

### INTRODUCTION

Single layer metalized ceramic disc with resin coating (wax impregnated) below 1KV or epoxy coated 1KV up.

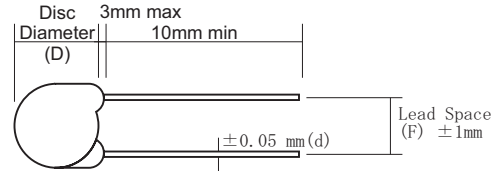
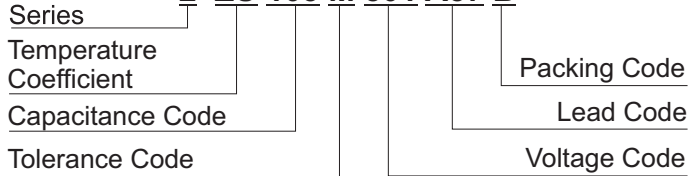
Range of values extends to much higher values than Class 1

### APPLICATION

- By-Pass & Coupling
- Frequency Discriminating Circuits where Q and capacitance stability is not of major importance.
- Filtering, Blocking & Timing

### PART NUMBER EXAMPLE

**2 ZU 103 M 501 A57 B**



### DIMENSIONS (mm) & CAPACITANCE RANGE (Reference)

(F: Standard Lead Spacing. Other lead spacing may be available upon request.)

| Thickness<br>Voltage | 4.0 mm max.              |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         | 5.0    | 6.5  | 8.0 | 14.0 |
|----------------------|--------------------------|----------|----|--------------------------|----------|----|--------------------------|----------|--------------------------|-----|--------------------------|-----|--------|---------|--------|------|-----|------|
|                      | 50V/100V                 |          |    | 500V/630V                |          |    | 1KV                      |          |                          | 2KV |                          | 3KV |        | 5KV/6KV |        | 10KV |     |      |
|                      | Y5E<br>Y5F<br>Y5P<br>Z5F | ZU<br>YU | ZV | Y5E<br>Y5F<br>Y5P<br>Z5F | ZU<br>YU | ZV | Y5E<br>Y5F<br>Y5P<br>Z5F | ZU<br>YU | Y5E<br>Y5F<br>Y5P<br>Z5F | ZU  | Y5E<br>Y5F<br>Y5P<br>Z5F | ZU  | YP     | ZU      | YP     |      |     |      |
| Cap (pf) Code        | 82 820                   |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 100 101              | D=5.5                    |          |    | D=6                      |          |    | D=6                      |          | D=6                      |     | D=6                      |     | D=8    |         | D=9    |      |     |      |
| 120 121              | F=2.5                    |          |    | F=5.0                    |          |    | F=6.35                   |          | F=6.35                   |     | F=6.35                   |     | F=6.35 |         | F=10   |      |     |      |
| 180 181              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 200 201              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 220 221              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         | D=13   |      |     |      |
| 240 241              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         | F=12.7 |      |     |      |
| 300 301              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 330 331              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 390 391              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 470 471              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     | D=10   |         | D=15   |      |     |      |
| 500 501              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     | F=10   |         | F=12.7 |      |     |      |
| 560 561              |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 680 681              |                          |          |    | D=7.5                    |          |    | D=8                      |          | D=7                      |     | D=7                      |     |        |         |        |      |     |      |
| 750 751              |                          |          |    | F=6.35                   |          |    | F=6.35                   |          | F=6.35                   |     | F=6.35                   |     |        |         |        |      |     |      |
| 820 821              |                          | D=5      |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 1000 102             |                          | F=2.5    |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 1200 122             |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 1500 152             | D=6.5                    |          |    | D=8.5                    |          |    | D=10                     |          | D=10                     |     | D=10                     |     | D=6    |         | D=12   |      |     |      |
| 1800 182             | F=5.0                    |          |    | F=6.35                   |          |    | F=6.35                   |          | F=10                     |     | F=6.35                   |     | F=6.35 |         | F=10   |      |     |      |
| 2000 202             |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 2200 222             |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 2500 252             | D=7.5                    | D=6      |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 2700 272             | F=5.0                    | F=5.0    |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 3000 302             |                          |          |    | D=10                     |          |    | D=11                     |          | D=13                     |     | D=8                      |     |        |         |        |      |     |      |
| 3300 332             |                          |          |    | F=6.35                   |          |    | F=10                     |          | F=10                     |     | F=6.35                   |     |        |         |        |      |     |      |
| 3900 392             |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 4700 472             | D=10                     |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 5600 562             | F=5.0                    |          |    | D=14                     |          |    | D=15                     |          | F=10                     |     | F=6.35                   |     |        |         |        |      |     |      |
| 6800 682             |                          | D=8      |    | F=10                     |          |    | D=12                     |          | D=10.5                   |     | D=14                     |     |        |         |        |      |     |      |
| 7500 752             | D=11.5                   | F=5.0    |    | D=15                     |          |    | F=10                     |          | F=6.35                   |     | F=10                     |     |        |         |        |      |     |      |
| 8200 822             | F=5.0                    |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 10000 103            |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 15000 153            | D=15                     | D=10     |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 20000 203            | F=5.0                    | F=5.0    |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 22000 223            |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 33000 333            | D=17                     | D=12.5   |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 47000 473            | F=10                     | F=10     |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 56000 563            |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |
| 100000 104           |                          |          |    |                          |          |    |                          |          |                          |     |                          |     |        |         |        |      |     |      |

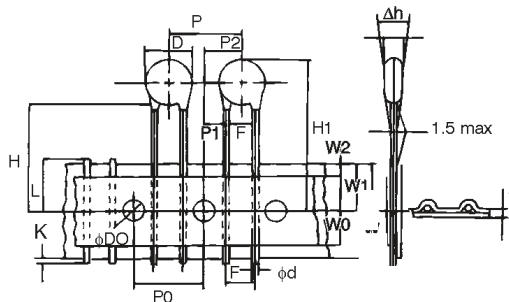
**ELECTRICAL CHARACTERISTICS**

| Technical Data                | Condition  | Specification   |
|-------------------------------|--|---|
| Capacitance                   | Measured at 1KHz<br>1.0 ~ 5.0 VRMS, 25°C           | 80pF ~ 0.1μF  |
| Operating Temperature         | X7R  | -55°C ~ +125°C  |
|                               | Y5E, Y5P   | -30°C ~ +85°C   |
|                               | Z5U, Z5V   | -10°C ~ +85°C   |
| Dissipation Factor<br>(tan δ) | X7R, Y5E, Y5P, Z5U                                 | ≤ 0.025   |
|                               | Z5V  | ≤ 0.05  |
| Insulation Resistance         | Rated Voltage at<br>25°C ± >°C and 70%<br>R.H. max | >10GΩ or 200MΩ Farad,<br>whichever is less                                      |
| Encapsulation                 | Standard 1KV and higher                            | Phenolic Wax<br>Epoxy Coating   |
| Solderability of Leads        | at least 75% is covered                            | Solder Temperature<br>250°C ± 5°C<br>Dipping: 3±0.5 sec<br>(Flur shall be used) |

**TEMPERATURE COEFFICIENT CODE**

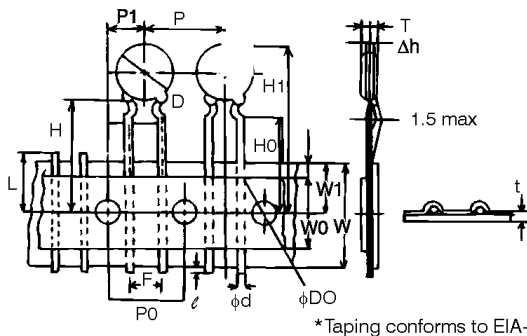
| Temperature Characteristics |          |                              |
|-----------------------------|----------|------------------------------|
| Code                        | EIA Code | Characteristics              |
| ZU                          | Z5U      | +22 to -56% +10 °C to +85°C  |
| ZV                          | Z5V      | +22 to -82% +10 °C to +85°C  |
| YE                          | Y5E      | '±4.7% -30 °C to +85°C       |
| YP                          | Y5P      | '±10% -30 °C to +85°C        |
| YU                          | Y5U      | '±22 to -56% -30 °C to +85°C |

**RADIAL STRAIGHT-LEAD ON TAPE (S56 LEAD CODE)**



| Code | Dimensions     |
|------|----------------|
| D    | 11.0 max       |
| d    | 0.6 ±0.05      |
| P    | 12.7 ±1.0      |
| P0   | 12.7 ±0.3      |
| P1   | 3.85 ±0.7      |
| P2   | 6.35 ±1.3      |
| F    | 5.0 +0.8 -0.2  |
| Δh   | 0 ±2.0         |
| W    | 18.0 +1.0 -0.5 |
| W1   | 9.0 +0.75 -0.5 |
| W2   | 3.0 max        |
| H    | 18.0 +3.0 -0   |
| H0   | 16.0 ±0.5      |
| H1   | 32.25 max      |
| K    | 1.0 max        |
| D0   | 4.0 ±0.2       |
| t    | 0.7 ±0.2       |
| L    | 11.0 max       |

**RADIAL KINK-IN ON TAPE (K56 LEAD CODE)**  
\*Most Popular



\*Taping conforms to EIA-468

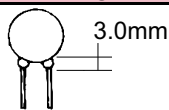
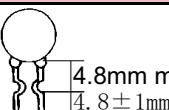


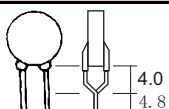
■ **TOLERANCE CODE**

| Code | Tolerance |
|------|-----------|
| C    | ±0.25pF   |
| D    | ±0.5pF    |
| F    | ±1%       |
| G    | ±2%       |
| J    | ±5%       |
| K    | ±10%      |
| M    | ±20%      |

■ **VOLTAGE CODE EXAMPLE**

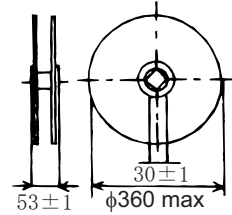
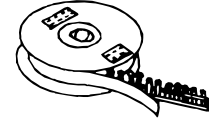
| Code | 500 | 501  | 502 | 103  |
|------|-----|------|-----|------|
| WVDC | 50V | 500V | 5KV | 10KV |

■ **LEAD CODES FOR BULK PACK (CERAMIC DISC ONLY)**

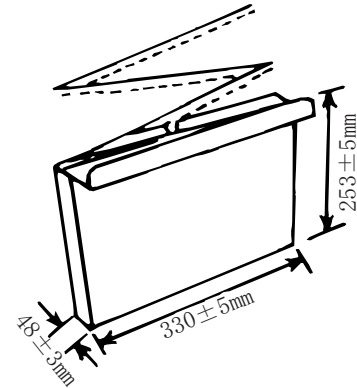
| Lead Type  |  |  |
|--|--|--|
| <b>A-Straight</b><br><br>3.0mm                            | <b>C-Kink In</b><br><br>4.8mm max<br>4.8 ± 1mm      | <b>D-Kink Out</b><br><br>4.8mm max<br>4.8 ± 1mm |
| <b>F-Special Length</b><br><br>Per Customer Specification | <b>Y-Y Formed</b><br><br>4.0 mm max<br>4.8 ± 1.0 mm | <b>S &amp; K-Taped</b><br>See taping specifications above.   |

| Lead Spacing<br>(±1.00) in mm |      | Wire dia.<br>(±0.05) in mm |      |
|-------------------------------|------|----------------------------|------|
| Code                          | F    | Code                       | dφ   |
| 2                             | 2.5  | 4                          | 0.48 |
| 5                             | 5    | 6                          | 0.6  |
| 6                             | 6.35 | 7                          | 0.65 |
| 7                             | 7.5  | 8                          | 0.8  |
| 9                             | 10.0 | 9                          | 1.0  |
| 0                             | 12.7 |                            |      |
| A                             | 15.0 |                            |      |

■ **REEL PACK (R SUFFIX)**



■ **AMMO PACK (A SUFFIX)**



■ **HOW TO MAKE THE LEAD CODE FOR CERAMIC DISC (FOR BULK PACK ONLY - B SUFFIX)**

