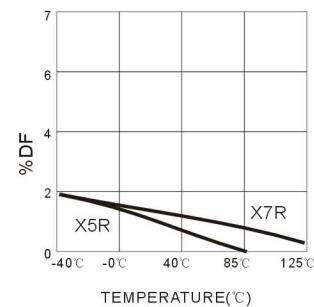
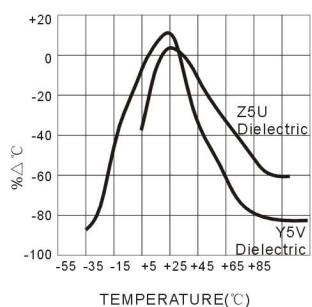
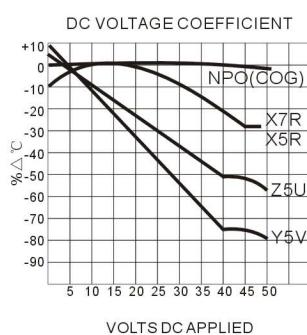
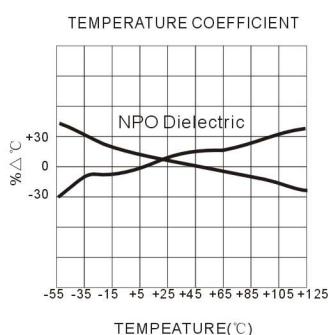


## MLC Series 積層陶瓷型電容器 (獨石電容器)

### Electrical Specifications

- Capacitance Range: 1pF to 100 $\mu$ F
- Capacitance Tolerance: (Standard)
  - NPO: F=±1% (10pF and above)---special tolerance  
G=±2% (10pF and above)---special tolerance
  - B=±0.1PF (10PF and below)---special tolerance
  - C=±0.25PF (10PF and below)---general tolerance
  - D=±0.5pF (10pF and below)---general tolerance
  - J=±5% (10pF and above)---general tolerance
  - K=±10% (5.6pF and above)---general tolerance
- X7R/X5R: J=±5%---special tolerance  
K=±10%, M=±20%---general tolerance
- Z5U, Y5V: M=±20%  
Z=+80/-20%---general tolerance
- Voltage: 16, 25, 50, 63, 100, 200, 250, 400, 500, 630, 1K 2K 3K 4K VDC
- Temperature Characteristics:
  - NPO: 0±60 ppm/C, -55°C to +125°C
  - X7R: ±15%△C, -55°C to +125°C
  - X5R: ±15%△C, -55°C to +85°C
  - Y5V: +22% to -82%△C, -25°C to +85°C
  - Z5U: +22% to -56%△C, +10°C to +85°C
- Insulation Resistance
  - NPO, 10,000 MΩ min. or 1000 Ω-Farads min.  
Whichever is less at 25°C at its voltage.
  - X7R/X5R: 3,000 MΩ min. or 500 Ω-Farads min.  
Whichever is less at 25°C at its voltage.
  - Z5U, Y5V: 1,000 MΩ min. or 100 Ω-Farads min.  
whichever is less at 25°C at its voltage.
- MECHANICAL SPECIFICATIONS
  - Cast: Conformal coated (epoxy)
  - Lead Material: Solder coated, cp-wire
  - Package Method: Bulk, Tape Ammo/Reel Package,
  - Solderability: (MIL-STD-202, Method 208)
  - Leach Resistance: Temp 250°C, 20 seconds  
immersion is Sn62

### Typical Characteristics



- STANDARD TOLERANCE
  - NPO: J.K.D (under 10PF). X7R/X5R: K.M. Y5V: Z, M. Z5U: M.
- Capacitance Test @25°C Or referred to +25°C:
  - NPO, X7R, X5R 1.0 Vrms ± 0.25 Vrms and 1 kHz; 1MHz for values below 100pF, Z5U, Y5V: 0.1 Vrms maximum and 1 kHz.
- Dissipation Factor:
  - NPO: 0.1% maximum @25°C, 1.0 Vrms ± 0.25 Vrms and 1 kHz, 1 MHz for values below 100pF.
  - X7R/X5R: 7% for ≥50VDC. ≥1 μF 10% Maximum; ≤25VDC 12% Maximum; ≥1 μF 16% @25°C, 1.0 Vrms ± 0.25 Vrms and 1 kHz.
  - Y5V: 7% for ≥50VDC >1 μF, 10% maximum; ≤25VDC 12% maximum @25°C, 0.1 Vrms maximum and 1 kHz
  - Z5U: 7% for ≥50VDC maximum; ≤25VDC 15% maximum @25°C, 0.5 Vrms maximum and 1 kHz
- Dielectric Strength:
  - NPO, X7R, X5R: 250% rated voltage with 50 mA max charging current <100VDC, ≥100VDC 125%.
  - Z5U, Y5V: 200% rated voltage with 50 mA Maximum charging current ≤100VDC.
- Life Test: (1000 hrs)
  - NPO, X7R: 150% rated voltage at +125°C ≤50VDC; >50VDC 100% X5R, Z5U; Y5V: 150% rated voltage at +85°C ≤50VDC
- Humidity Resistance:
  - (Same MLCC Method 13)
  - NPO, X7R, X5R, Z5U, Y5V: 96 hrs at 40°C relative humidity 90~95%
- Storage: store all capacitors indoors 5~35°C humidity <75%. They are warranted for a period of 2 years from the date of manufacture.

