

FEATURES

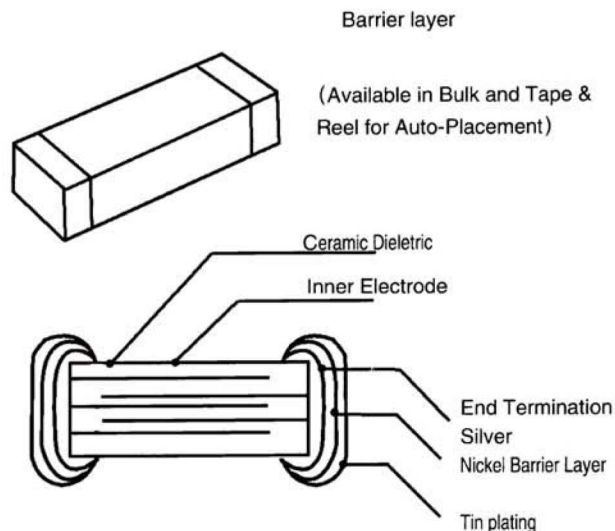
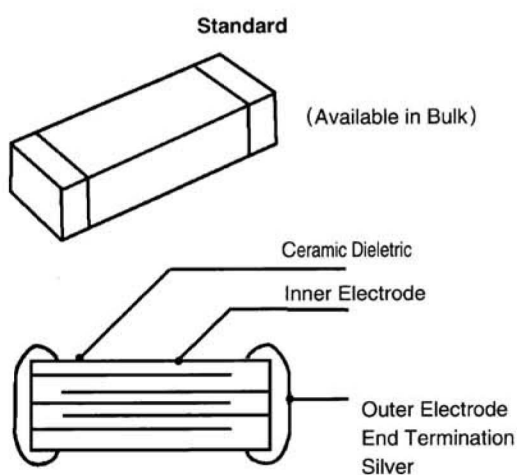
- Miniature size
- Wide capacitance, TC, voltage and tolerance range
- Industry standard sizes
- 8 mm and 12mm Tape & Reel for auto-placement
- Available for wave, reflow or vapor phase order



HOW TO ORDER

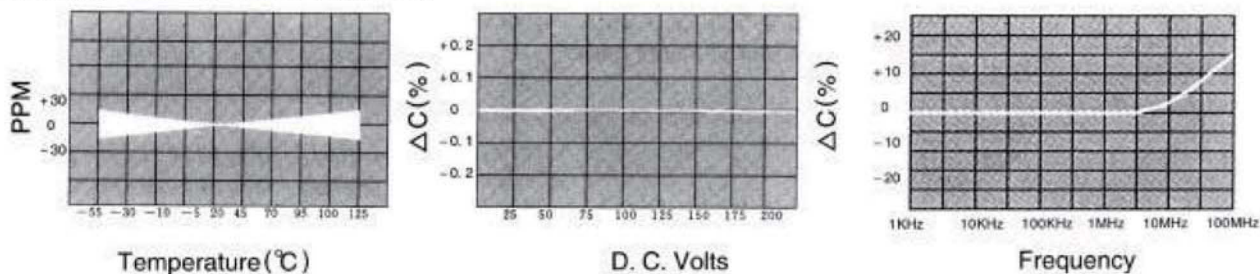
0805	CG	4	102	J	500	N	T
Size code inches	Dielectric	Total Ch.	Nominal (PF) Capacitance	Tolerance	Rated Voltage	Termination	Packaging Style
0402 0.04 x 0.02	CG COG	No of total character (102 = 1000 = 4)	102 10 x 10 ²	B ±0.1PF	160 16 x 10 ⁰	S Silver	No Mark Bulk
0603 0.06 x 0.03	D X5R		103 10 x 10 ³	C ±0.25PF	250 25 x 10 ⁰	N Nickel Barrier	T Tape & Reel
0805 0.08 x 0.05	B X7R			D ±0.5PF	500 50 x 10 ⁰		B Bulk Cartridge
1206 0.12 x 0.06	E Z5U			F ±1.0%	630 63 x 10 ⁰		
1210 0.12 x 0.10	F Y5V			G ±2.0%	101 10 x 10 ¹		
1812 0.18 x 0.12				J ±5.0%	201 20 x 10 ¹		
2225 0.22 x 0.25				K ±10%	501 50 x 10 ¹		
3035 0.30 x 0.35				M ±20%	102 10 x 10 ²		
				S +50 -20%	202 20 x 10 ²		

TERMINATION DIAGRAMS



NOTE: Other Termination Available Upon Request(Contact Factory)

TYPICAL CHARACTERISTICS



NPO (COG) Dielectric Characteristic Introduction & Test Method

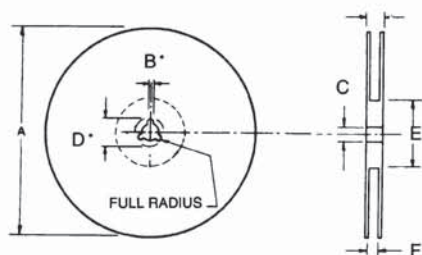
ITEM	SPECIFICATION		TEST METHOD		
CAPACITANCE	(0.5PF ~ 0.1uF)		C<=1000PF : 1MHz ±10% 0.5 to 5Vrms C>1000PF : 1KHz ±10% 1.0 ± 0.2Vrms		
Capacitance Tolerance	B = ±0.1PF C = ±0.25PF D = ±0.5PF F = ±1.0% , G = ±2.0% J = ±5.0% , K = ±10% M = ±20% B,C,D for C < 10pf				
Rated Voltage	16, 25, 50, 63, 100, 200, 500, 1000, 2000VDC				
Dissipation Factor (DF)	C >= 50PF : DF < 0.15% C < 50PF : DF <= 15/(150/C + 7) x 10 ⁻⁴				
Insulation Resistance (IR)	C < 10nF : R > 1000 : C > 10nF : R x C > 1000S		Test Voltage: rating voltage , Charging time: 1min. Temperature : 18 ~ 25°C , Humidity: <80°C		
Dielectric Withstanding Voltage	There shall be no evidence of damage or flash over during the test.		Apply 2.5 x rating voltage to both Terminations for 5 seconds. Charge and discharge current are less than 50mA.		
Termination Adhesion	There shall be no evidence of damage during the test		Test Condition : 5N; 10 ± 1s		
Bending Strength	There shall be no evidence of damage during the test, Capacitance tolerance shall be not more than 10%		After soldering capacitor on the PCB, 1mm of bending shall be applied for 1 second as shown by Drawing		
Solderability	Termination area shall be at least 80% covered with a new solder coating. There shall be no crack and ceramic exposure of terminated surface by melting		The capacitors are completely immersed during 2 in the molten rosin, Then immersed 10MM during 2 ± 1s in the molten solder with a temperature of 235 ± 5°C. Pick up The capacitors-and cleaned with solvent, and put in on the >10 times microscope		
Resistance to Soldering Heat	Type	NPO (COG)			
	Temp.	265 ± 5°C			
	Time	5 ± 1s			
	Cover %	>=75%			
	C/C	<=5%			
Temperature Cycling	Type	NPO	Condition	NPO (COG)	
	C/C	<=1%	Temp. 0a	-55 ± 3°C	
			Temp. 0b	+125 ± 3°C	
	There shall be no evidence of damage during the test		Cycle times	5 times 30min / time	
			Resume time	24 hours	
			Changing times	2 ~ 3min.	
Humidity Moisture Resistance	Type	NPO (COG)	Permanent moisture: T = 40 ± 20°C t = 21d Relative humidity : 93 ± 2% -3% Resume time : 1 ~ 2 hours		
	C/C	<=2%			
	D , F	0.003			
	I , R	R x C > 25s			
	There shall be no evidence of damage during the test.				
T.C. Characteristics	Dielectric	C/C	Dielectric	T.C.	
	NPO (CG)	±30ppm/°C	NPO (COG)	+20°C to 55°C : +20°C to +125°C	
Operating Temperature Range	-55 °C to +125 °C				
Vibration Bump	There shall be no	Vibration frequency: f = 10 ~ 500Hz	4000 times Adder speed: 390m / s2 Pulse duration: 6ms <=2%		
	Type	NPO (CG)			
	C/C				
Life test	There shall be no evidence of damage during the test		Conditions	NPO (COG)	
	Type	NPO (COG)	Temperature	+125°C	
	C/C	<=2%	Time	T = 100 ^h	
	D , F	0.003	Voltage	V = 1.5Vr	
	I , R		R x C >= 25s	24 ± 1 hour	
6 grade failure test	There shall be no	Resume time	Conditions	NPO (COG)	
	Type	NPO (COG)	Creditability	60%	
	C/C	<=2%	Temperature	+125°C	
	D , F	0.003	Voltage	Rating Voltage	
	I , R		R x C >= 25s	1000hours	
	There shall be no evidence of damage during the test		Time		

PACKAGING

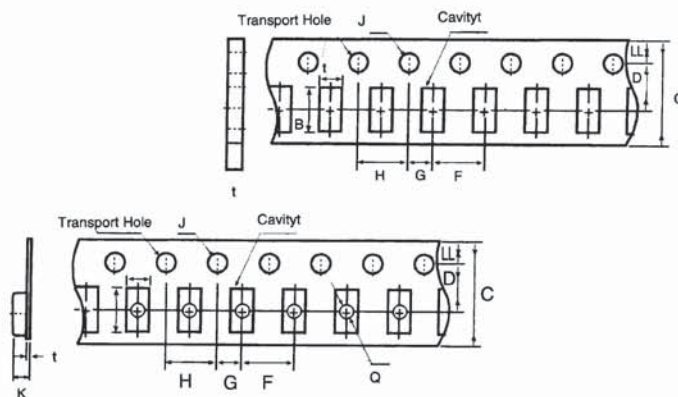
Structure and Dimension

1. TAPE & REEL

A	B	C	D	E	F	G
178 ± 2.0	3.0	13 ± 0.5	32	50 MIN	$10.0 \pm$	14.9
				± 1	1.5	12 ± 2.0

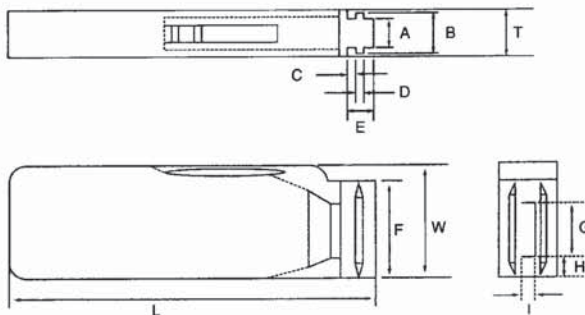


PAPER TAPE			PLASTIC TAPE (TE)		
SIZE	A	B	SIZE	A	B
0402	0.6 ± 0.2	1.1 ± 0.2	0402	0.5 ± 0.2	1.2 ± 0.2
0603	1.1 ± 0.2	1.4 ± 0.2	0603	0.8 ± 0.2	2.0 ± 0.2
0805	1.45 ± 0.2	2.3 ± 0.2	0805	1.65 ± 0.2	2.4 ± 0.2
1206	1.8 ± 0.2	3.4 ± 0.2	1206	2.0 ± 0.2	3.6 ± 0.2



2. CARTRIDGE

Symbol	A	B	T	C	D	E
Dimension	6.8 ± 0.1	8.8 ± 0.1	12 ± 0.1	$1.5 \pm 0.1 - 0$	$2 \pm 0 - 0.1$	4.7 ± 0.1
Symbol	F	W	G	H	L	I
Dimension	$31.5 \pm 0.2 - 0$	$36 \pm 0 - 0.2$	19 ± 0.35	7 ± 0.35	110 ± 0.7	5 ± 0.35



PACKAGING QUANTITY

SIZE	QUANTITY			
	TP	TE	BC	BP
0402	10000		20000	2000
0603	4000	2500	15000	2000
0805	4000	2500	1000	2000
1206	4000	1000	5000	2000
1210				500
1812				500
2225				200
3035				200

SIZE CODE CAPACITANCE AND VOLTAGE

SIZE CODE	DIMENSIONS				VOLTAGE	CAPACITANCE (PE) NPO (COG)
	L	W	T	ME		
0402	1.0 ± 0.07	0.5 ± 0.05	0.5 ± 0.05	0.1 ± 0.05	25V	0R5 ~ 151
					50V	0R5 ~ 101
0603	1.6 ± 0.1	0.8 ± 0.10	0.8 ± 0.1	0.3 ± 0.1	25V	0R5 ~ 102
					50V	0R5 ~ 561
					100V	0R5 ~ 331
					200V	
0805	2.00 ± 0.20	1.25 ± 0.20	0.7 ± 0.3 0.2	0.5 ± 0.25	25V	0R5 ~ 472
			1.25 ± 0.15		50V	0R5 ~ 222
			1.0 ± 0.3 0.2		100V	0R5 ~ 102
					200V	0R5 ~ 271
					500V	0R5 ~ 181
1206	3.20 ± 0.30	1.60 ± 0.20	1.0 ± 0.3 0.2	0.5 ± 0.25	25V	1R5 ~ 332
					50V	1R5 ~ 332
					100V	1R5 ~ 332
					200V	1R5 ~ 471
			1.25 ± 0 0.2		500V	1R5 ~ 471
					1000V	1R5 ~ 271
					2000V	1R5 ~ 221
1210	3.20 ± 0.30	2.50 ± 0.30	1.0 ± 0.3 0.2	0.70 ± 0.25	25V	220 ~ 562
					50V	220 ~ 562
					100V	100 ~ 332
					200V	100 ~ 272
			1.25 ± 0 0.2		500V	100 ~ 102
					1000V	100 ~ 471
					2000V	100 ~ 221
1812	4.50 ± 0.40	3.20 ± 0.30	2.5	1.00 ± 0.25	25V	102 ~ 103
					50V	102 ~ 103
					100V	100 ~ 472
					200V	100 ~ 272
					500V	100 ~ 182
					1000V	100 ~ 152
					2000V	100 ~ 102
2225	5.70 ± 0.50	6.40 ± 0.50	2.5	1.00 ± 0.25	25V	151 ~ 681
					50V	102 ~ 223
					100V	102 ~ 103
					200V	102 ~ 822
					500V	102 ~ 562
					1000V	102 ~ 332
					2000V	102 ~ 222
3035	7.60 ± 10.50	9.00 ± 0.50	3.0	1.00 ± 0.25	25V	102 ~ 104
					50V	102 ~ 473
					100V	102 ~ 333
					200V	102 ~ 223
					500V	102 ~ 183
					1000V	102 ~ 822
					2000V	102 ~ 122