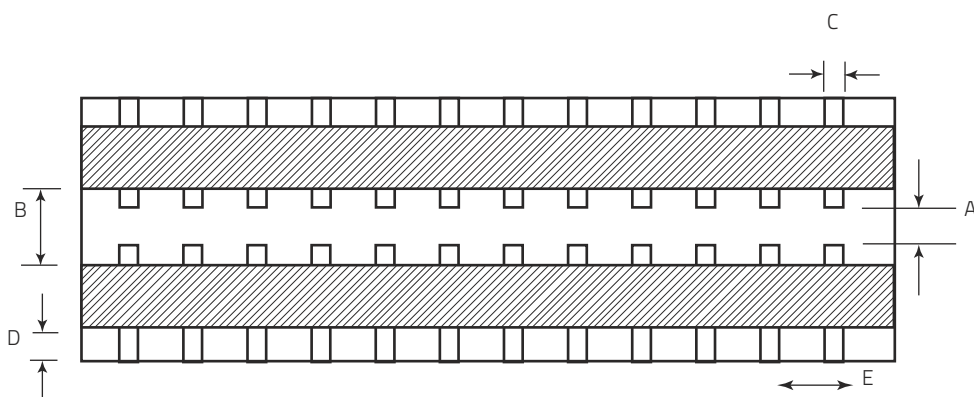
COPPER FOIL (t = 0.035mm)



SOLDER RESIST

General Purpose Ceramic Capacitors (C Series)

Test Substrate



(UNIT: mm)

CODE	DIEMNSION (mm)	A	B	C	D	E
0201 (0603)	0.61 x 0.31	0.2	1.0	0.4	7.5	3.6
0402 (1005)	1.0 x 0.5	0.4	1.4	0.5	7.5	3.8
0603 (1608)	1.6 x 0.8	1.0	3.0	0.7	7.5	4.0
0805 (2012)	2.0 x 1.25	1.2	4.0	1.0	7.5	4.2
1206 (3216)	3.2 x 1.6	2.2	5.0	1.3	7.5	4.6
1210 (3225)	3.2 x 2.5	2.2	5.0	2.0	7.5	5.5
1812 (4532)	4.5 x 3.2	3.5	7.0	2.7	7.5	6.2
2220 (5750)	5.7 x 5.08	4.7	8.5	3.4	7.5	7.0

MATERIAL: GLASS EPOXY SUBSTRATE



COPPER FOIL (t = 0.035mm)



SOLDER RESIST