

# Radial Lead Type Monolithic Ceramic Capacitors



**muRata**

*Innovator  
in Electronics*

Murata  
Manufacturing Co., Ltd.

# CONTENTS

|                                                                       |    |
|-----------------------------------------------------------------------|----|
| <b>Part Numbering</b>                                                 | 2  |
| <b>Radial Lead Type Monolithic Ceramic Capacitors</b>                 | 3  |
| <b>Marking</b>                                                        | 4  |
| <b>Temperature Compensating Type, C0G Characteristics</b>             | 5  |
| <b>High Dielectric Constant Type, X7R Characteristics</b>             | 8  |
| <b>High Dielectric Constant Type, Z5U Characteristics</b>             | 10 |
| <b>High Dielectric Constant Type, Y5V Characteristics</b>             | 11 |
| <b>Small Size, Temperature Compensating Type, C0G Characteristics</b> | 12 |
| <b>Small Size, High Dielectric Constant Type, X7R Characteristics</b> | 13 |
| <b>Small Size, High Dielectric Constant Type, Z5U Characteristics</b> | 14 |
| <b>Small Size, High Dielectric Constant Type, Y5V Characteristics</b> | 14 |
| <b>Specifications and Test Methods</b>                                | 15 |
| <b>Characteristics Data (Typical Example)</b>                         | 18 |
| <b>Packaging</b>                                                      | 19 |
| <b>⚠Caution</b>                                                       | 21 |
| <b>Notice/QS9000 Certification</b>                                    | 24 |

## ● Part Numbering

### Radial Lead Type Monolithic Ceramic Capacitors

(Part Number)

|    |   |    |    |     |   |   |    |     |   |
|----|---|----|----|-----|---|---|----|-----|---|
| RP | E | R7 | 1H | 104 | K | 2 | M1 | A03 | A |
| ①  | ② | ③  | ④  | ⑤   | ⑥ | ⑦ | ⑧  | ⑨   | ⑩ |

①Product ID

②Series/Terminal

| Product ID | Series/Terminal |                                                |
|------------|-----------------|------------------------------------------------|
| RP         | E               | Radial Lead Type Monolithic Ceramic Capacitors |

③Temperature Characteristics

| Code | Temperature Characteristics | Temperature Range | Capacitance Change or Temperature Coefficient | Operating Temperature Range |
|------|-----------------------------|-------------------|-----------------------------------------------|-----------------------------|
| 5C   | C0G                         | 25 to 125°C       | 0±30ppm/°C                                    | -55 to 125°C                |
| E4   | Z5U                         | 10 to 85°C        | +22, -56%                                     | 10 to 85°C                  |
| F5   | Y5V                         | -30 to 85°C       | +22, -82%                                     | -30 to 85°C                 |
| R7   | X7R                         | -55 to 125°C      | ±15%                                          | -55 to 125°C                |

④Rated Voltage

| Code | Rated Voltage |
|------|---------------|
| 1E   | DC25V         |
| 1H   | DC50V         |
| 2A   | DC100V        |

⑤Capacitance

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 which 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.

⑥Capacitance Tolerance

| Code | Capacitance Tolerance | Temperature Characteristics | Capacitance Step    |
|------|-----------------------|-----------------------------|---------------------|
| C    | ±0.25pF               | C0G                         | ≤5pF : 1pF Step     |
| D    | ±0.5pF                |                             | 6 to 9pF : 1pF Step |
| J    | ±5%                   |                             | ≥10 : E12 Series    |
| K    | ±10%                  | X7R                         | E6 Series           |
| M    | ±20%                  | Z5U                         | E3 Series           |
| Z    | +80%, -20%            | Y5V                         | E3 Series           |

⑦Dimensions (LxW)

| Code | Dimensions (LxW) |
|------|------------------|
| 1    | 3.5×3.0mm        |
| 2    | 5.0×3.5mm        |
| 3    | 5.0×4.5mm        |
| 4    | 7.5×5.0mm        |
| 5    | 7.5×7.5mm        |
| 6    | 10.0×10.0mm      |
| 7    | 12.5×12.5mm      |
| 8    | 7.5×5.5mm        |

⑧Lead Style

| Code  | Lead Style           | Lead Spacing     |
|-------|----------------------|------------------|
| A1    | Straight Long        | F=2.5mm          |
| B1    | Straight Long        | F=5.0mm          |
| C1    | Straight Long        | other than above |
| E1/E2 | Straight Taping      | F=5.0mm          |
| K1    | Inside Crimp         | F=5.0mm          |
| M1/M2 | Inside Crimp Taping  | F=5.0mm          |
| P1    | Outside Crimp        | F=2.5mm          |
| S1/S2 | Outside Crimp Taping | F=2.5mm          |

Lead distance between reference and bottom planes.

M1, S1 : H<sub>0</sub> = 16.0±0.5mm

M2, S2 : H<sub>0</sub> = 20.0±0.5mm

E1 : H = 17.5±0.5mm

E2 : H = 20.0±0.5mm

⑨Individual Specification Code

Expressed by three figures

⑩Packaging

| Code | Packaging |
|------|-----------|
| A    | Ammo Pack |
| B    | Bulk      |

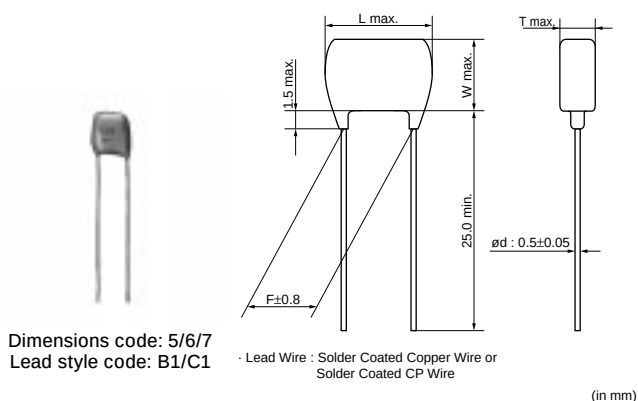
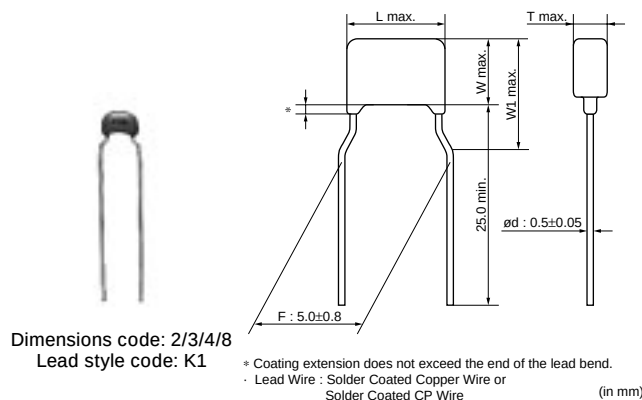
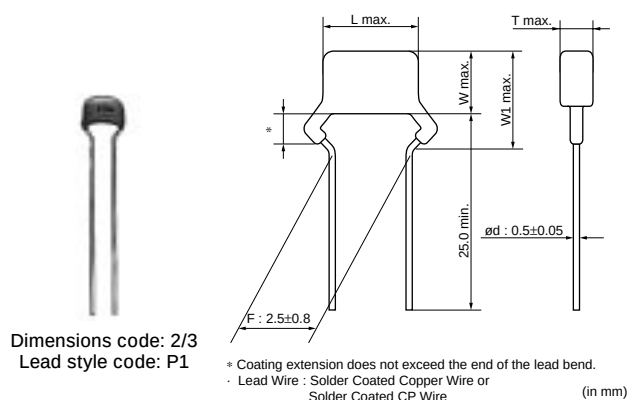
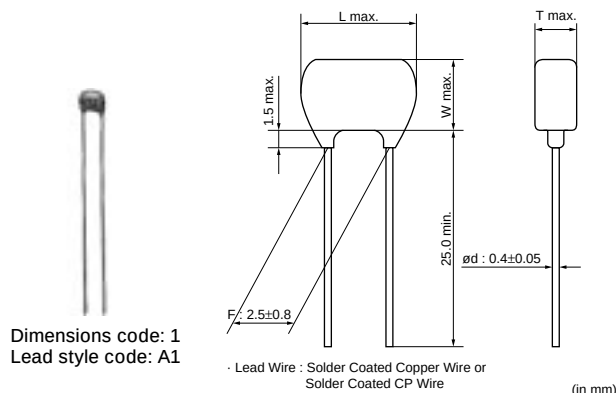
# Radial Lead Type Monolithic Ceramic Capacitors

**muRata**

## Radial Lead Type Monolithic Ceramic Capacitors

### ■ Features

1. The RPE series capacitors have small dimensions, large capacitance, and a capacity volume ratio of 10 micro F/cm cube, close to that of electrolytic capacitors. These do not have polarity.
2. These have excellent frequency characteristics and due to these small internal inductance are suitable for high frequencies.
3. These are not coated with wax so there is no change in their exterior appearance due to the outflow of wax during soldering or solvent during cleansing.
4. These are highly inflammable, having characteristics equivalent to the UL94V-0 standard.



### ■ Dimensions

| Dimensions and Lead style code | Dimensions (mm) |      |     |                                          |      |     |
|--------------------------------|-----------------|------|-----|------------------------------------------|------|-----|
|                                | L               | W    | W1  | T                                        | F    | d   |
| 1A1                            | 3.5             | 3.0  | -   | See the individual product specification | 2.5  | 0.4 |
| 2P1/2S1/2S2                    | 5.0             | 3.5  | 5.0 |                                          | 2.5  | 0.5 |
| 2K1/2M1/2M2                    | 5.0             | 3.5  | 5.0 |                                          | 5.0  | 0.5 |
| 3P1/3S1/3S2                    | 5.0             | 4.5  | 6.3 |                                          | 2.5  | 0.5 |
| 3K1/3M1/3M2                    | 5.0             | 4.5  | 6.3 |                                          | 5.0  | 0.5 |
| 4K1/4M1/4M2                    | 7.5             | 5.0  | 7.0 |                                          | 5.0  | 0.5 |
| 5B1/5E1/5E2                    | 7.5             | 7.5  | -   |                                          | 5.0  | 0.5 |
| 6B1/6E1/6E2                    | 10.0            | 10.0 | -   |                                          | 5.0  | 0.5 |
| 7C1                            | 12.5            | 12.5 | -   |                                          | 10.0 | 0.5 |
| 8K1/8M1/8M2                    | 7.5             | 5.5  | 8.0 |                                          | 5.0  | 0.5 |
| TB1/TE1/TE2                    | 10.0            | 8.5  | -   |                                          | 5.0  | 0.5 |

Continued on the following page. ↗

Continued from the preceding page.

## ■ Marking

| Type                          |                                                           | Temperature Compensating Type                                                                                                                       | High Dielectric Constant Type  |                                |                                |  |
|-------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--|
| Dimensions Code               | Temp. Char.                                               | C0G                                                                                                                                                 | X7R                            | Z5U                            | Y5V                            |  |
| 1                             |                                                           |                                                                                                                                                     |                                |                                |                                |  |
| 2                             | Individual Specification Code<br>A□□<br>B□□<br>Z□□        | <div>102J</div> <div>5A</div> <div>Marked on both sides</div>                                                                                       | <div>222K</div>                | <div>222M</div>                | <div>224Z</div>                |  |
|                               | Individual Specification Code Except<br>A□□<br>B□□<br>Z□□ | <div>M682</div> <div>J5A</div>                                                                                                                      | <div>M224</div> <div>K5C</div> | <div>M224</div> <div>M5E</div> | <div>M474</div> <div>Z5F</div> |  |
| 3, 4, 8                       |                                                           | <div>M103</div> <div>J5A</div>                                                                                                                      | <div>M684</div> <div>K5C</div> | <div>M105</div> <div>M5E</div> | <div>M105</div> <div>Z5F</div> |  |
| 5, 6, 7                       |                                                           | <div>M333</div> <div>J5A</div>                                                                                                                      | <div>M225</div> <div>K5C</div> | <div>M225</div> <div>M5E</div> | <div>M225</div> <div>Z5F</div> |  |
| Temperature Characteristics   |                                                           | Marked with code (C0G char.: A, X7R char.: C, Z5U char.: E, Y5V char.: F)<br>A part is omitted (Please refer marking example)                       |                                |                                |                                |  |
| Nominal Capacitance           |                                                           | Under 100pF: Actual value    100pF and over: marked with 3 figures                                                                                  |                                |                                |                                |  |
| Capacitance Tolerance         |                                                           | Marked with code                                                                                                                                    |                                |                                |                                |  |
| Rated Voltage                 |                                                           | Marked with code (DC25V: 2, DC50V: 5, DC100V: 1)<br>A part is omitted (Please refer marking example)                                                |                                |                                |                                |  |
| Manufacturer's Identification |                                                           | Marked with <br>A part is omitted (Please refer marking example) |                                |                                |                                |  |

## Temperature Compensating Type, C0G Characteristics

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance (pF) | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|------------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPE5C1H1R0C2□□B03□ | C0G         | 50                  | 1.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H1R0C2□□B03□ | C0G         | 50                  | 1.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H2R0C2□□B03□ | C0G         | 50                  | 2.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H2R0C2□□B03□ | C0G         | 50                  | 2.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H3R0C2□□B03□ | C0G         | 50                  | 3.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H3R0C2□□B03□ | C0G         | 50                  | 3.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H4R0C2□□B03□ | C0G         | 50                  | 4.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H4R0C2□□B03□ | C0G         | 50                  | 4.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H5R0C2□□B03□ | C0G         | 50                  | 5.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H5R0C2□□B03□ | C0G         | 50                  | 5.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H6R0D2□□B03□ | C0G         | 50                  | 6.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H6R0D2□□B03□ | C0G         | 50                  | 6.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H7R0D2□□Z03□ | C0G         | 50                  | 7.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H7R0D2□□Z03□ | C0G         | 50                  | 7.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H8R0D2□□Z03□ | C0G         | 50                  | 8.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H8R0D2□□Z03□ | C0G         | 50                  | 8.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H9R0D2□□Z03□ | C0G         | 50                  | 9.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H9R0D2□□Z03□ | C0G         | 50                  | 9.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H100J2□□Z03□ | C0G         | 50                  | 10 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H100J2□□Z03□ | C0G         | 50                  | 10 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H120J2□□Z03□ | C0G         | 50                  | 12 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H120J2□□Z03□ | C0G         | 50                  | 12 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H150J2□□Z03□ | C0G         | 50                  | 15 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H150J2□□Z03□ | C0G         | 50                  | 15 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H180J2□□Z03□ | C0G         | 50                  | 18 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H180J2□□Z03□ | C0G         | 50                  | 18 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H220J2□□Z03□ | C0G         | 50                  | 22 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H220J2□□Z03□ | C0G         | 50                  | 22 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H270J2□□Z03□ | C0G         | 50                  | 27 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H270J2□□Z03□ | C0G         | 50                  | 27 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H330J2□□Z03□ | C0G         | 50                  | 33 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H330J2□□Z03□ | C0G         | 50                  | 33 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H390J2□□Z03□ | C0G         | 50                  | 39 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H390J2□□Z03□ | C0G         | 50                  | 39 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H470J2□□Z03□ | C0G         | 50                  | 47 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H470J2□□Z03□ | C0G         | 50                  | 47 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H560J2□□Z03□ | C0G         | 50                  | 56 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H560J2□□Z03□ | C0G         | 50                  | 56 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H680J2□□Z03□ | C0G         | 50                  | 68 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H680J2□□Z03□ | C0G         | 50                  | 68 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H820J2□□Z03□ | C0G         | 50                  | 82 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H820J2□□Z03□ | C0G         | 50                  | 82 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H101J2□□A03□ | C0G         | 50                  | 100 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H101J2□□A03□ | C0G         | 50                  | 100 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H121J2□□A03□ | C0G         | 50                  | 120 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H121J2□□A03□ | C0G         | 50                  | 120 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H151J2□□A03□ | C0G         | 50                  | 150 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H151J2□□A03□ | C0G         | 50                  | 150 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H181J2□□A03□ | C0G         | 50                  | 180 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H181J2□□A03□ | C0G         | 50                  | 180 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H221J2□□A03□ | C0G         | 50                  | 220 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H221J2□□A03□ | C0G         | 50                  | 220 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H271J2□□A03□ | C0G         | 50                  | 270 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H271J2□□A03□ | C0G         | 50                  | 270 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |

Continued on the following page. 

Continued from the preceding page.

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance (pF) | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|------------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPE5C1H331J2□□A03□ | C0G         | 50                  | 330 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H331J2□□A03□ | C0G         | 50                  | 330 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H391J2□□A03□ | C0G         | 50                  | 390 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H391J2□□A03□ | C0G         | 50                  | 390 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H471J2□□A03□ | C0G         | 50                  | 470 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H471J2□□A03□ | C0G         | 50                  | 470 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H561J2□□A03□ | C0G         | 50                  | 560 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H561J2□□A03□ | C0G         | 50                  | 560 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H681J2□□A03□ | C0G         | 50                  | 680 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H681J2□□A03□ | C0G         | 50                  | 680 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H821J2□□A03□ | C0G         | 50                  | 820 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H821J2□□A03□ | C0G         | 50                  | 820 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H102J2□□A03□ | C0G         | 50                  | 1000 ±5%         | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H102J2□□A03□ | C0G         | 50                  | 1000 ±5%         | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H122J2□□A03□ | C0G         | 50                  | 1200 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H122J2□□A03□ | C0G         | 50                  | 1200 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H152J2□□A03□ | C0G         | 50                  | 1500 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H152J2□□A03□ | C0G         | 50                  | 1500 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H182J2□□C03□ | C0G         | 50                  | 1800 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H182J2□□A03□ | C0G         | 50                  | 1800 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H222J2□□C03□ | C0G         | 50                  | 2200 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H222J2□□A03□ | C0G         | 50                  | 2200 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H272J2□□C03□ | C0G         | 50                  | 2700 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H272J2□□A03□ | C0G         | 50                  | 2700 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H332J2□□C03□ | C0G         | 50                  | 3300 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H332J2□□A03□ | C0G         | 50                  | 3300 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H392J2□□C03□ | C0G         | 50                  | 3900 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H392J2□□A03□ | C0G         | 50                  | 3900 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H472J2□□C03□ | C0G         | 50                  | 4700 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H472J2□□A03□ | C0G         | 50                  | 4700 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H562J2□□C03□ | C0G         | 50                  | 5600 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C1H562J2□□A03□ | C0G         | 50                  | 5600 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H682J2□□C03□ | C0G         | 50                  | 6800 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H822J2□□C03□ | C0G         | 50                  | 8200 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H103J2□□C03□ | C0G         | 50                  | 10000 ±5%        | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H123J4□□F03□ | C0G         | 50                  | 12000 ±5%        | 7.5 x 5.0           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H153J4□□F03□ | C0G         | 50                  | 15000 ±5%        | 7.5 x 5.0           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C1H183J5□□X03□ | C0G         | 50                  | 18000 ±5%        | 7.5 x 7.5           | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C1H223J6□□F12□ | C0G         | 50                  | 22000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C1H273J6□□F12□ | C0G         | 50                  | 27000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C1H333J6□□F03□ | C0G         | 50                  | 33000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C1H393J6□□F03□ | C0G         | 50                  | 39000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C1H473J7□□F03□ | C0G         | 50                  | 47000 ±5%        | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |
| RPE5C1H563J7□□F03□ | C0G         | 50                  | 56000 ±5%        | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |
| RPE5C1H683J7□□F03□ | C0G         | 50                  | 68000 ±5%        | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |
| RPE5C2A1R0C2□□B03□ | C0G         | 100                 | 1.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A1R0C2□□B03□ | C0G         | 100                 | 1.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A2R0C2□□B03□ | C0G         | 100                 | 2.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A2R0C2□□B03□ | C0G         | 100                 | 2.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A3R0C2□□B03□ | C0G         | 100                 | 3.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A3R0C2□□B03□ | C0G         | 100                 | 3.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A4R0C2□□B03□ | C0G         | 100                 | 4.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A4R0C2□□B03□ | C0G         | 100                 | 4.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A5R0C2□□B03□ | C0G         | 100                 | 5.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A5R0C2□□B03□ | C0G         | 100                 | 5.0 ±0.25pF      | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A6R0D2□□B03□ | C0G         | 100                 | 6.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A6R0D2□□B03□ | C0G         | 100                 | 6.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |

Continued on the following page. ➤



Continued from the preceding page.

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance (pF) | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|------------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPE5C2A7R0D2□□Z03□ | C0G         | 100                 | 7.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A7R0D2□□Z03□ | C0G         | 100                 | 7.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A8R0D2□□Z03□ | C0G         | 100                 | 8.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A8R0D2□□Z03□ | C0G         | 100                 | 8.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A9R0D2□□Z03□ | C0G         | 100                 | 9.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A9R0D2□□Z03□ | C0G         | 100                 | 9.0 ±0.5pF       | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A100J2□□Z03□ | C0G         | 100                 | 10 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A100J2□□Z03□ | C0G         | 100                 | 10 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A120J2□□Z03□ | C0G         | 100                 | 12 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A120J2□□Z03□ | C0G         | 100                 | 12 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A150J2□□Z03□ | C0G         | 100                 | 15 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A150J2□□Z03□ | C0G         | 100                 | 15 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A180J2□□Z03□ | C0G         | 100                 | 18 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A180J2□□Z03□ | C0G         | 100                 | 18 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A220J2□□Z03□ | C0G         | 100                 | 22 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A220J2□□Z03□ | C0G         | 100                 | 22 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A270J2□□Z03□ | C0G         | 100                 | 27 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A270J2□□Z03□ | C0G         | 100                 | 27 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A330J2□□Z03□ | C0G         | 100                 | 33 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A330J2□□Z03□ | C0G         | 100                 | 33 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A390J2□□Z03□ | C0G         | 100                 | 39 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A390J2□□Z03□ | C0G         | 100                 | 39 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A470J2□□Z03□ | C0G         | 100                 | 47 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A470J2□□Z03□ | C0G         | 100                 | 47 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A560J2□□Z03□ | C0G         | 100                 | 56 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A560J2□□Z03□ | C0G         | 100                 | 56 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A680J2□□Z03□ | C0G         | 100                 | 68 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A680J2□□Z03□ | C0G         | 100                 | 68 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A820J2□□Z03□ | C0G         | 100                 | 82 ±5%           | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A820J2□□Z03□ | C0G         | 100                 | 82 ±5%           | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A101J2□□Z03□ | C0G         | 100                 | 100 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A101J2□□Z03□ | C0G         | 100                 | 100 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A121J2□□Z03□ | C0G         | 100                 | 120 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A121J2□□Z03□ | C0G         | 100                 | 120 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A151J2□□Z03□ | C0G         | 100                 | 150 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A151J2□□Z03□ | C0G         | 100                 | 150 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A181J2□□Z03□ | C0G         | 100                 | 180 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A181J2□□Z03□ | C0G         | 100                 | 180 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A221J2□□Z03□ | C0G         | 100                 | 220 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A221J2□□Z03□ | C0G         | 100                 | 220 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A271J2□□Z03□ | C0G         | 100                 | 270 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A271J2□□Z03□ | C0G         | 100                 | 270 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A331J2□□Z03□ | C0G         | 100                 | 330 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A331J2□□Z03□ | C0G         | 100                 | 330 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A391J2□□Z03□ | C0G         | 100                 | 390 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A391J2□□Z03□ | C0G         | 100                 | 390 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A471J2□□Z03□ | C0G         | 100                 | 470 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A471J2□□Z03□ | C0G         | 100                 | 470 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A561J2□□B03□ | C0G         | 100                 | 560 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A561J2□□B03□ | C0G         | 100                 | 560 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A681J2□□B03□ | C0G         | 100                 | 680 ±5%          | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A681J2□□B03□ | C0G         | 100                 | 680 ±5%          | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A821J2□□B03□ | C0G         | 100                 | 820 ±5%          | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A821J2□□B03□ | C0G         | 100                 | 820 ±5%          | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A102J2□□B03□ | C0G         | 100                 | 1000 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A102J2□□B03□ | C0G         | 100                 | 1000 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A122J2□□D03□ | C0G         | 100                 | 1200 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |

Continued on the following page.



Continued from the preceding page.

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance (pF) | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|------------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPE5C2A122J2□□D03□ | C0G         | 100                 | 1200 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A152J2□□D03□ | C0G         | 100                 | 1500 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A152J2□□D03□ | C0G         | 100                 | 1500 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A182J2□□D03□ | C0G         | 100                 | 1800 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A182J2□□D03□ | C0G         | 100                 | 1800 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A222J2□□D03□ | C0G         | 100                 | 2200 ±5%         | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A222J2□□D03□ | C0G         | 100                 | 2200 ±5%         | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A272J3□□D03□ | C0G         | 100                 | 2700 ±5%         | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A272J3□□D03□ | C0G         | 100                 | 2700 ±5%         | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A332J3□□D03□ | C0G         | 100                 | 3300 ±5%         | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A332J3□□D03□ | C0G         | 100                 | 3300 ±5%         | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A392J3□□D03□ | C0G         | 100                 | 3900 ±5%         | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPE5C2A392J3□□D03□ | C0G         | 100                 | 3900 ±5%         | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A472J4□□X03□ | C0G         | 100                 | 4700 ±5%         | 7.5 x 5.0           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A562J4□□F03□ | C0G         | 100                 | 5600 ±5%         | 7.5 x 5.0           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A682J4□□F03□ | C0G         | 100                 | 6800 ±5%         | 7.5 x 5.0           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPE5C2A822J5□□X03□ | C0G         | 100                 | 8200 ±5%         | 7.5 x 7.5           | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A103J5□□X03□ | C0G         | 100                 | 10000 ±5%        | 7.5 x 7.5           | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A123J5□□X03□ | C0G         | 100                 | 12000 ±5%        | 7.5 x 7.5           | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A153J6□□X13□ | C0G         | 100                 | 15000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A183J6□□X13□ | C0G         | 100                 | 18000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A223J6□□X03□ | C0G         | 100                 | 22000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A273J6□□X03□ | C0G         | 100                 | 27000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A333J6□□F03□ | C0G         | 100                 | 33000 ±5%        | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPE5C2A393J7□□X03□ | C0G         | 100                 | 39000 ±5%        | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |
| RPE5C2A473J7□□F03□ | C0G         | 100                 | 47000 ±5%        | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |
| RPE5C2A563J7□□F03□ | C0G         | 100                 | 56000 ±5%        | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |

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 Characteristics

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|-------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPER71E474K2□□A03□ | X7R         | 25                  | 0.47μF ±10% | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71E684K2□□C03□ | X7R         | 25                  | 0.68μF ±10% | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71E105K2□□C03□ | X7R         | 25                  | 1.0μF ±10%  | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71E155K3□□C07□ | X7R         | 25                  | 1.5μF ±10%  | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71E225K3□□C07□ | X7R         | 25                  | 2.2μF ±10%  | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H221K2□□A03□ | X7R         | 50                  | 220pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H221K2□□A03□ | X7R         | 50                  | 220pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H331K2□□A03□ | X7R         | 50                  | 330pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H331K2□□A03□ | X7R         | 50                  | 330pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H471K2□□A03□ | X7R         | 50                  | 470pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H471K2□□A03□ | X7R         | 50                  | 470pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H681K2□□A03□ | X7R         | 50                  | 680pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H681K2□□A03□ | X7R         | 50                  | 680pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H102K2□□A03□ | X7R         | 50                  | 1000pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H102K2□□A03□ | X7R         | 50                  | 1000pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H152K2□□A03□ | X7R         | 50                  | 1500pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H152K2□□A03□ | X7R         | 50                  | 1500pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H222K2□□A03□ | X7R         | 50                  | 2200pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H222K2□□A03□ | X7R         | 50                  | 2200pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H332K2□□A03□ | X7R         | 50                  | 3300pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H332K2□□A03□ | X7R         | 50                  | 3300pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H472K2□□A03□ | X7R         | 50                  | 4700pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |

Continued on the following page.

Continued from the preceding page.

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance  | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|--------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPER71H472K2□□A03□ | X7R         | 50                  | 4700pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H682K2□□A03□ | X7R         | 50                  | 6800pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H682K2□□A03□ | X7R         | 50                  | 6800pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H103K2□□A03□ | X7R         | 50                  | 10000pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H103K2□□A03□ | X7R         | 50                  | 10000pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H153K2□□A03□ | X7R         | 50                  | 15000pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H153K2□□A03□ | X7R         | 50                  | 15000pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H223K2□□A03□ | X7R         | 50                  | 22000pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H223K2□□A03□ | X7R         | 50                  | 22000pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H333K2□□A03□ | X7R         | 50                  | 33000pF ±10% | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H333K2□□A03□ | X7R         | 50                  | 33000pF ±10% | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H473K2□□A03□ | X7R         | 50                  | 47000pF ±10% | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H473K2□□A03□ | X7R         | 50                  | 47000pF ±10% | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H683K2□□A03□ | X7R         | 50                  | 68000pF ±10% | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H683K2□□A03□ | X7R         | 50                  | 68000pF ±10% | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H104K2□□A03□ | X7R         | 50                  | 0.10μF ±10%  | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H104K2□□A03□ | X7R         | 50                  | 0.10μF ±10%  | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H154K2□□C03□ | X7R         | 50                  | 0.15μF ±10%  | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H154K2□□C03□ | X7R         | 50                  | 0.15μF ±10%  | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H224K2□□C03□ | X7R         | 50                  | 0.22μF ±10%  | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H224K2□□C03□ | X7R         | 50                  | 0.22μF ±10%  | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H334K2□□C03□ | X7R         | 50                  | 0.33μF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER71H334K2□□C03□ | X7R         | 50                  | 0.33μF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H474K2□□C03□ | X7R         | 50                  | 0.47μF ±10%  | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H474K2□□C03□ | X7R         | 50                  | 0.47μF ±10%  | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H684K3□□C03□ | X7R         | 50                  | 0.68μF ±10%  | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H684K3□□C03□ | X7R         | 50                  | 0.68μF ±10%  | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H105K3□□C07□ | X7R         | 50                  | 1.0μF ±10%   | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER71H105K3□□C07□ | X7R         | 50                  | 1.0μF ±10%   | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER71H155K8□□C03□ | X7R         | 50                  | 1.5μF ±10%   | 7.5 x 5.5           | 4.0              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H225K8□□C03□ | X7R         | 50                  | 2.2μF ±10%   | 7.5 x 5.5           | 4.0              | 5.0               | K1                   | M1                         | M2                         |
| RPER71H335K5□□C03□ | X7R         | 50                  | 3.3μF ±10%   | 7.5 x 7.5           | 5.0              | 5.0               | B1                   | E1                         | E2                         |
| RPER71H475K5□□C03□ | X7R         | 50                  | 4.7μF ±10%   | 7.5 x 7.5           | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPER72A221K2□□B03□ | X7R         | 100                 | 220pF ±10%   | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A221K2□□B03□ | X7R         | 100                 | 220pF ±10%   | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A331K2□□B03□ | X7R         | 100                 | 330pF ±10%   | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A331K2□□B03□ | X7R         | 100                 | 330pF ±10%   | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A471K2□□B03□ | X7R         | 100                 | 470pF ±10%   | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A471K2□□B03□ | X7R         | 100                 | 470pF ±10%   | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A681K2□□B03□ | X7R         | 100                 | 680pF ±10%   | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A681K2□□B03□ | X7R         | 100                 | 680pF ±10%   | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A102K2□□A03□ | X7R         | 100                 | 1000pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A102K2□□A03□ | X7R         | 100                 | 1000pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A152K2□□A03□ | X7R         | 100                 | 1500pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A152K2□□A03□ | X7R         | 100                 | 1500pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A222K2□□A03□ | X7R         | 100                 | 2200pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A222K2□□A03□ | X7R         | 100                 | 2200pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A332K2□□A03□ | X7R         | 100                 | 3300pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A332K2□□A03□ | X7R         | 100                 | 3300pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A472K2□□A03□ | X7R         | 100                 | 4700pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A472K2□□A03□ | X7R         | 100                 | 4700pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A682K2□□A03□ | X7R         | 100                 | 6800pF ±10%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A682K2□□A03□ | X7R         | 100                 | 6800pF ±10%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A103K2□□A03□ | X7R         | 100                 | 10000pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A103K2□□A03□ | X7R         | 100                 | 10000pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A153K2□□A03□ | X7R         | 100                 | 15000pF ±10% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPER72A153K2□□A03□ | X7R         | 100                 | 15000pF ±10% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |

Continued on the following page. ➤

Continued from the preceding page.

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance  | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|--------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPER72A223K2□□A03□ | X7R         | 100                 | 22000pF ±10% | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER72A223K2□□A03□ | X7R         | 100                 | 22000pF ±10% | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER72A333K2□□C03□ | X7R         | 100                 | 33000pF ±10% | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER72A333K2□□C03□ | X7R         | 100                 | 33000pF ±10% | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER72A473K3□□C07□ | X7R         | 100                 | 47000pF ±10% | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER72A473K3□□C07□ | X7R         | 100                 | 47000pF ±10% | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER72A683K3□□C07□ | X7R         | 100                 | 68000pF ±10% | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER72A683K3□□C07□ | X7R         | 100                 | 68000pF ±10% | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER72A104K3□□C07□ | X7R         | 100                 | 0.10μF ±10%  | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPER72A104K3□□C07□ | X7R         | 100                 | 0.10μF ±10%  | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPER72A154K8□□C03□ | X7R         | 100                 | 0.15μF ±10%  | 7.5 x 5.5           | 4.0              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A224K8□□C03□ | X7R         | 100                 | 0.22μF ±10%  | 7.5 x 5.5           | 4.0              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A334K5□□C03□ | X7R         | 100                 | 0.33μF ±10%  | 7.5 x 7.5           | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPER72A474K8□□C03□ | X7R         | 100                 | 0.47μF ±10%  | 7.5 x 5.5           | 4.0              | 5.0               | K1                   | M1                         | M2                         |
| RPER72A684K6□□F14□ | X7R         | 100                 | 0.68μF ±10%  | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPER72A105K5□□C03□ | X7R         | 100                 | 1.0μF ±10%   | 7.5 x 7.5           | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPER72A155K7□□F03□ | X7R         | 100                 | 1.5μF ±10%   | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |
| RPER72A225K7□□F03□ | X7R         | 100                 | 2.2μF ±10%   | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |

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, Z5U Characteristics

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance  | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|--------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPEE41E105M3□□C03□ | Z5U         | 25                  | 1.0μF ±20%   | 5.0 x 4.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41E105M3□□C03□ | Z5U         | 25                  | 1.0μF ±20%   | 5.0 x 4.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H102M2□□A03□ | Z5U         | 50                  | 1000pF ±20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H102M2□□A03□ | Z5U         | 50                  | 1000pF ±20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H222M2□□A03□ | Z5U         | 50                  | 2200pF ±20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H222M2□□A03□ | Z5U         | 50                  | 2200pF ±20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H472M2□□A03□ | Z5U         | 50                  | 4700pF ±20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H472M2□□A03□ | Z5U         | 50                  | 4700pF ±20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H103M2□□A03□ | Z5U         | 50                  | 10000pF ±20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H103M2□□A03□ | Z5U         | 50                  | 10000pF ±20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H223M2□□A03□ | Z5U         | 50                  | 22000pF ±20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H223M2□□A03□ | Z5U         | 50                  | 22000pF ±20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H473M2□□A03□ | Z5U         | 50                  | 47000pF ±20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H473M2□□A03□ | Z5U         | 50                  | 47000pF ±20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H104M2□□A03□ | Z5U         | 50                  | 0.10μF ±20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H104M2□□A03□ | Z5U         | 50                  | 0.10μF ±20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H224M3□□C03□ | Z5U         | 50                  | 0.22μF ±20%  | 5.0 x 4.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H224M3□□C03□ | Z5U         | 50                  | 0.22μF ±20%  | 5.0 x 4.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H474M3□□C03□ | Z5U         | 50                  | 0.47μF ±20%  | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPEE41H474M3□□C03□ | Z5U         | 50                  | 0.47μF ±20%  | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H105M4□□E12□ | Z5U         | 50                  | 1.0μF ±20%   | 7.5 x 5.0           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPEE41H225M6□□F14□ | Z5U         | 50                  | 2.2μF ±20%   | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPEE41H475M7□□F03□ | Z5U         | 50                  | 4.7μF ±20%   | 12.5 x 12.5         | 5.0              | 10.0              | C1                   | -                          | -                          |
| RPEE42A102M2□□B03□ | Z5U         | 100                 | 1000pF ±20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE42A102M2□□B03□ | Z5U         | 100                 | 1000pF ±20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE42A222M2□□B03□ | Z5U         | 100                 | 2200pF ±20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE42A222M2□□B03□ | Z5U         | 100                 | 2200pF ±20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE42A472M2□□B03□ | Z5U         | 100                 | 4700pF ±20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE42A472M2□□B03□ | Z5U         | 100                 | 4700pF ±20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE42A103M2□□B03□ | Z5U         | 100                 | 10000pF ±20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE42A103M2□□B03□ | Z5U         | 100                 | 10000pF ±20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |

Continued on the following page.

Continued from the preceding page.

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance  | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|--------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPEE42A223M2□□D03□ | Z5U         | 100                 | 22000pF ±20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE42A223M2□□D03□ | Z5U         | 100                 | 22000pF ±20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE42A473M3□□D03□ | Z5U         | 100                 | 47000pF ±20% | 5.0 x 4.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEE42A473M3□□D03□ | Z5U         | 100                 | 47000pF ±20% | 5.0 x 4.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEE42A104M3□□C03□ | Z5U         | 100                 | 0.10μF ±20%  | 5.0 x 4.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPEE42A104M3□□C03□ | Z5U         | 100                 | 0.10μF ±20%  | 5.0 x 4.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |

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, Y5V Characteristics

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance      | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) | Lead Style Code Bulk | Lead Style Code Taping (1) | Lead Style Code Taping (2) |
|--------------------|-------------|---------------------|------------------|---------------------|------------------|-------------------|----------------------|----------------------------|----------------------------|
| RPEF51E105Z3□□C03□ | Y5V         | 25                  | 1.0μF +80/-20%   | 5.0 x 4.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51E105Z3□□C03□ | Y5V         | 25                  | 1.0μF +80/-20%   | 5.0 x 4.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H102Z2□□A03□ | Y5V         | 50                  | 1000pF +80/-20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H102Z2□□A03□ | Y5V         | 50                  | 1000pF +80/-20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H222Z2□□A03□ | Y5V         | 50                  | 2200pF +80/-20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H222Z2□□A03□ | Y5V         | 50                  | 2200pF +80/-20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H472Z2□□A03□ | Y5V         | 50                  | 4700pF +80/-20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H472Z2□□A03□ | Y5V         | 50                  | 4700pF +80/-20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H103Z2□□A03□ | Y5V         | 50                  | 10000pF +80/-20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H103Z2□□A03□ | Y5V         | 50                  | 10000pF +80/-20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H223Z2□□A03□ | Y5V         | 50                  | 22000pF +80/-20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H223Z2□□A03□ | Y5V         | 50                  | 22000pF +80/-20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H473Z2□□A03□ | Y5V         | 50                  | 47000pF +80/-20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H473Z2□□A03□ | Y5V         | 50                  | 47000pF +80/-20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H104Z2□□A03□ | Y5V         | 50                  | 0.10μF +80/-20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H104Z2□□A03□ | Y5V         | 50                  | 0.10μF +80/-20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H224Z2□□A03□ | Y5V         | 50                  | 0.22μF +80/-20%  | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H224Z2□□A03□ | Y5V         | 50                  | 0.22μF +80/-20%  | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H474Z2□□C03□ | Y5V         | 50                  | 0.47μF +80/-20%  | 5.0 x 3.5           | 3.15             | 2.5               | P1                   | S1                         | S2                         |
| RPEF51H474Z2□□C03□ | Y5V         | 50                  | 0.47μF +80/-20%  | 5.0 x 3.5           | 3.15             | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H105Z4□□E12□ | Y5V         | 50                  | 1.0μF +80/-20%   | 7.5 x 5.0           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF51H225Z6□□F14□ | Y5V         | 50                  | 2.2μF +80/-20%   | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPEF51H475Z6□□F03□ | Y5V         | 50                  | 4.7μF +80/-20%   | 10.0 x 10.0         | 4.0              | 5.0               | B1                   | E1                         | E2                         |
| RPEF52A102Z2□□B03□ | Y5V         | 100                 | 1000pF +80/-20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF52A102Z2□□B03□ | Y5V         | 100                 | 1000pF +80/-20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF52A222Z2□□B03□ | Y5V         | 100                 | 2200pF +80/-20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF52A222Z2□□B03□ | Y5V         | 100                 | 2200pF +80/-20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF52A472Z2□□B03□ | Y5V         | 100                 | 4700pF +80/-20%  | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF52A472Z2□□B03□ | Y5V         | 100                 | 4700pF +80/-20%  | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF52A103Z2□□B03□ | Y5V         | 100                 | 10000pF +80/-20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF52A103Z2□□B03□ | Y5V         | 100                 | 10000pF +80/-20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF52A223Z2□□D03□ | Y5V         | 100                 | 22000pF +80/-20% | 5.0 x 3.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF52A223Z2□□D03□ | Y5V         | 100                 | 22000pF +80/-20% | 5.0 x 3.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF52A473Z3□□D03□ | Y5V         | 100                 | 47000pF +80/-20% | 5.0 x 4.5           | 2.5              | 2.5               | P1                   | S1                         | S2                         |
| RPEF52A473Z3□□D03□ | Y5V         | 100                 | 47000pF +80/-20% | 5.0 x 4.5           | 2.5              | 5.0               | K1                   | M1                         | M2                         |
| RPEF52A104Z4□□F03□ | Y5V         | 100                 | 0.10μF +80/-20%  | 7.5 x 5.0           | 2.5              | 5.0               | K1                   | M1                         | M2                         |

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)

## Small Size, Temperature Compensating Type, C0G Characteristics

| Part Number        | Temp.<br>Char. | Rated<br>Voltage<br>(Vdc) | Capacitance<br>(pF) | Dimensions<br>LxW<br>(mm) | Dimension<br>T<br>(mm) | Lead<br>Space F<br>(mm) |
|--------------------|----------------|---------------------------|---------------------|---------------------------|------------------------|-------------------------|
| RPE5C1HR50C1A1D03B | C0G            | 50                        | 0.5 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H1R0C1A1D03B | C0G            | 50                        | 1.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H2R0C1A1D03B | C0G            | 50                        | 2.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H3R0C1A1D03B | C0G            | 50                        | 3.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H4R0C1A1D03B | C0G            | 50                        | 4.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H5R0C1A1D03B | C0G            | 50                        | 5.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H6R0D1A1D03B | C0G            | 50                        | 6.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H7R0D1A1Y03B | C0G            | 50                        | 7.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H8R0D1A1Y03B | C0G            | 50                        | 8.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H9R0D1A1Y03B | C0G            | 50                        | 9.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H100J1A1Y03B | C0G            | 50                        | 10 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H120J1A1Y03B | C0G            | 50                        | 12 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H150J1A1Y03B | C0G            | 50                        | 15 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H180J1A1Y03B | C0G            | 50                        | 18 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H220J1A1Y03B | C0G            | 50                        | 22 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H270J1A1Y03B | C0G            | 50                        | 27 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H330J1A1Y03B | C0G            | 50                        | 33 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H390J1A1Y03B | C0G            | 50                        | 39 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H470J1A1Y03B | C0G            | 50                        | 47 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H560J1A1Y03B | C0G            | 50                        | 56 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H680J1A1Y03B | C0G            | 50                        | 68 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H820J1A1Y03B | C0G            | 50                        | 82 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H101J1A1C03B | C0G            | 50                        | 100 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H121J1A1C03B | C0G            | 50                        | 120 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H151J1A1C03B | C0G            | 50                        | 150 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H181J1A1C03B | C0G            | 50                        | 180 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H221J1A1C03B | C0G            | 50                        | 220 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H271J1A1C03B | C0G            | 50                        | 270 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H331J1A1C03B | C0G            | 50                        | 330 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H391J1A1C03B | C0G            | 50                        | 390 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H471J1A1C03B | C0G            | 50                        | 470 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H561J1A1C03B | C0G            | 50                        | 560 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H681J1A1C03B | C0G            | 50                        | 680 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H821J1A1C03B | C0G            | 50                        | 820 ±5%             | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H102J1A1C03B | C0G            | 50                        | 1000 ±5%            | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H122J1A1C03B | C0G            | 50                        | 1200 ±5%            | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H152J1A1C03B | C0G            | 50                        | 1500 ±5%            | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H182J1A1D03B | C0G            | 50                        | 1800 ±5%            | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C1H222J1A1D03B | C0G            | 50                        | 2200 ±5%            | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A1R0C1A1D03B | C0G            | 100                       | 1.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A2R0C1A1D03B | C0G            | 100                       | 2.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A3R0C1A1D03B | C0G            | 100                       | 3.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A4R0C1A1D03B | C0G            | 100                       | 4.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A5R0C1A1D03B | C0G            | 100                       | 5.0 ±0.25pF         | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A6R0D1A1D03B | C0G            | 100                       | 6.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A7R0D1A1Y03B | C0G            | 100                       | 7.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A8R0D1A1Y03B | C0G            | 100                       | 8.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A9R0D1A1Y03B | C0G            | 100                       | 9.0 ±0.5pF          | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A100J1A1Y03B | C0G            | 100                       | 10 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A120J1A1Y03B | C0G            | 100                       | 12 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A150J1A1Y03B | C0G            | 100                       | 15 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A180J1A1Y03B | C0G            | 100                       | 18 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A220J1A1Y03B | C0G            | 100                       | 22 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |
| RPE5C2A270J1A1Y03B | C0G            | 100                       | 27 ±5%              | 3.5 x 3.0                 | 2.5                    | 2.5                     |

Continued on the following page. 



Continued from the preceding page.

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance (pF) | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) |
|--------------------|-------------|---------------------|------------------|---------------------|------------------|-------------------|
| RPE5C2A330J1A1Y03B | C0G         | 100                 | 33 ±5%           | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A390J1A1Y03B | C0G         | 100                 | 39 ±5%           | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A470J1A1Y03B | C0G         | 100                 | 47 ±5%           | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A560J1A1Y03B | C0G         | 100                 | 56 ±5%           | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A680J1A1Y03B | C0G         | 100                 | 68 ±5%           | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A820J1A1Y03B | C0G         | 100                 | 82 ±5%           | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A101J1A1Y03B | C0G         | 100                 | 100 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A121J1A1Y03B | C0G         | 100                 | 120 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A151J1A1Y03B | C0G         | 100                 | 150 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A181J1A1Y03B | C0G         | 100                 | 180 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A221J1A1Y03B | C0G         | 100                 | 220 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A271J1A1Y03B | C0G         | 100                 | 270 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A331J1A1Y03B | C0G         | 100                 | 330 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A391J1A1Y03B | C0G         | 100                 | 390 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A471J1A1Y03B | C0G         | 100                 | 470 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A561J1A1D03B | C0G         | 100                 | 560 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A681J1A1D03B | C0G         | 100                 | 680 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A821J1A1D03B | C0G         | 100                 | 820 ±5%          | 3.5 x 3.0           | 2.5              | 2.5               |
| RPE5C2A102J1A1D03B | C0G         | 100                 | 1000 ±5%         | 3.5 x 3.0           | 2.5              | 2.5               |

### Small Size, High Dielectric Constant Type, X7R Characteristics

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance  | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) |
|--------------------|-------------|---------------------|--------------|---------------------|------------------|-------------------|
| RPER71H221K1A1C03B | X7R         | 50                  | 220pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H331K1A1C03B | X7R         | 50                  | 330pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H471K1A1C03B | X7R         | 50                  | 470pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H681K1A1C03B | X7R         | 50                  | 680pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H102K1A1C03B | X7R         | 50                  | 1000pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H152K1A1C03B | X7R         | 50                  | 1500pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H222K1A1C03B | X7R         | 50                  | 2200pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H332K1A1C03B | X7R         | 50                  | 3300pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H472K1A1C03B | X7R         | 50                  | 4700pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H682K1A1C03B | X7R         | 50                  | 6800pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H103K1A1C03B | X7R         | 50                  | 10000pF ±10% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H153K1A1C03B | X7R         | 50                  | 15000pF ±10% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H223K1A1C03B | X7R         | 50                  | 22000pF ±10% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H333K1A1C03B | X7R         | 50                  | 33000pF ±10% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H473K1A1C03B | X7R         | 50                  | 47000pF ±10% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H683K1A1C03B | X7R         | 50                  | 68000pF ±10% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER71H104K1A1C03B | X7R         | 50                  | 0.10μF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A221K1A1D03B | X7R         | 100                 | 220pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A331K1A1D03B | X7R         | 100                 | 330pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A471K1A1D03B | X7R         | 100                 | 470pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A681K1A1D03B | X7R         | 100                 | 680pF ±10%   | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A102K1A1C03B | X7R         | 100                 | 1000pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A152K1A1C03B | X7R         | 100                 | 1500pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A222K1A1C03B | X7R         | 100                 | 2200pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A332K1A1C03B | X7R         | 100                 | 3300pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A472K1A1C03B | X7R         | 100                 | 4700pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A682K1A1C03B | X7R         | 100                 | 6800pF ±10%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPER72A103K1A1C03B | X7R         | 100                 | 10000pF ±10% | 3.5 x 3.0           | 2.5              | 2.5               |

### Small Size, High Dielectric Constant Type, Z5U Characteristics

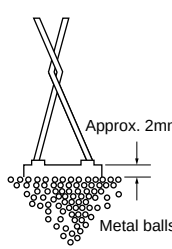
| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance  | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) |
|--------------------|-------------|---------------------|--------------|---------------------|------------------|-------------------|
| RPEE41H102M1A1C03B | Z5U         | 50                  | 1000pF ±20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE41H222M1A1C03B | Z5U         | 50                  | 2200pF ±20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE41H472M1A1C03B | Z5U         | 50                  | 4700pF ±20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE41H103M1A1C03B | Z5U         | 50                  | 10000pF ±20% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE41H223M1A1C03B | Z5U         | 50                  | 22000pF ±20% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE41H473M1A1C03B | Z5U         | 50                  | 47000pF ±20% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE41H104M1A1C03B | Z5U         | 50                  | 0.10μF ±20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE42A102M1A1D03B | Z5U         | 100                 | 1000pF ±20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE42A222M1A1D03B | Z5U         | 100                 | 2200pF ±20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE42A472M1A1D03B | Z5U         | 100                 | 4700pF ±20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEE42A103M1A1D03B | Z5U         | 100                 | 10000pF ±20% | 3.5 x 3.0           | 2.5              | 2.5               |

### Small Size, High Dielectric Constant Type, Y5V Characteristics

| Part Number        | Temp. Char. | Rated Voltage (Vdc) | Capacitance      | Dimensions LxW (mm) | Dimension T (mm) | Lead Space F (mm) |
|--------------------|-------------|---------------------|------------------|---------------------|------------------|-------------------|
| RPEF51H102Z1A1C03B | Y5V         | 50                  | 1000pF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF51H222Z1A1C03B | Y5V         | 50                  | 2200pF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF51H472Z1A1C03B | Y5V         | 50                  | 4700pF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF51H103Z1A1C03B | Y5V         | 50                  | 10000pF +80/-20% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF51H223Z1A1C03B | Y5V         | 50                  | 22000pF +80/-20% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF51H473Z1A1C03B | Y5V         | 50                  | 47000pF +80/-20% | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF51H104Z1A1C03B | Y5V         | 50                  | 0.10μF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF51H224Z1A1C03B | Y5V         | 50                  | 0.22μF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF52A102Z1A1D03B | Y5V         | 100                 | 1000pF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF52A222Z1A1D03B | Y5V         | 100                 | 2200pF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF52A472Z1A1D03B | Y5V         | 100                 | 4700pF +80/-20%  | 3.5 x 3.0           | 2.5              | 2.5               |
| RPEF52A103Z1A1D03B | Y5V         | 100                 | 10000pF +80/-20% | 3.5 x 3.0           | 2.5              | 2.5               |



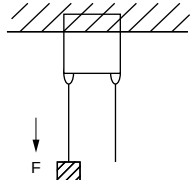
## Specifications and Test Methods

| No.                     | Item                                          |                                       | Specifications                                                                  |                                                                                                                                                                                | Test Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
|-------------------------|-----------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------|---------------------------------------|------|-----------|----------|----------|----------|---------|----------------------|-------------------|----------------------|
|                         |                                               |                                       | Temperature Compensating Type                                                   | High Dielectric Constant Type                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 1                       | Operating Temperature Range                   |                                       | -55 to +125°C                                                                   | Char. X7R : -55 to +125°C<br>Char. Z5U : +10 to + 85°C<br>Char. Y5V : -30 to + 85°C                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 2                       | Rated Voltage                                 |                                       | See previous pages                                                              |                                                                                                                                                                                | The rated voltage is defined as the maximum voltage which may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V <sup>P-P</sup> or V <sup>O-P</sup> , whichever is larger, should be maintained within the rated voltage range.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 3                       | Appearance                                    |                                       | No defects or abnormalities                                                     |                                                                                                                                                                                | Visual inspection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 4                       | Dimension and Marking                         |                                       | See previous pages                                                              |                                                                                                                                                                                | Visual inspection, Vernier Caliper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 5                       | Dielectric Strength                           | Between Terminals                     | No defects or abnormalities                                                     |                                                                                                                                                                                | The capacitors should not be damaged when DC voltages of *300% of the rated voltage are applied between the terminals for 1 to 5 sec. (Charge/Discharge current ≤ 50mA)<br>* 250% for char. X7R, Z5U, Y5V<br><br>The capacitor is placed in a container with metal balls of 1mm diameter so that each terminal, short-circuited, is kept approximately 2mm from the balls as shown in the figure, and 250% of the rated DC voltage is impressed for 1 to 5 sec. between capacitor terminals and metal balls. (Charge/Discharge current ≤ 50mA)<br>                                                                                                                                                                                                                                                                                                                                                                                                               |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
|                         |                                               | Body Insulation                       | No defects or abnormalities                                                     |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 6                       | Insulation Resistance                         | Between Terminals                     | 100,000MΩ min. or 1000Ω • F min. (whichever is smaller)                         | Char. X7R : 100,000MΩ min. or 1000Ω • F min. (whichever is smaller)<br>Char. Z5U : 10,000MΩ min. or 500Ω • F min. (whichever is smaller)<br>Char. Y5V : (whichever is smaller) | The insulation resistance should be measured with a DC voltage not exceeding the rated voltage at normal temperature and humidity and within 2 min. of charging. (Charge/Discharge current ≤ 50mA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 7                       | Capacitance                                   |                                       | Within the specified tolerance                                                  |                                                                                                                                                                                | The capacitance, Q/D.F. should be measured at 25°C at the frequency and voltage shown in the table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 8                       | Q/Dissipation Factor (D.F.)                   |                                       | 30pF min. : Q ≥ 1000<br>30pF max. : Q ≥ 400+20C<br>C : Nominal capacitance (pF) | Char. X7R } : 0.025 max.<br>Char. Z5U }<br>Char. Y5V : 0.05 max.                                                                                                               | <table><tr><th>Char.<br/>Item</th><th>C0G<br/>(1000pF and below)</th><th>C0G<br/>(more than 1000pF)<br/>X7R, Y5V</th><th>Z5U</th></tr><tr><td>Frequency</td><td>1±0.1MHz</td><td>1±0.1kHz</td><td>1±0.1kHz</td></tr><tr><td>Voltage</td><td>AC0.5 to 5V (r.m.s.)</td><td>AC1±0.2V (r.m.s.)</td><td>AC0.5±0.05V (r.m.s.)</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Char.<br>Item | C0G<br>(1000pF and below) | C0G<br>(more than 1000pF)<br>X7R, Y5V | Z5U  | Frequency | 1±0.1MHz | 1±0.1kHz | 1±0.1kHz | Voltage | AC0.5 to 5V (r.m.s.) | AC1±0.2V (r.m.s.) | AC0.5±0.05V (r.m.s.) |
| Char.<br>Item           | C0G<br>(1000pF and below)                     | C0G<br>(more than 1000pF)<br>X7R, Y5V | Z5U                                                                             |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| Frequency               | 1±0.1MHz                                      | 1±0.1kHz                              | 1±0.1kHz                                                                        |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| Voltage                 | AC0.5 to 5V (r.m.s.)                          | AC1±0.2V (r.m.s.)                     | AC0.5±0.05V (r.m.s.)                                                            |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 9                       | Capacitance Temperature Characteristics       | Capacitance Change                    | Within the specified tolerance (Table A)                                        | Within the specified tolerance (Table B)                                                                                                                                       | The capacitance change should be measured after 5 min at each specified temperature stage.<br>(1) Temperature Compensating Type<br>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 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.<br><table><tr><th>Step</th><th>Temperature (°C)</th></tr><tr><td>1</td><td>25±2</td></tr><tr><td>2</td><td>-55±3</td></tr><tr><td>3</td><td>25±2</td></tr><tr><td>4</td><td>125±3</td></tr><tr><td>5</td><td>25±2</td></tr></table><br>(2) High Dielectric Constant Type<br>The ranges of capacitance change compared with the 25°C value over the temperature ranges shown in the Table B should be within the specified ranges. | Step          | Temperature (°C)          | 1                                     | 25±2 | 2         | -55±3    | 3        | 25±2     | 4       | 125±3                | 5                 | 25±2                 |
|                         |                                               | Step                                  | Temperature (°C)                                                                |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
|                         |                                               | 1                                     | 25±2                                                                            |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 2                       | -55±3                                         |                                       |                                                                                 |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 3                       | 25±2                                          |                                       |                                                                                 |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 4                       | 125±3                                         |                                       |                                                                                 |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| 5                       | 25±2                                          |                                       |                                                                                 |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| Temperature Coefficient | Within the specified tolerance (Table A)      |                                       |                                                                                 |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |
| Capacitance Drift       | Within ±0.2% or ±0.05pF (whichever is larger) |                                       |                                                                                 |                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                           |                                       |      |           |          |          |          |         |                      |                   |                      |

Continued on the following page. 

## Specifications and Test Methods

Continued from the preceding page.

| No. | Item                            |                                         | Specifications                                                                                                                               |                                                                                                                                           | Test Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|---------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                 |                                         | Temperature Compensating Type                                                                                                                | High Dielectric Constant Type                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 10  | Terminal Strength               | Tensile Strength                        | Termination not 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 sec.<br><br>* 5N for L3.5 x W3.0 (mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|     |                                 | Bending Strength                        | Termination not to be broken or loosened                                                                                                     |                                                                                                                                           | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 11  | Vibration Resistance            | Appearance                              | No defects or abnormalities                                                                                                                  |                                                                                                                                           | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|     |                                 | Capacitance                             | Within the specified tolerance                                                                                                               |                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|     |                                 | Q/D.F.                                  | 30pF min. : Q ≥ 1000<br>30pF max. : Q ≥ 400+20C<br>C : Nominal capacitance (pF)                                                              | Char. X7R } : 0.025 max.<br>Char. Z5U }<br>Char. Y5V : 0.05 max.                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 12  | Solderability of Leads          |                                         | Solder is deposited on unintermittently immersed portion in axial direction covering 3/4 or more in circumferential direction of lead wires. |                                                                                                                                           | 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 (JIS-H-4341, H63A) of 235±5°C for 2±0.5 sec. In both cases the depth of dipping is up to about 1.5mm to 2mm from the terminal body.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 13  | Resistance to Soldering Heat    | Appearance                              | No defects or abnormalities                                                                                                                  |                                                                                                                                           | The lead wire is immersed in the melted solder (JIS-H-4341, H63A) 1.5mm to 2mm from the main body at 270±5°C for 3±0.5 sec. (L3.5 x W3.0 (mm) type) or 350±10°C for 3.5±0.5 sec. (all other types). The specified items are measured after 24±2 hrs. (temperature compensating type) or 48±4 hrs. (high dielectric type).<br><br>• Initial measurement for high dielectric constant type<br><br>The capacitors are heat treated for 1 hr. at 150± <sub>10</sub> <sup>0</sup> °C, allowed to set at room temperature for 48±4 hrs., and given an initial measurement.                                                                                                                                                                                                                                                                                                                                                                          |
|     |                                 | Capacitance Change                      | Within ±2.5% or ±0.25pF (whichever is larger)                                                                                                | Char. X7R : Within ±7.5%<br>Char. Z5U } : Within ±20%<br>Char. Y5V }                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|     |                                 | Dielectric Strength (Between Terminals) | No defects                                                                                                                                   |                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 14  | Temperature and Immersion Cycle | Appearance                              | No defects or abnormalities                                                                                                                  |                                                                                                                                           | First, repeat the following temperature/time cycle 5 times :<br>lowest operating temperature ±3°C/30±3 min.<br>» ordinary temperature/3 min. max.<br>» highest operating temperature ±3°C/30±3 min.<br>» ordinary temperature/3 min. max.<br>Next, repeat twice the successive cycles of immersion, each cycle consisting of immersion in a fresh water at 65± <sub>5</sub> <sup>0</sup> °C for 15 min. and immersion in a saturated aqueous solution of salt at 0±3°C for 15 min.<br>The capacitor is then promptly washed in running water, dried with a drying cloth, and allowed to sit at room temperature for 24±2 hrs. (temperature compensating type) or 48±4 hrs. (high dielectric type).<br><br>• Initial measurement for high dielectric constant type<br><br>The capacitors are heat treated for 1 hr. at 150± <sub>10</sub> <sup>0</sup> °C, allowed to sit at room temperature for 48±4 hrs., and given an initial measurement. |
|     |                                 | Capacitance Change                      | Within ±5% or ±0.5pF (whichever is larger)                                                                                                   | Char. X7R : Within ±12.5%<br>Char. Z5U } : Within ±30%<br>Char. Y5V }                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|     |                                 | Q/D.F.                                  | 30pF min. : Q ≥ 350<br>10pF to 30pF : Q ≥ 275+ $\frac{5}{2}$ C<br>10pF max. : Q ≥ 200+10C<br>C : Nominal capacitance (pF)                    | Char. X7R : 0.05 max.<br>Char. Z5U } : 0.075 max.<br>Char. Y5V }                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|     |                                 | Insulation Resistance                   | 10000MΩ or 500Ω • F min. (whichever is smaller)                                                                                              | Char. X7R : 10000MΩ or 500Ω • F min. (whichever is smaller)<br>Char. Z5U } : 1000MΩ or 50Ω • F min. (whichever is smaller)<br>Char. Y5V } |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|     |                                 | Dielectric Strength (Between Terminals) | No defects or abnormalities                                                                                                                  |                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

Continued on the following page. ➤

## Continued from the preceding page.

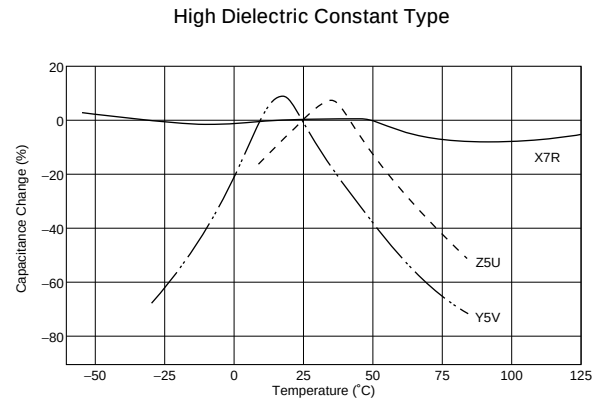
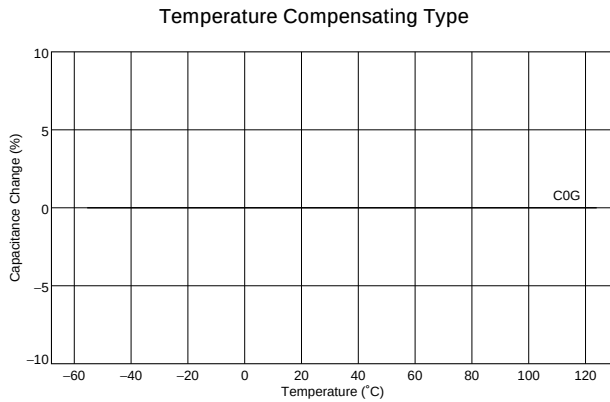
Table A

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

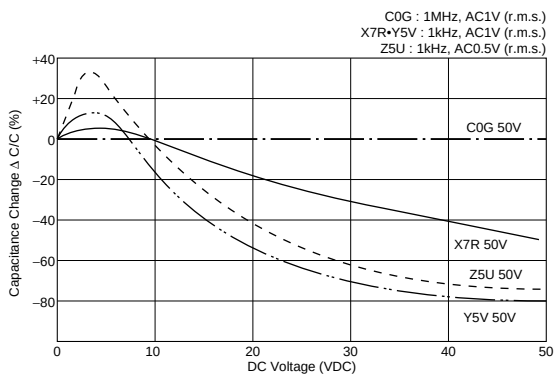
| Char. | Temp. Range   | Reference Temp. | Cap. Change Rate  |
|-------|---------------|-----------------|-------------------|
| X7R   | -55 to +125°C | 25°C            | Within $\pm 15\%$ |
| Z5U   | +10 to + 85°C |                 | Within $\pm 20\%$ |
| Y5V   | -30 to + 85°C |                 | Within $\pm 22\%$ |

## Characteristics Data (Typical Example)

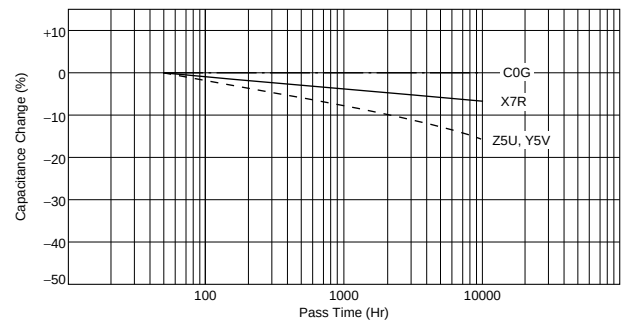
### ■ Capacitance-Temperature Characteristics



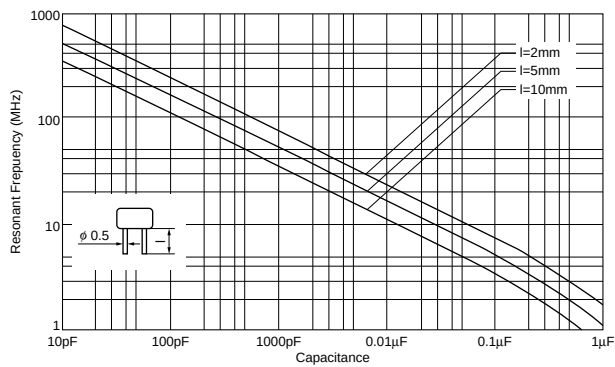
### ■ Capacitance-DC Voltage Characteristics



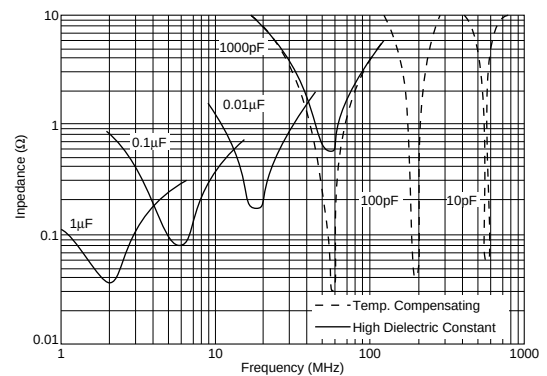
### ■ Capacitance Change-Aging



### ■ Capacitance-Resonant Frequency



### ■ Impedance-Frequency Characteristics



## Packaging

### ■ PACKAGING

Two types of packaging for epoxy coated monolithic ceramic capacitors are available.

#### 1. BULK PACKAGING

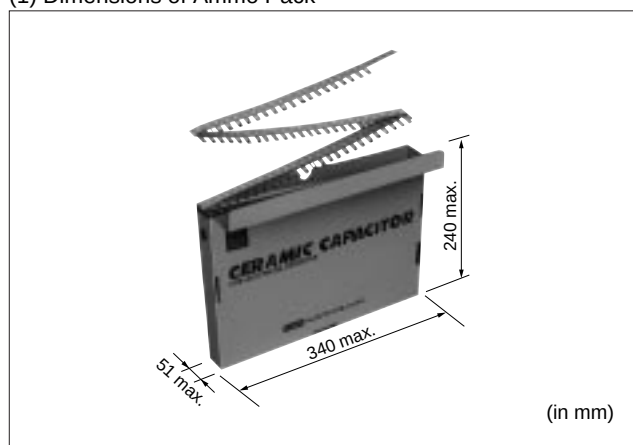
Minimum quantity\*1

| Dimensions code | Dimensions (LxW) | Minimum quantity (pcs./bag) |
|-----------------|------------------|-----------------------------|
| 1               | 3.5x3.0mm        | 500                         |
| 2               | 5.0x3.5mm        |                             |
| 3               | 5.0x4.5mm        |                             |
| 4               | 7.5x5.0mm        |                             |
| 5               | 7.5x7.5mm        |                             |
| 6               | 10.0x10.0mm      |                             |
| 8               | 7.5x5.5mm        | 100                         |
| 7               | 12.5x12.5mm      |                             |

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

#### 2. TAPE CARRIER PACKAGING

##### (1) Dimensions of Ammo Pack



##### (2) Minimum quantity\*1

| Dimensions code | Dimensions (LxW) | Minimum quantity (pcs./Ammo Pack) |
|-----------------|------------------|-----------------------------------|
| 2               | 5.0x3.5mm        | 2000                              |
| 3               | 5.0x4.5mm        |                                   |
| 4               | 7.5x5.0mm        |                                   |
| 5               | 7.5x7.5mm        | 2000*2                            |
| 8               | 7.5x5.5mm        | 1500                              |
| 6               | 10.0x10.0mm      |                                   |

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

\*2 1500 pcs. for RPER71H335K5□□C03A, RPER71H475K5□□C03A,

RPER72A334K5□□C03A, RPER72A105K5□□C03A

(Two blank columns are filled with the lead style code.)

##### (3) Marking on Ammo Pack

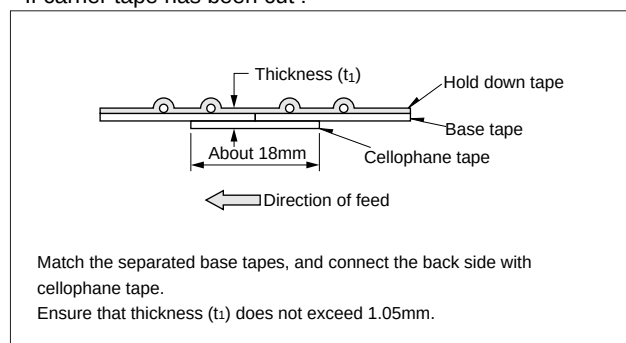
The following items are in the marking position on the side of the ammo pack.

- (a) Part Number
- (b) Quantity
- (c) Inspection No.
- (d) Manufacturer's name, or its abbreviation.
- (e) Other requirements.

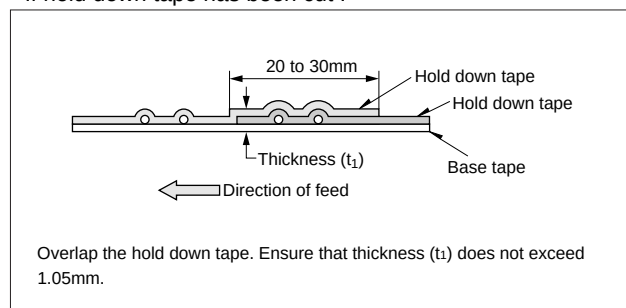
##### (4) Incidental condition of taping

Tape splicing

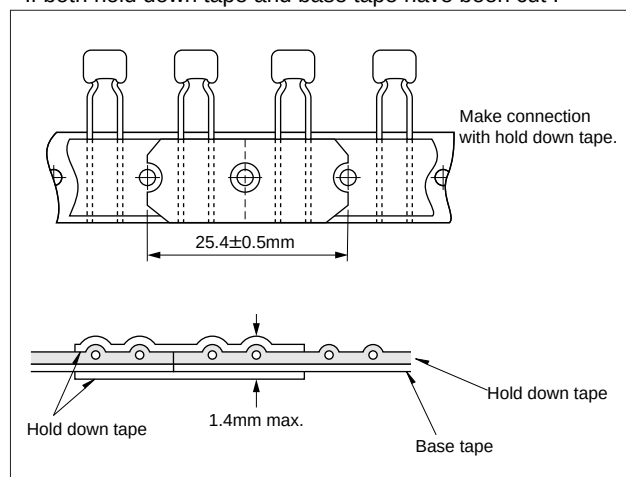
- If carrier tape has been cut :



- If hold down tape has been cut :



- If both hold down tape and base tape have been cut :



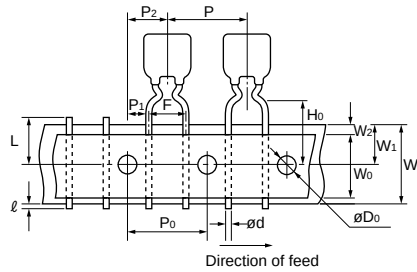
\*1 "Minimum Quantity" means the numbers of units of each delivery or order. The quantity should be an integral multiple of the "minimum quantity". (Please note that the actual delivery quantity in a package may change sometimes.)

## Packaging

Continued from the preceding page.

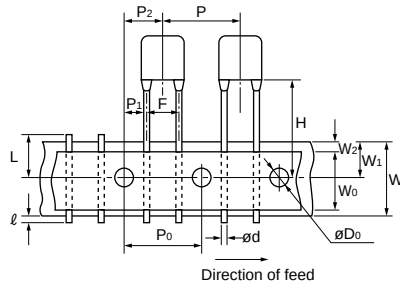
### (5) Taping dimensions

#### Inside Crimp Taping



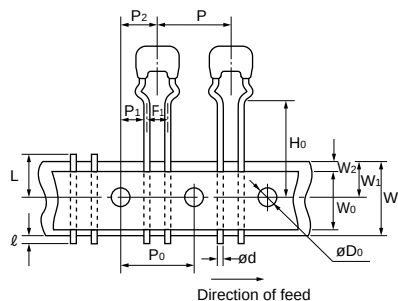
| Dimensions and Lead style code | Dimensions (LxW) |
|--------------------------------|------------------|
| 2M1                            | 5.0x3.5mm        |
| 2M2                            |                  |
| 3M1                            | 5.0x4.5mm        |
| 3M2                            |                  |
| 4M1                            | 7.5x5.0mm        |
| 4M2                            |                  |
| 8M1                            | 7.5x5.5mm        |
| 8M2                            |                  |

#### Straight Taping



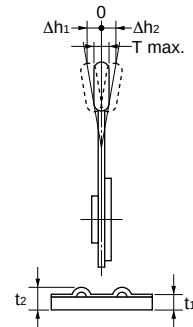
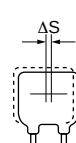
| Dimensions and Lead style code | Dimensions (LxW) |
|--------------------------------|------------------|
| 5E1                            | 7.5x7.5mm        |
| 5E2                            |                  |
| 6E1                            | 10.0x10.0mm      |
| 6E2                            |                  |

#### Outside Crimp Taping



| Dimensions and Lead style code | Dimensions (LxW) |
|--------------------------------|------------------|
| 2S1                            | 5.0x3.5mm        |
| 2S2                            |                  |
| 3S1                            | 5.0x4.5mm        |
| 3S2                            |                  |

| Item                                             | Code                                     | Dimensions (mm)                               |
|--------------------------------------------------|------------------------------------------|-----------------------------------------------|
| Pitch of Component                               | P                                        | 12.7                                          |
| Pitch of Sprocket Hole                           | P0                                       | 12.7±0.2                                      |
| Lead Spacing                                     | F1                                       | 2.5 <sup>+0.4</sup> <sub>-0.2</sub>           |
|                                                  | F                                        | 5.0 <sup>+0.6</sup> <sub>-0.2</sub>           |
| Length from Hole Center to Component Center      | P2                                       | 6.35±1.3                                      |
| Length from Hole Center to Lead                  | P1                                       | 3.85±0.7                                      |
|                                                  | P1                                       | 5.1±0.7 (S1) (S2)                             |
|                                                  |                                          | 254±1.5 Total length of components pitch X 20 |
| Body Dimension                                   | See the individual product specification |                                               |
| Deviation Along Tape, Left 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 Reference and Bottom Plane | H0                                       | 16.0±0.5 (M1) (S1)                            |
|                                                  | H0                                       | 20.0±0.5 (M2) (S2)                            |
| For Straight Lead Type                           | H                                        | 20±0.5 (E2), 17.5±0.5 (E1)                    |
| Diameter of Sprocket Hole                        | D0                                       | 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                                        | See the individual product specification      |
| Deviation Across Tape                            | Δh1                                      | 1.0 max.                                      |
|                                                  | Δh2                                      | 1.0 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                             | W0                                       | 9.5 min.                                      |
| Hold Down Tape Position                          | W2                                       | 1.5±1.5                                       |
| Coating Extension                                | See the individual product specification |                                               |





## **Caution**

### ■ **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. And 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.

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.

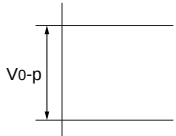
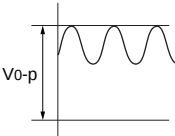
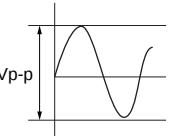
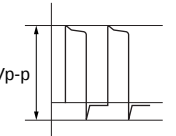
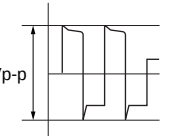
## ⚠Caution

### ■ ⚠Caution (Rating)

#### 1. Operating Voltage

When DC-rated capacitors are to be used in AC or ripple current circuits, be sure to maintain the  $V_{p-p}$  value of the applied voltage or the  $V_{o-p}$  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.

| Voltage                | DC Voltage                                                                        | DC+AC Voltage                                                                     | AC Voltage                                                                         | Pulse Voltage (1)                                                                   | Pulse Voltage (2)                                                                   |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Positional Measurement |  |  |  |  |  |

#### 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 case of "High Dielectric Constant Type Capacitors (X7R/Y5V/Z5U char.)", 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 is occurred with "Temperature Compensating Type Capacitors (C0G char.)". When measuring, use a thermocouple of small thermal capacity-K of  $\phi 0.1\text{mm}$  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

### ■ ⚠Caution (Soldering and Mounting)

#### 1. 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.

#### 3. Bonding and resin molding

Before bonding or molding this product, verify that these processes do not affect the quality of capacitor by testing the performance of a bonded or molded product in the intended equipment.  
In case of the amount of applications, 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 is damaged by the organic solvents and it may result, worst case, in a short circuit.

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

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/QS9000 Certification

### ■ Notice (Rating)

#### Capacitance change of capacitor

##### 1. In case of C0G char.

Capacitance might change a little depending on the surrounding temperature or an applied voltage.

Please contact us if you intend to use this product in a strict time constant circuit.

##### 2. In case of X7R/Y5V/Z5U 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.

So, it is not likely to be suitable for use in a time constant circuit. Please contact us if you need detailed information.

### ■ 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.

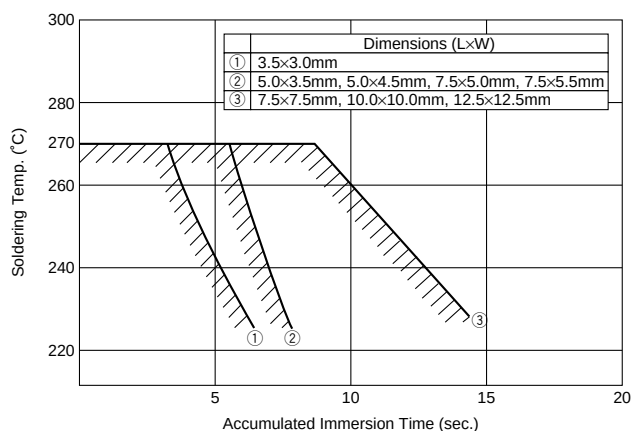
Rinsing time : 5 min. maximum.

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.

### ■ QS9000 Certifications

Manufacturing plants which produce the products in this catalog have obtained the QS9000 quality system certificate.

| Plant                                | Certified Date | Organization                   | Registration No. |
|--------------------------------------|----------------|--------------------------------|------------------|
| Iwami Murata Manufacturing Co., Ltd. | Mar. 29, '99   | Underwriters Laboratories Inc. | A7905            |

⚠Note:

1. Export Control

〈For customers outside Japan〉

Murata products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.

〈For customers in Japan〉

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 to 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.

- |                             |                                                                                                             |
|-----------------------------|-------------------------------------------------------------------------------------------------------------|
| ① Aircraft equipment        | ② Aerospace equipment                                                                                       |
| ③ Undersea equipment        | ④ Power plant equipment                                                                                     |
| ⑤ Medical equipment         | ⑥ Transportation equipment (vehicles, trains, ships, etc.)                                                  |
| ⑦ Traffic signal equipment  | ⑧ Disaster prevention / crime prevention equipment                                                          |
| ⑨ Data-processing equipment | ⑩ Application of similar complexity and/or reliability requirements to the applications listed in the above |

3. Product specifications in this catalog are as of July 2004. 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 because there is no space for detailed 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.