



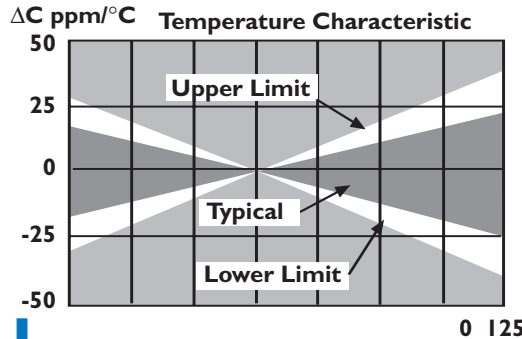
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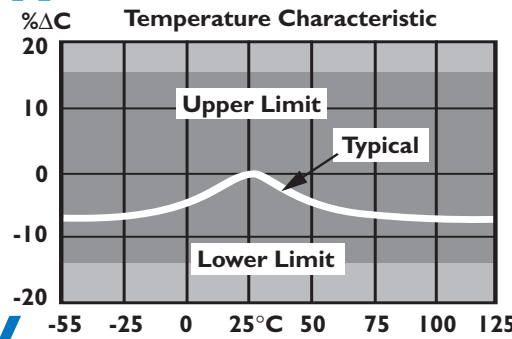
**DIELECTRIC PROPERTIES OF CERAMIC CAPACITORS**

Temperature Characteristic				
Ceramic Dielectric	COG/NP0	X7R	Z5U	Y5V
Operating Temp Range, deg °C	-55 to +125	-55 to +125	+10 to +85	-30 to +85
Max Cap Change w/o DC bias	0+/-30ppm/°C	+/- 15%	+22%/-56%	+22%/-82%
Max Cap Change @ WVDC	0+/-30ppm/°C	+15%/-40%		
Cap & DF Test Frequency	Cap < 1000 pF 1MHz Cap > 1000pF 1 kHz	Cap < 100 pF 1MHz Cap > 100pF 1 kHz	1 kHz	1 kHz
Cap & DF Test VRMS	1 VRMS	Cap < 10uF 1 VRMS Cap > 10 uF 0.5 VRMS	0.5 VRMS	0.5 VRMS
Max DF: 50-200 WVDC	0.001	.025	.04	.05
	25 WVDC	0.001	.035	.05
	16 WVDC		.05	.07
	6.3-10 WVDC		.05	.10
Insulation Resistance @ 25 °C in Megohms, Tested @ WVDC, - the lower of				
The number on this line divided by the capacitance in uF	1000	1000	100	100 => 16 VDC 50 < 16 VDC
<b>OR</b>	100,000	100,000	10,000	10,000 => 16 V 5000 < 16 VDC
Insulation Resistance @ 125 °C in Megohms Tested @ WVDC	0.1 TIMES 25 °C VALUE	0.1 TIMES 25 °C VALUE		
Dielectric Withstanding VDC	= < 200 WVDC, 2.5 x WVDC, 201-500 WVDC, 1.5 X WVDC, > 500 WVDC, 1.2 X WVDC			
Typical Aging Rate, % / decade-hour	0	2	3	5

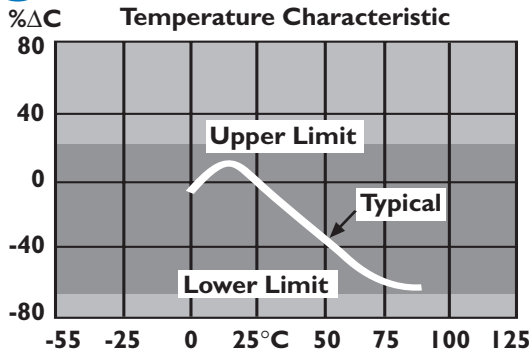
**COG**



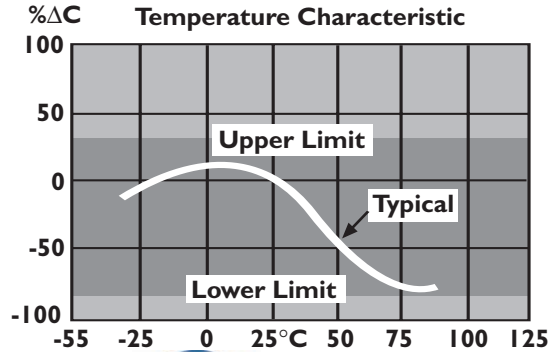
**X7R**



**Z5U**



**Y5V**



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 ISO 9001

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