

## CAPACITORS- SURFACE MOUNT

## SURFACE MOUNT CAPS

### MULTILAYER CHIP CERAMIC CAPACITORS

Popular miniature size chips are available in very thin profile configuration with NPO, X7R and Z5U dielectric characteristics rated at 50V / 100V

The choice of dielectric is largely determined by the stability required.

\*NPO Ultra stable Class 1 dielectric, with negligible dependence of electrical properties on temperature, voltage, frequency and time. Used in circuits requiring stable performance.

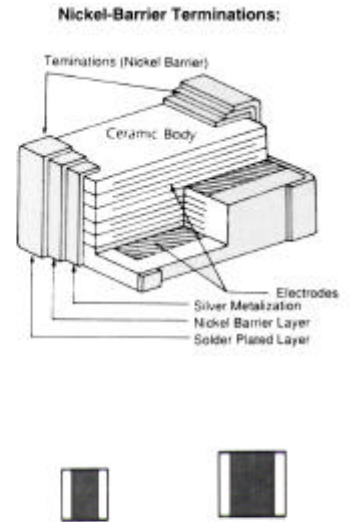
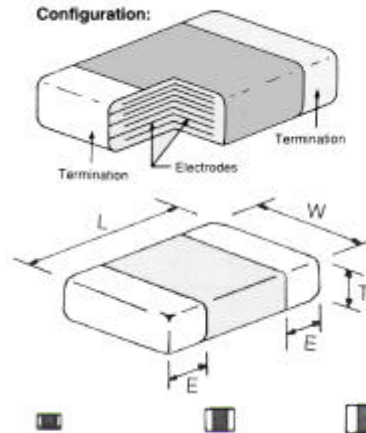
\*X7R Stable Class 11 dielectric, with predictable change of properties with temperature, voltage, frequency and time. Used as blocking, coupling, by-passing and frequency discriminating elements.

\*Z5U General purpose Class 11 dielectric with highest dielectric constant and greater variation of properties with temperature and test conditions. Very high capacitance per unit volume and suited for bypass and coupling application as well as filtering, transient suppression blocking, and charge storage applications.

Units are supplied in bulk, tape and reel format.

CODE	L (mm)	W (mm)	T (mm)	E (mm)
0603	1.60	0.80	1.25	0.20
0805	2.03	1.27	1.27	0.38
1206	3.18	1.52	1.52	0.51
1210	3.18	2.54	1.78	0.51
1812	4.57	3.18	1.78	0.61

Sold Only in Minimum Reel sizes



**0603**  
0.063 x 0.31in.

**0805**  
0.080 x 0.050in.

**1206**  
0.126 x 0.063in.

**1210**  
0.126 x 0.098in.

**1812**  
0.178 x 0.126in.

Ordering Information:

SMC (Cap Value) 0603 (Dielectric)
SMC (Cap Value) 0805 (Dielectric)
SMC (Cap Value) 1206 (Dielectric)
SMC (Cap Value) 1210 (Dielectric)

Example: SMC10pF/0805/X7R

	COG	X7R	Z5U
Temperature Characteristics	0 ±30 PPM/°C	±15% Maximum over -55°C to +125°C	+22%, -56% Maximum over -10°C to +85°C
Operating Temperature	-55°C to +125°C		-30°C to +85°C
Dissipation Factor (D.F.) at 25°C	0.15%max. @ 1 Vrms, 1MHz for >1000PF, 1KHz	2.5%max. @ 1Vrms, 1KHz	2.5%max. @ 0.5Vrms, 1KHz
Insulation Resistance @25°C, with rated voltage applied, 60 sec	100,000M <sup>?</sup> or 1,000M <sup>?</sup> ? F whichever is less		10,000M <sup>?</sup> or 100M <sup>?</sup> ? F whichever is less
Dielectric Withstanding Voltage, 25°C	250% of rated voltage for 5 seconds with charge and discharge current limited to 50mA maximum. 200% of rated voltage for capacitance 0.5 <sup>?</sup> F and above.		
Voltage Coefficient	None	None	None
Life Test	250% of rated voltage, 125°C, 1000hours.		150% of rated voltage, 85°C, 240 hours
Aging rate (per decade hour)	None	Typical 2.5%	Typical 5%
Available Tolerance code	C, D, J, K, M	J, K, M	M, Z, P, V

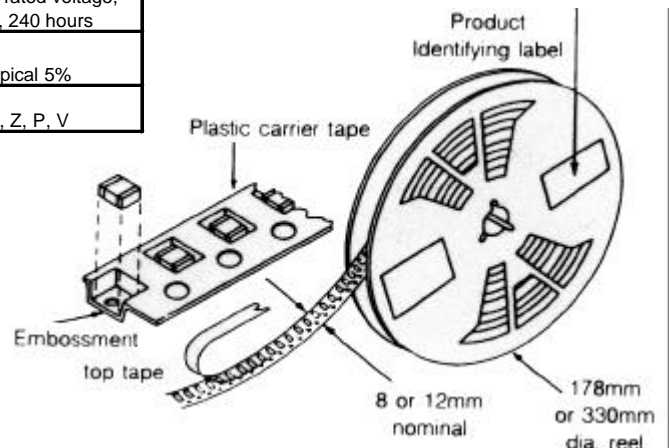


Tolerance Code

Code	Tolerance
C	±0.5%
D	±0.25%
F	±0.1%
G	±0.05%
J	±5%
K	±10%
M	±20%
Z	±80% ~ -20%

Voltage Code

Code	Voltage
250	25V
500	50V
101	100V
201	200V



Capacitance	Code	Capacitance	Code	Capacitance	Code	Capacitance	Code	Capacitance	Code	Capacitance	Code	Capacitance	Code
1pF	1R0	10pF	100	100pF	101	1000pF	102	0.01uF	103	0.1uF	104	1.0uF	105
1.2pF	1R2	12pF	120	120pF	121	1200pF	122	0.012uF	123	0.12uF	124	1.5uF	155
1.5pF	1R5	15pF	150	150pF	151	1500pF	152	0.015uF	153	0.15uF	154	2.2uF	225
1.8pF	1R8	18pF	180	180pF	181	1800pF	182	0.018uF	183	0.18uF	184	3.3uF	335
2.2pF	2R2	22pF	220	220pF	221	2200pF	222	0.022uF	223	0.22uF	224	4.7uF	475
2.7pF	2R7	27pF	270	270pF	271	2700pF	272	0.027uF	273	0.27uF	274	5.6uF	565
3.3pF	3R3	33pF	330	330pF	331	3300pF	332	0.033uF	333	0.33uF	334	6.8uF	685
3.9pF	3R9	39pF	390	390pF	391	3900pF	392	0.039uF	393	0.39uF	394	8.2uF	825
4.7pF	4R7	47pF	470	470pF	471	4700pF	472	0.047uF	473	0.47uF	474	10uF	106
5.6pF	5R6	56pF	560	560pF	561	5600pF	562	0.056uF	563	0.56uF	564	22uF	226
6.8pF	6R8	68pF	680	680pF	681	6800pF	682	0.068uF	683	0.68uF	684	47uF	476
8.2pF	8R2	82pF	820	820pF	821	8200pF	822	0.082uF	823	0.82uF	824	100uF	107