



# Class II Ceramic Disc Capacitors (RoHS Compliant) CDR Series

## FEATURES

- Large capacitance in small sizes
- Non linear temperature coefficient of capacitance.



## CHARACTERISTICS

| Item                         | Characteristics                                                                                                                                                                                                                                                         |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature Range  | -25°C ~ +85°C                                                                                                                                                                                                                                                           |
| Capacitance Tolerance (min.) | Within the tolerance at 1MHz, 1~3Vrms, 25°C                                                                                                                                                                                                                             |
| Working Voltage (WVDC)       | 50WV, 100WV, or 500WV                                                                                                                                                                                                                                                   |
| Insulation Resistance        | 10,000MΩ min. or 200MΩμF, whichever is less                                                                                                                                                                                                                             |
| Test Voltage                 | 2.5 x WVDC                                                                                                                                                                                                                                                              |
| Life Test                    | At 2 x WVDC @85°C for 1000 hours @ 85°C, capacitors shall meet the following: the capacitance change for Y5P will be ±10%; Z5U will be ±20%; Z5V will be ±30%; the dissipation factor for Y5P and Z5U will be ≤50x10 <sup>-3</sup> ; Z5V will be ≤75x10 <sup>-3</sup> . |
| Humidity Test                | At exposure in the ambient temperature of 40°C, and at 95% RH for 500 hours: the capacitance change for Y5P will be ±10%; Z5U will be ±20%; Z5V will be ±30%; the dissipation factor for Y5P and Z5U will be ≤50x10 <sup>-3</sup> ; Z5V will be ≤75x10 <sup>-3</sup> .  |

## PART NUMBERING SYSTEM

|        |   |   |                      |   |              |            |   |                  |           |       |           |   |                        |   |
|--------|---|---|----------------------|---|--------------|------------|---|------------------|-----------|-------|-----------|---|------------------------|---|
| 1      | 4 | 0 | 5                    | 0 | P            | 2          | - | 1                | 0         | 1     | K         | - | R                      | C |
| Series |   |   | Voltage Actual Value |   | Temp. Coeff. | Lead Space |   | 1st digit        | 2nd digit | # o's | Tolerance |   | Suffix (RoHSCompliant) |   |
|        |   |   |                      |   |              |            |   | Capacitance (pF) |           |       |           |   |                        |   |

| Temp. Coeff. | Code |
|--------------|------|
| Y5P          | P    |
| Z5U          | Z    |
| Z5V          | Q    |

| Lead Space | Code |
|------------|------|
| 2.5mm      | 2    |
| 5.0mm      | 5    |
| 9.5mm      | 9    |

| Tolerance | Code |
|-----------|------|
| ±0.25pF   | C    |
| ±5%       | J    |
| ±10%      | K    |

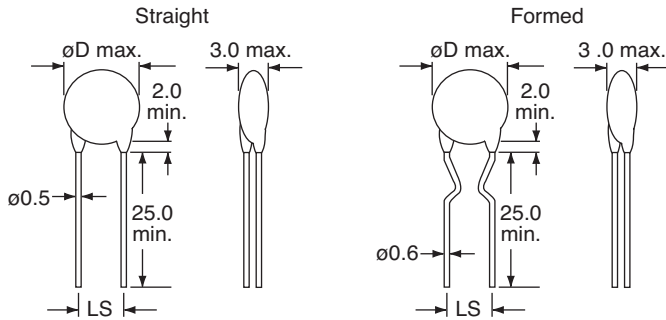
| Tolerance | Code |
|-----------|------|
| ±20%      | M    |
| ±0.5pF    | D    |
| +80/-20%  | Z    |

## TEMPERATURE COEFFICIENT CHARACTERISTICS

| Temperature Coefficient | Y5P           | Z5U           | Z5V           |
|-------------------------|---------------|---------------|---------------|
| Operating Temp. Range   | -25°C ~ +85°C | +10°C ~ +85°C | +10°C ~ +85°C |
| Capacitance Change      | ±10%          | +20%, -55%    | +30%, -80%    |

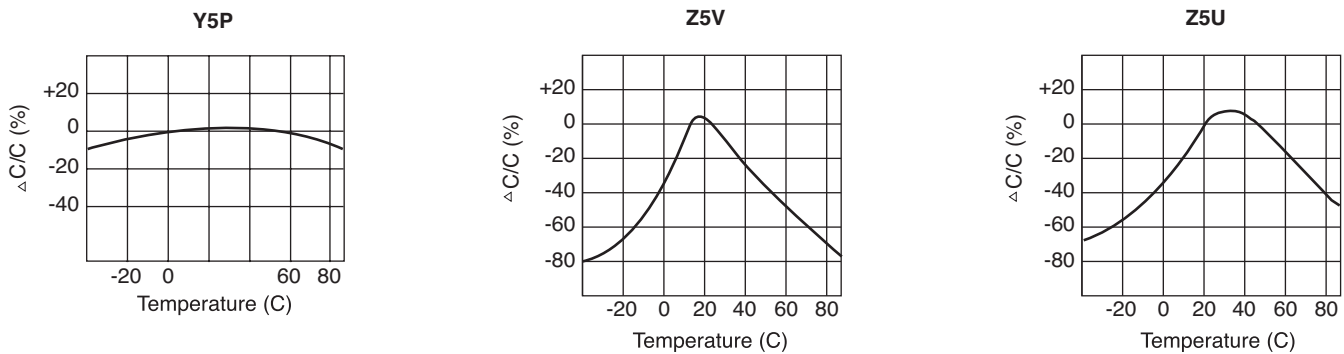
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## ■ DIMENSIONS (mm), CAPACITANCE RANGES (pF)



| Dimensions    |         | Working Voltage (WV); Temperature Coefficient; Capacitance Range (pF) |               |                 |             |             |
|---------------|---------|-----------------------------------------------------------------------|---------------|-----------------|-------------|-------------|
|               |         | 50 and 100                                                            |               |                 | 500         |             |
| $\phi D$ (mm) | LS (mm) | Y5P                                                                   | Z5U           | Z5V             | Y5P         | Z5U         |
| 5             | 2.5/5.0 | 200 ~ 2200                                                            | 1000 ~ 5000   | 1000 ~ 10000    | 150 ~ 270   | 1000 ~ 2200 |
| 6             | 2.5/5.0 | 2700 ~ 3000                                                           | 6800 ~ 8200   | - - -           | 390 ~ 1200  | 3700 ~ 3900 |
| 7.5           | 2.5/5.0 | 3300 ~ 3900                                                           | 10000         | 20000 ~ 22000   | 1500 ~ 2000 | - - -       |
| 8.5           | 2.5/5.0 | 4700 ~ 5600                                                           | - - -         | - - -           | 2200 ~ 2700 | 4700 ~ 5000 |
| 9.5           | 5.0     | 6800 ~ 8200                                                           | - - -         | - - -           | 3000 ~ 3300 | 6800 ~ 8200 |
| 10.5          | 5.0     | 10000                                                                 | 20000 ~ 22000 | - - -           | 3900        | 10000       |
| 15            | 9.5     | - - -                                                                 | - - -         | 33000 ~ 100,000 | - - -       | 22000       |

## ■ TYPICAL TEMPERATURE CHARACTERISTICS



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