

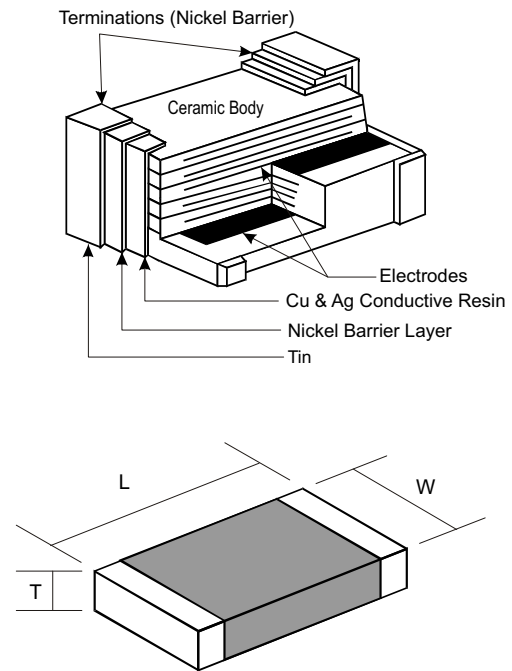
FEATURES

- A wide range of sizes (0402 to 1210)
- Soft / Flex termination reduces cracks caused by board bending

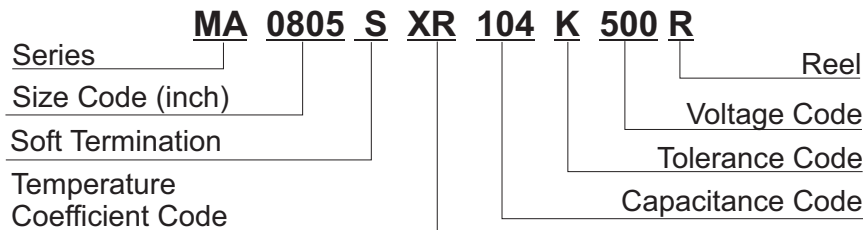
DIMENSIONS

Size Inches (mm)	Length (mm)	Width (mm)	Thickness Max (mm)
0402 (1005)	1.00	0.50	0.55
0603 (1608)	1.60	0.80	0.95
0805 (2012)	2.00	1.25	1.35
1206 (3216)	3.20	1.60	1.85
1210 (3225)	3.20	2.50	2.70

* Thicknesses noted are maximum.
Thicknesses are less on low capacitance values.



HOW TO MAKE PART NUMBER



GENERAL ELECTRICAL DATA

Dielectric	C0G / NPO	X7R	X7S
Temperature Coefficient Code	CG	XR	XS
Size	See Chart on page 3~4		
Rated Voltage (WVDC)	See Chart on page 3~4		
Capacitance Range *	See Chart on page 3~4		
Capacitance Tolerance **	J (±5%), K (±10%)	J (±5%), K (±10%), M (±20%)	
Tan δ @ 5C	Cap. < 30pF : Q ≥ 400 + 20°C Cap. ≥ 30pF : Q ≥ 1000	≤10% (depending on value/voltage combination)	
Operating Temperature	-55 to +125°C		
Capacitance Characteristic	± 30ppm / °C	± 15%	± 22%

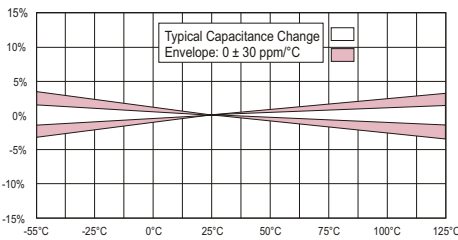
* Measured at the condition of 30~70% related humidity, apply 1.0±0.2Vrms, 1.0MHz±10%, at 25°C ambient temperature

** Preconditioning for Class II MLCC: Perform a heat treatment at 150±10°C for 1 hour, then leave in ambient condition for 24±2 hours before measurement.

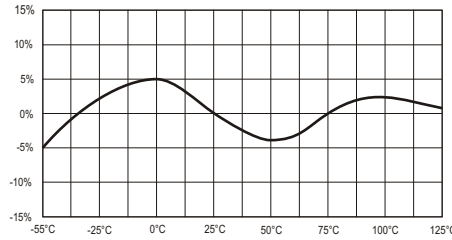
STANDARD VOLTAGES AND CAPACITANCE RANGES (pF)

Size Code	Temperature Coefficient		COG/NPO	X7R	X7S
	Voltage	Code	(CG)	(XR)	(XS)
0402	10V	100			470,000
	16V	160		220,000	470,000
	25V	250		220,000	
	50V	500	100 ~ 1,000	1,000 ~ 100,000	
0603	10V	100			2,200,000
	16V	160			2,200,000
	25V	250		470,000 ~ 1,000,000	
	35V	350		220,000 ~ 1,000,000	
	50V	500	100 ~ 10,000	1,000 ~ 470,000	
	100V	101	330 ~ 10,000	1,000 ~ 22,000	47,000 ~ 100,000
0805	10V	100			10,000,000
	16V	160		4,700,000	10,000,000
	25V	250		2,200,000 ~ 4,700,000	
	35V	350		1,000,000 ~ 4,700,000	
	50V	500	15,000 ~ 33,000	100,000 ~ 2,200,000	
	100V	101	15,000 ~ 33,000	1,000 ~ 100,000	220,000 ~ 1,000,000
	250V	251	3,300 ~ 6,800	1,000 ~ 22,000	
	450V	451	100 ~ 3,900		
1206	6.3V	060		22,000,000	
	10V	100			
	16V	160			
	25V	250		2,200,000 ~ 10,000,000	
	35V	350		2,200,000 ~ 10,000,000	
	50V	500	47,000 ~ 100,000	1,000,000 ~ 4,700,000	
	100V	101	47,000 ~ 100,000	100,000 ~ 1,000,000	2,200,000
	250V	251	10,000 ~ 15,000	22,000 ~ 100,000	
	450V	451	6,800 ~ 10,000		
1210	50V	500		2,200,000	4,700,000 ~ 10,000,000
	100V	101	68,000	470,000 ~ 2,200,000	3,300,000 ~ 4,700,000
	250V	251	22,000	100,000 ~ 220,000	
	450V	451	33,000		
	630V	631	15,000 ~ 33,000	47,000 ~ 68,000	
	1000V	102	1,000 ~ 8,200		

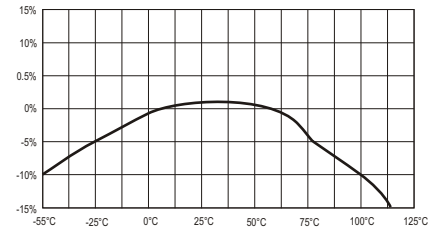
COG/NPO: Typical Capacitance Change vs. Temperature



X7R: Typical Capacitance Change vs. Temperature



X7S: Typical Capacitance Change vs. Temperature



CAPACITANCE CODE EXAMPLES

Code	221	222	473	104	105	106
in uF	0.00022	0.0022	0.047	0.1	1.0	10
in pF	220	2,200	47,000	100,000	1,000,000	10,000,000