

MonoCap GP Series

FEATURES

- High capacitance with small size.
- Products with lead-free terminations meet EU RoHS and China RoHS requirements
- All general purpose, temperature compensation and coupling and decoupling applications
- Crimp and straight leadstyles.



GENERAL SPECIFICATION OF LEADED MULTI-LAYER CERAMIC CAPACITOR

Dielectric Material	NPO (N)	Y7R (B)	Y5U (E)	Y5V (Y)
Dielectric Type	Stable Class I Dielectric	Stable Class II Dielectric		
Electrical Properties	With negligible dependence of electrical properties on temperature, voltage, frequency and time	With predictable change of properties with temperature, voltage, frequency and time. This dielectric is ferro-electric and offers higher capacitance ranges than Class I.	With high test dielectric constant and greater variation of properties with temperature and test conditions, very high capacitance per unit volume	
Application	Use in circuits requiring stable performance	Use as blocking, coupling, by-passing discriminating element	Suited for by-passing and coupling application such as store power and memory circuit	
Capacitance Range	1pF~10nF	100pF~10μF	1nF~14.7μF	
Operating Temperature	0±30ppm/°C -55°C~+125°C	±15% -55°C~+125°C	+30%~-56% -30°C~+85°C	+30%~-80% -30°C~+85°C

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.

THE STANDARD OF ELECTRONIC PROPERTIES

Item	Test Standard		
	NPO (N)	X7R (B)	Y5V (Y)
Capacitance	Within the tolerance	Within the tolerance	Within the tolerance
Dissipation Factor	≤0.15%	≤3.5%	≤7.0% (220nF below) ≤10.0% (220~470nF) ≤12.5% (470~1000nF)
Insulation Resistance	C≤10nF IR>1000MΩ C>10nF R. C>100MΩ. μF	C≤25nF 1R>4000MΩ C>25nF R. C>100MΩ. μF	
Test Condition			
Frequency	1MHZ (C>1000pF, 1KHZ)	1KHZ	
Test Voltage	1±0.2VDC		C<1μF, V: 0.3 ±0.2VDC C≥1uF, V: 1.0±0.2VDC
Test Voltage of IR	The measuring voltage is equal to the rated voltage. The charging current may not exceed 50 mA		
Standard Atmospheres Conditions	Unless otherwise specified, the standard range of atmospheric conditions for measuring and testing is as follow:		
	Ambient temperature	15°C~35°C	
	Relative humidity	45%~75%	
	Air Pressure	86Kpa~106Kpa (860-1060mbar)	
	If there may be any doubt on the results, measurements shall be made within the following limits:		
	Ambient temperature	25°C±1°C	
	Relative humidity	48%~52%	
	Air Pressure	86Kpa~106Kpa (860-1060mbar)	
	Operating Temperature Range	The operating temperature range is the range of ambient temperature at which the capacitor can be operated continuously at rated voltage. Temperature compensation use:	
NPO		-55°C~+125°C	
X7R		-55°C~+125°C	
Y5V		-25°C~+85°C	
Z5U		-10°C~+85°C	

ITEM AND REQUIREMENT OF RELIABILITY TEST

Item	Properties Request			Test Condition	
Appearance	No abnormality, sign in focus			Eyeballing	
Capacitance	In permissible tolerance			Class I: Voltage: 1±0.2V Frequency: 1MHz±10% (C≤1000pF) 1KHz±10% (C>1000pF) Class II: Voltage: 1±0.2V Frequency: 1KHz±10%	
Insulation Resistance	In permissible tolerance			Voltage: rated voltage Duration: 60±5s Charge/discharge current is less than 50 mA.	
Withstanding Voltage	Between terminals	There shall be no evidence of damage or flash over during the test.		Voltage: 2.5 times related voltage T=2s	
	Between terminals and body			Charge/discharge current is less than 50 mA.	
Withstanding Solder heat	There shall be no visible defacing and sign in focus			Tin review: 260 ± 5°C Duration: 10s Recovery time: 24 ± 2 h	
	Temp. Char.	Δ C/C≤			
	CG/CH/RH	±0.5% OR ± 0.5pF			
	UJ/SL	±1% OR ± 1pF			
	B	±10%			
	F	±30%			
Solderability	Leads shall excellently be covered with a new coating			Tin review: 230±5°C Duration: 2s	
Life test	There shall be no visible defacing and sign in focus			Voltage: 1.5U Temperature: upper category temperature Charge/discharge current is less than 50 mA. Duration: 1000----(+48h~-0h) Recovery time: 24±2 h	
	Temp. Char.	Δ C/C≤	DF≤		TR≥ (MIN)
	CG/UJ	±3% or ±1pF	1.5tgδ。		Ri ≥ 4000MΩ OR Ri.C≥40s
	CH/RH/SL	±5% or ±1pF			
	B	±20%	5%		Ri ≥ 2000MΩ OR Ri.C≥50s
	F	±30%	10% (≤100000pF) 12.5% (220000~470000pF) 17.5% (≥1000000pF)		

ORDERING CODE INFORMATION

MC1 - 0805 Y 104 M 500 BF3
(1) (2) (3) (4) (5) (6) (7)

(1) **Product type**

CODE	TYPE
MC1	Class I Dielectric Radial Leads
MC2	Class II Dielectric Radial Leads

(2) **Unit: inch**

SIZE (LxW)	
CODE	CHIP
0805	0.08x0.05
1206	0.12x0.06
1210	0.12x0.10
1812	0.18x0.12

(3) **Dielectric**

N	NPO
B	X7R
Y	Y5V
E	Y5U

(4) **Capacitance (pF)**

The first two digits are the significant figures of capacitance and the last digit is a multiplier as follows:	
0 = *1	
1 = *10	
2 = *100	
3 = *1000	
4 = *10 000	
5 = *100 000	
For Example:	
5R6 = 5.6pF	
104 = 100000pF	
100nF	

(5) **Capacitance tolerance**

Tolerance	
J	±5.0%
K	±10%
M	±20%
Z	+80%~-20%

(6) **Rated voltage**

THE CODE MEANING IS SME AS CAPACITANCE.
For Example:
250 =25V
500 =50V
101 =100V

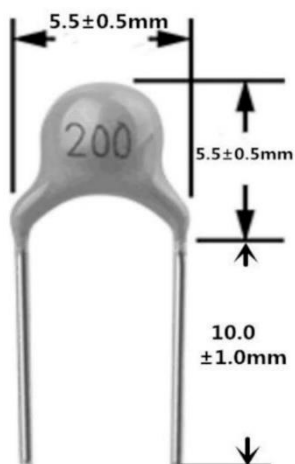
(7) **Packaging style**

Bulk	F3	5.08mm
For Example:		
Bulk = B		

Note: Bulk package: Qty=100pcs, 250pcs, 500pcs or 1000pcs in one bag.

DIMENSION SPECIFICATION

0603 & 0805 size



1206 size

