

APPLICATION SPECIFIC CAPACITORS

HIGH FREQUENCY CERAMIC CAPACITORS

GR700 Series



The GR700 Series was designed specifically as an alternative to “cubic” chip capacitors in high-volume applications where low cost is a primary design objective. This product is manufactured with the same “low loss” COG ceramic formulation and electrode material as are used in our MA Series. The rectangular shapes of this GR700 Series allow for greater manufacturing automation resulting in lower cost. GR700 capacitors bridge the gap between standard COG chips and the high performance MA Series, offering a low cost, high Q capacitor. Applications include cellular phone, GPS, and RF LAN.

FEATURES

- Miniature sizes
- Stable COG temperature coefficient
- Very high Q at high frequencies
- High RF power handling capabilities

SPECIFICATIONS

Operating Temperature Range	-55 to + 125°C
Temperature Coefficient	0 ± 30 ppm/°C
Working Voltage	See table, Capacitor Catalog pages 90 and 91
Dielectric Test Voltage (D.C.)	250% of rated working voltage (except 500 Volt rated @ 200%)
Capacitance Tolerance	B, C, D, G, J, K Available: Specials on request
Quality Factor (Q)/ESR	Consult Factory for Q / see table, Capacitor Catalog pages 89-91 for ESR
Insulation Resistance	@ 25°C: 0.1 to 470 pF: 1000k Megohms Min. over 470 pF: 100k Megohms Min. @ 125°C: 0.1 to 470 pF: 100k Megohms Min. over 470 pF: 10k Megohms Min.
Marking	Standard GRM product is unmarked

CAPACITANCE RANGE

Part Number	EIA Code	Capacitance Value					
		Min./Max.	50VDC	100VDC	200VDC	300VDC	500VDC
GRM706	0603	Min.	0.5pF	0.5pF	0.5pF	—	—
		Max.	100pF	100pF	100pF	—	—
GRM708	0805	Min.	0.5pF	0.5pF	0.5pF	—	—
		Max.	160pF	140pF	100pF	—	—
GRM710	1210	Min.	510pF	240pF	160pF	130pF	3.3pF
		Max.	1000pF	470pF	220pF	150pF	120pF

PART NUMBERING

GRM 706	COG	220	K	100	A	L
CAPACITOR TYPE AND SIZE GRM = Nickel Barrier layer tin GRH = Nickel Barrier solder coated	TEMPERATURE CHARACTERISTICS Standard TC COG = 0 ± 30ppm/°C - 55°C to + 125°C	CAPACITANCE VALUE Expressed in picofarads and identified by a three-digit number. First two digits represent significant figures. Last digit specifies the number of zeros to follow. For values below 10pF, the letter “R” is used as the decimal point and the last digit becomes significant.	CAPACITANCE TOLERANCE COG: (10pF or less) B = ±1pF C = ±.25pF D = ±.5pF (Over 10pF) G = ±2% J = ±5% K = ±10%	VOLTAGE Identified by a three-digit number	MARKING A = No Marking	PACKAGING B = Bulk L = 7" Reel

APPLICATION SPECIFIC CAPACITORS

HIGH FREQUENCY CERAMIC CAPACITORS

GR700 Series

ENVIRONMENTAL

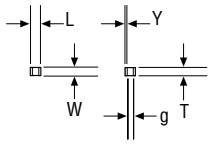
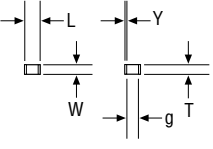
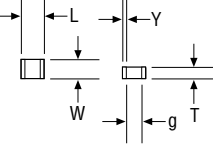
Aging	Negligible
Environmental Tests	MIL-STD-202
Shock	Method 213, Condition J
Vibration	Method 204, Condition B
Moisture Resistance	Method 106
Solderability	Method 208
Immersion	Method 104, Condition B
Barometric Pressure	Method 105, Condition B
Resistance to Soldering Heat	Method 210, Condition B
Thermal Shock	Method 107, Condition A
Life	Method 108, Condition F

PACKAGING

	QUANTITY PER 7" REEL	QUANTITY PER 13" REEL
GRM706	4000	10000
GRM708	3000	10000
GRM710	2000	8000

See pages 38-42 for land pattern recommendations, soldering profiles, and mechanical considerations.

CONFIGURATION & DIMENSIONS – GR700 Series

Style	Type	EIA Style	Configuration	Dimensions: mm					Termination
	NPO			L	W	T Max	g min	Band Y min	
GRM706	COG	0603		1.75 ± .1	0.95 ± .1	1.05	0.5	0.2	Palladium Silver, Nickel Interface & Sn60 Solder
				1.6 ± .1	0.8 ± .1	0.9			Palladium Silver, Nickel Interface & Tin Plating
GRM708		0805		2.16 ± 0.3	1.40 ± 0.3	1.40	0.7	0.25	Palladium Silver, Nickel Interface & Sn60 Solder
				2.0 ± 0.3	1.25 ± 0.3	1.25			Palladium Silver, Nickel Interface & Tin Plating
GRM710		1210		3.30 ± 0.3	2.67 ± 0.3	1.65	1.0	0.3	Palladium Silver, Nickel Interface & Sn60 Solder
				3.2 ± 0.3	2.5 ± 0.3	1.52			Palladium Silver, Nickel Interface & Tin Plating

CAPACITANCE vs RESISTANCE

