

X7R DIELECTRIC CAPACITORS

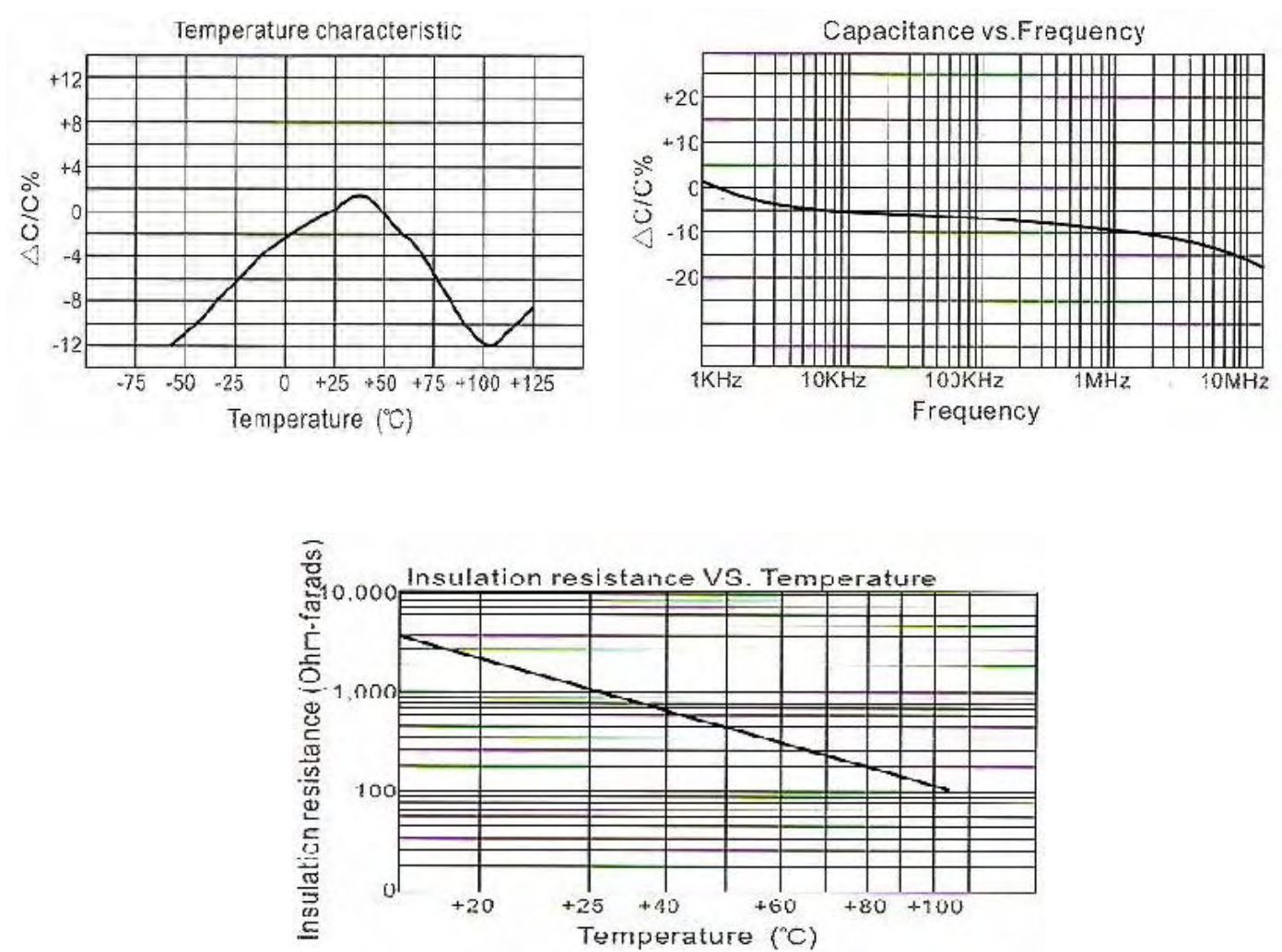
FEATURES

X7R formulations are called “temperature stable” ceramics and into EIA Class II dielectric. X7R is the most Popular of these intermediate dielectric constant materials. Its temperature capacitance is within ± 15% from -55 to 125°C. Its aging rate is 1%.

Performance Characteristics

Capacitance Range	100pF ~ 10nF
Capacitance tolerance	± 10%, ± 20% Preferred ± 10%, ± 20%
Operating temperature range	-55°C ~ 125°C
Temperature coefficient	within ± 15%
Rated voltage	6.3V,10V,16V,25V,50V,100V
Dissipation factor and “Q”	For ≤ 10V: DF ≤ 5.0% For 16V: DF ≤ 3.5% For 25V min: DF ≤ 2.5%
Insulation resistance	10GΩ min. or 500ΩF min. which ever is less
Dielectric withstanding voltage	250% rated voltage
Test voltage	≤10 uF , 1 ±0.2 Vrms >10 uF , 0.5 ±0.1 Vrms
Test frequency	≥10uF: 1 KHZ ± 10% >10uF, 120Hz ± 24Hz

Typical Characteristics curves



Capacitance range VS. Chip Size

Size	6.3V	10V	16V	25V	50V	100V
0402	100pF ~ 0.22uF	100pF ~ 0.1uF	100pF ~ 0.1uF	100pF ~ 22 nF	100pF ~ 10 nF	
0603	100pF ~ 2.2uF	100pF ~1.5 uF	100pF ~ 1.0 uF	100pF ~ 1.0 uF	100pF ~ 0.1uF	100pF ~ 10 nF
0805	100pF ~ 10uF	100pF ~ 4.7uF	100pF ~ 1.5 uF	100pF ~ 1.0 uF	100pF ~ 0.22uF	100pF ~ 22 nF
1206	100pF ~ 22uF	100pF ~ 10uF	100pF ~ 2.2 uF	100pF ~ 1.5 uF	100pF ~ 1.0 uF	100pF ~ 0.1uF