

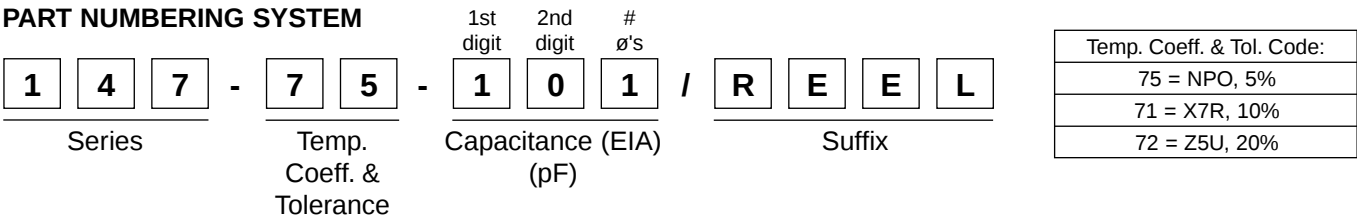
# Ceramic Axial-Lead Capacitors (Small Body Style) CA10 Series



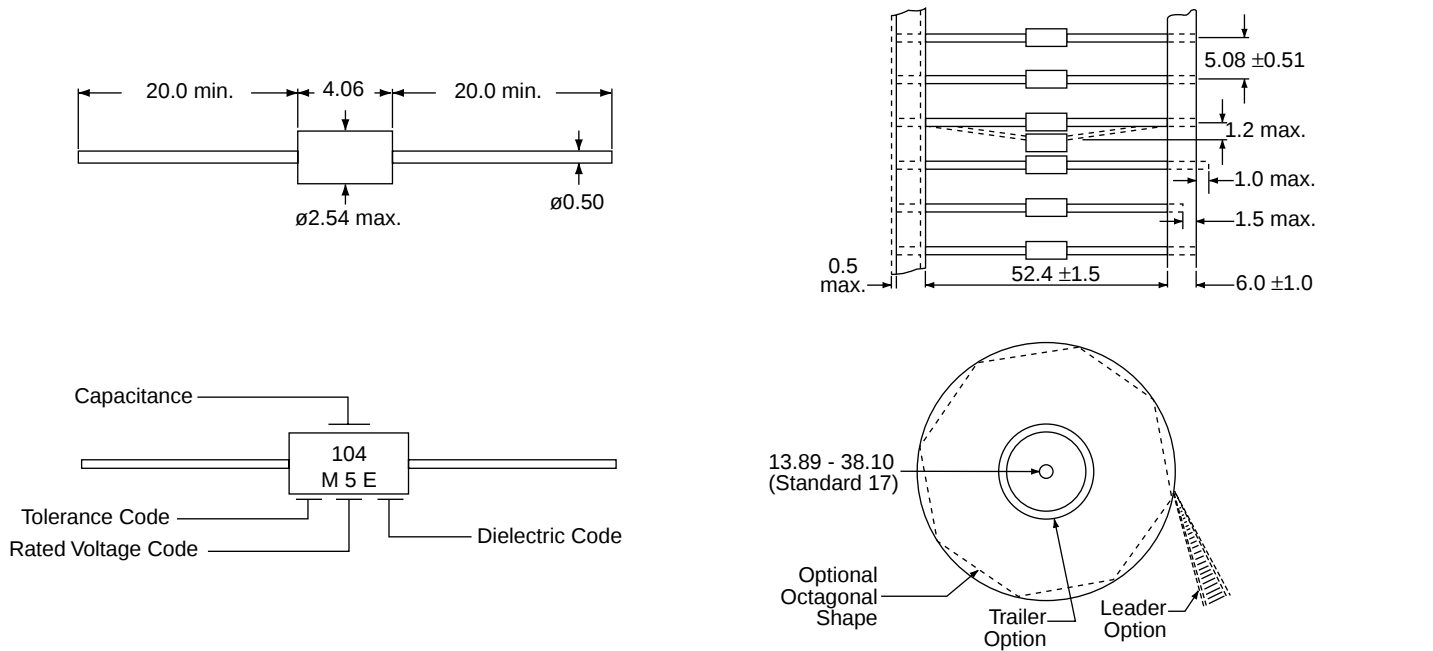
## CHARACTERISTICS

| Item                                        | Characteristics                                                                                                                                                                                                                           |                                        |                                           |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------|
|                                             | NPO                                                                                                                                                                                                                                       | X7R                                    | Z5U                                       |
| Operating Temperature Range                 | -55°C ~ +125°C                                                                                                                                                                                                                            | -55°C ~ +125°C                         | -25°C ~ +85°C                             |
| Working Voltage (WVDC)                      | 50 (other voltages available upon special order, ask for details)                                                                                                                                                                         |                                        |                                           |
| Capacitance Range                           | 10pF ~ 1200pF                                                                                                                                                                                                                             | 330pF ~ 27000pF                        | 1000pF ~ 470,000pF                        |
| Temperature Characteristics                 | >20pF is 0 ±30ppm/°C;<br>≤20pF is 0 ±120/-40ppm/°C                                                                                                                                                                                        | ΔC ±15% maximum<br>over -55°C ~ +125°C | ΔC +22/-55% maximum<br>over +10°C ~ +85°C |
| Dissipation Factor (Tan δ)                  | ≥50pF is ≤0.001;<br><50pF is ≥1.5(150/C + 7) × 10 <sup>4</sup>                                                                                                                                                                            | ≤0.025                                 | ≤0.030                                    |
| Measuring Conditions for Capacitance and DF | >1000pF is 1KHz, 1Vrms;<br>≤1000pF is 1MHz, 1Vrms                                                                                                                                                                                         | 1KHz, 1Vrms                            | 1KHz, 0.3Vrms                             |
| Capacitance Aging                           | 0                                                                                                                                                                                                                                         | 1.5% per decade hour                   | 5% per decade hour                        |
| Insulation Resistance (IR)                  | After 60 seconds charging at WV, 25°C: ≥100GΩ or ≥1,000MΩ per μF, whichever is less                                                                                                                                                       |                                        |                                           |
| Solderability Test                          | 235 ±5°C, immersion 2 ±0.5 seconds, 1.5mm ~ 2.0mm depth. At least 95% of leads should be well tinned                                                                                                                                      |                                        |                                           |
| Resistance to Soldering Heat Test           | No visible damage. NPO is ≤ ±0.5% or ±0.5pF; X7R is ≤ ±10/-5%; Z5U is ≤ ±20/-10%. Immersion in solder bath at 260 ±5°C for 10 ±1 seconds. Recovery for 24 ±2 hours.                                                                       |                                        |                                           |
| Rapid Change of Temp. Test                  | No visible damage. NPO and X7R at -55°C ~ +125°C; Z5U at -25°C ~ +85°C. Recovery for 24 ±2 hours.                                                                                                                                         |                                        |                                           |
| Life Test                                   | No visible damage. NPO ΔC/C is ≤2% or ±2pF; X7R ΔC/C is ≤ ±10%; Z5U ΔC/C is ≤ ±20%. DF is ≤1.5 x initial requirement. IR is ≥0.25 x initial requirement. 1,000 hours at minimum temperature with 1.5 WV applied. Recovery for 24 ±2 hours |                                        |                                           |
| Vibration Test                              | No visible damage. 5 cycles for 30 min. each: 10Hz ~ 2000KHz, apm. 0.75mm or 98m/sec. Total duration is 6 hours.                                                                                                                          |                                        |                                           |
| Robustness of Termination Test              | No visible damage. Visual inspection test: VAL is 10N, VB is 5N.                                                                                                                                                                          |                                        |                                           |

## PART NUMBERING SYSTEM



## DIMENSIONS (mm)



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