

## **X7R DIELECTRIC CAPACITORS**

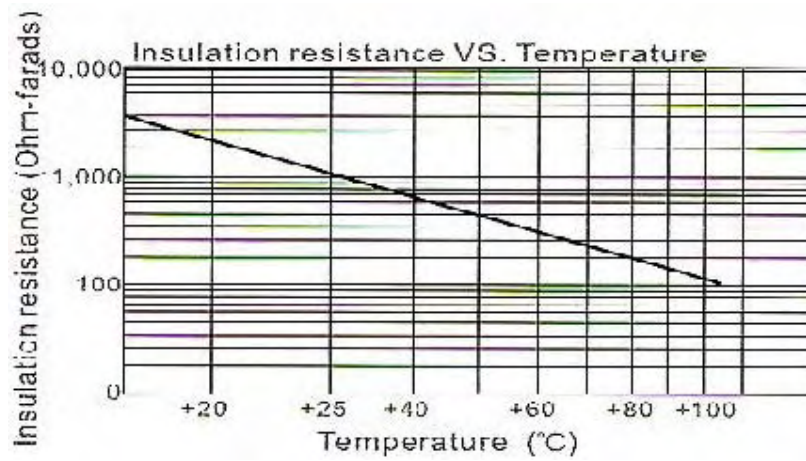
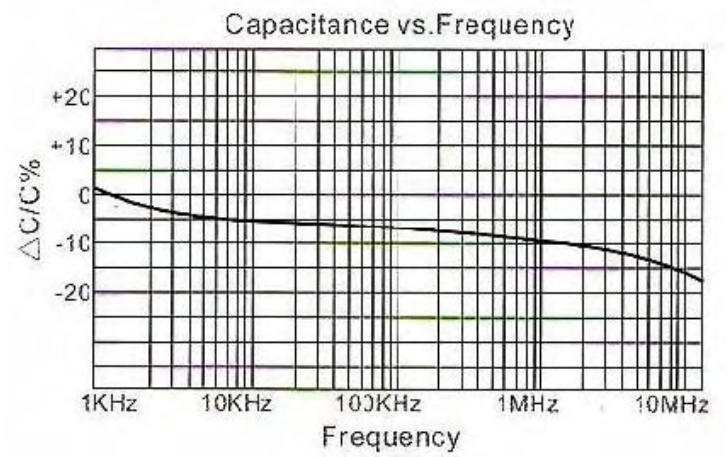
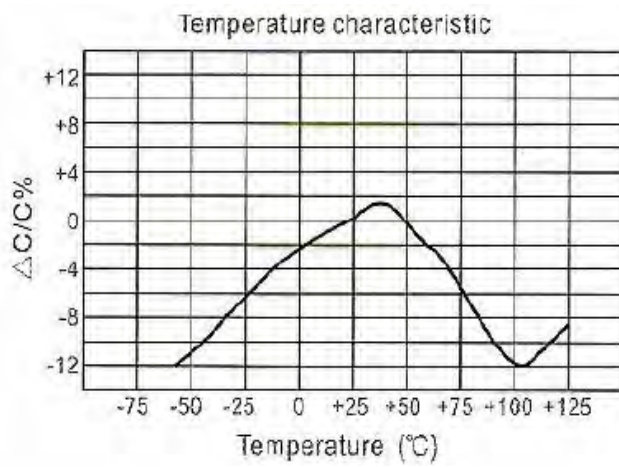
### **FEATURES**

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  $\pm 15\%$  from -55 to 125°C. Its aging rate is 1%.

### Performance Characteristics

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

## 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