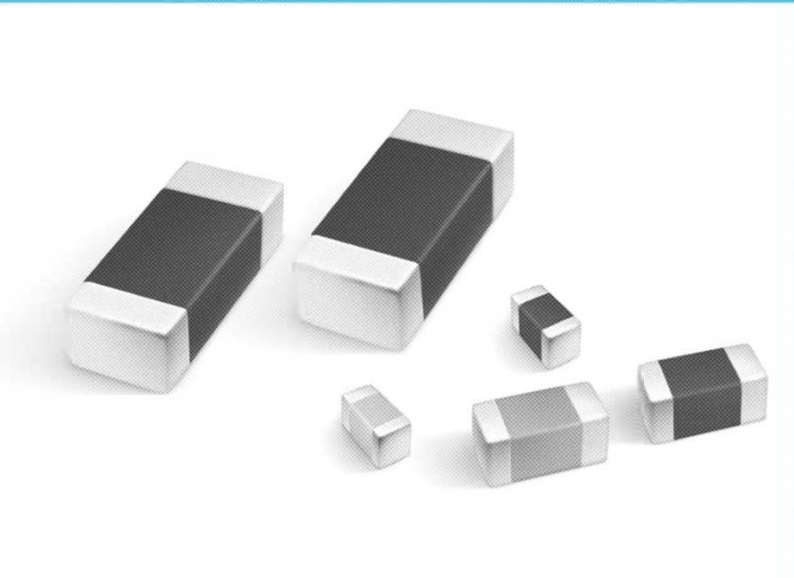


Multi Layer Ceramic Capacitors



SMD Type 0805 100nF 50V

SMD Type 0603 100nF 50V

SMD Type-High Frequency

Substrate Application 0805

Multi Layer Ceramic Capacitors

Introduction

SAMWHA's series of multilayer ceramic (MLC) chip capacitors is designed to meet a wide variety of need. Multilayer ceramic chip capacitors are available in both class I and class II formulations. Temperature compensation formulations are class I and temperature stable and general application formulations are classified at class II. The class I multilayer ceramic capacitors are COG with negligible dependence of electrical properties on temperature, voltage, frequency. The most of commonly used class II dielectric are X7R, X5R and Y5V. The X7R provides intermediate capacitance values which vary $\pm 15\%$ over the temperature range of -55°C to 125°C . The X5R provides intermediate capacitance values which vary $\pm 15\%$ over the temperature range of -55°C to 85°C . The Y5V provides the highest capacitance value which vary from 22% to -82% over the temperature range of -30°C to 85°C . All class II capacitors vary in capacitance value under the influence of temperature, operating voltage and frequency. We offer a complete line of products for both class I and II .

Features

- Samwha's high density ceramic bodies offer superior performance and reliability
- Samwha offer various temperature characteristics, rated voltage and packing method
- Material with high dielectric constant and superior manufacturing technology allows very high values in a small size
- Solder coated terminals offer superior solderability

Applications

Wide applications throughout commercial and industrial market.

- Communication products like Cellular Phone, Pager, Codeless phone
 - Multimedia products like DVD, CD-ROM, FDD, HDD, Game machine, Computer, Note book, Digital camera, LCD
 - Audio visual products like TV, Camcorder, Minidisk, MP3 Player
 - Communication products like Electronic tuner, Duplexer, VCXO, TCXO, Modem
 - OA equipment products like Printer, Copy Machine, Fax Machine
- ※ special specification like a Automobile, Medical, Military, Aviation should be discuss with our sales representatives

SMD Type - High Frequency Capacitors

SAMWHA high frequency MLCC(CF) products offers excellent performance in demanding high RF power applications requiring consistent and reliable operation .

The copper electrodes allow for Ultra -low ESR and high Q in the GHz frequencies.

The CF series products are your best choice for high RF power applications from UHF through microwave frequencies.

Applications

- RF Power Amplifiers, Low Noise Amplifiers
- Filter Networks
- Cable TV and telecommunication networks
- GPS, Bluetooth and TV set-top boxes
- MRI Systems

Features

- Ultra Low ESR
- High Q
- High Self Resonance
- Capacitance Range : 0.5pF to 100pF
- Temperature characteristics : COG

How to Order(Product Identification)

CF 2012 COG 101 J 251 N R B

1 2 3 4 5 6 7 8 9

1 CF : High Frequency(SMD)

2 **Size Code**

This is expressed in tens of a millimeter.

The first two digits are the length, The last two digits are width.

3 Temperature Coefficient Code

Classification	Code	Temperature Range	Temperature Coefficient
Class I	C0G	-55 to +125°C	±30 ppm/°C

4 Capacitance Code(Pico farads)

The nominal capacitance value in pF is expressed by three digit numbers.

The first two digits represents significant figures and the last digit denotes the number of zero

Ex.) 104 = 100000pF R denotes decimal 8R2 = 8.2pF

5 Capacitance Tolerance Code

Code	Tolerance	Code	Tolerance
B	±0.1pF	G	±2.0%
C	±0.25pF	J	±5%
D	±0.5pF	K	±10%
F	±1.0%	M	±20%

6 Voltage Code

Code	250	500	101	201	251
Rated Voltage	DC 25V	DC 50V	DC 100V	DC 200V	DC 250V

7 Termination Code

N : Nickel-Tin Plate

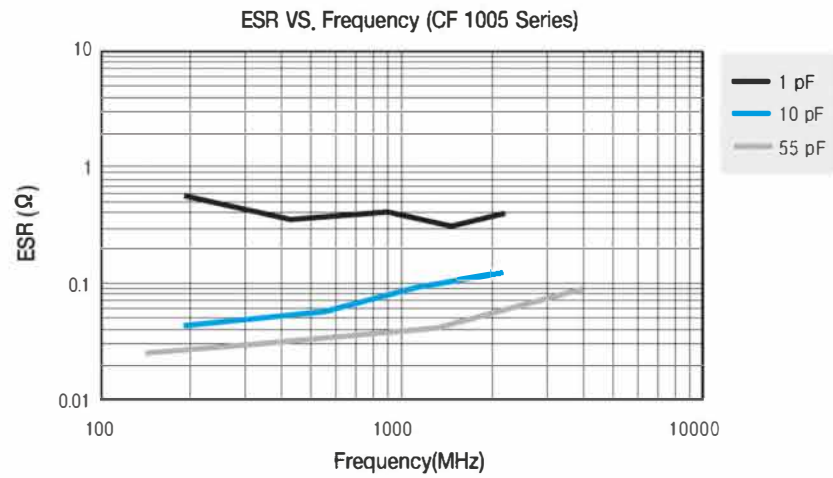
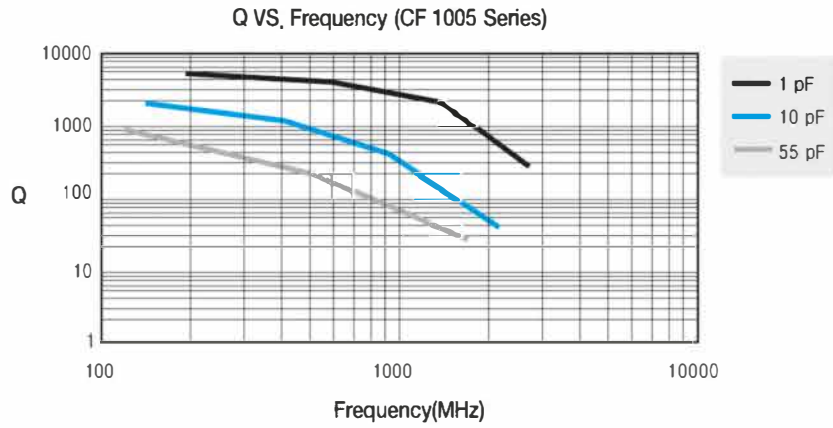
8 Packing Code

R : Reel Type, B : Bulk Type

9 Thickness Option

Size(mm)	Thickness(mm)		Code	Size(mm)	Thickness(mm)		Code
	t	Tol(±)			t	Tol(±)	
0603/1005	0.3	0.03	-	3216	1.15	0.15	E
1005	0.5	0.05	-	3216/3225	1.6	0.2	I
2012	0.6	0.1	A	3225	1.8	0.2	J
1608	0.8	0.1	B	3225/4532/5750	2	0.25	K
2012/3216	0.85	0.15	B	3225/4532/5750	2.5	0.25	L
2012	1.25	0.15	E				

Size(mm)	Code	Packaging	Size(mm)	Code	Packaging
0603/1005	-	Paper Taping	3216	E	Embossed Taping
1005	-	Paper Taping	3216/3225	I	Embossed Taping
2012	A	Paper Taping	3225	J	Embossed Taping
1608	B	Paper Taping	3225/4532/5750	K	Embossed Taping
2012/3216	B	Paper Taping	3225/4532/5750	L	Embossed Taping
2012	E	Embossed Taping			



Appendix I

COG-Temperature Compensating Type(0603~2012)

Type Size(inch) Volt(V) Cap.	COG					
	1005(0402)		1608(0603)		2012(0805)	
	25	50	50	100	50	100
0.5pF(0R5)						
1pF(010)						
2pF(020)						
3pF(030)						
4pF(040)						
5pF(050)						
6pF(060)						
7pF(070)						
8pF(080)						
9pF(090)						
10pF(100)						
12pF(120)						
15pF(150)						
18pF(180)						
22pF(220)						
27pF(270)						
33pF(330)						
39pF(390)						
47pF(470)						
56pF(560)						
68pF(680)						
82pF(820)						
100pF(101)						