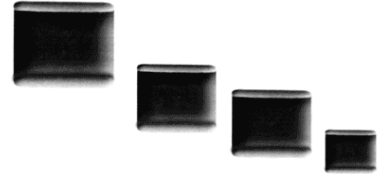


NPO (COG) MULTILAYER CERAMIC CAPACITOR



[] FEATURES

- Miniature size
- Wide capacitance, T.C., voltage and tolerance range
- Industry standard sizes
- 8mm and 12mm Tape & Reel for auto-placement
- Available for wave, re-flow or vapor phase solder



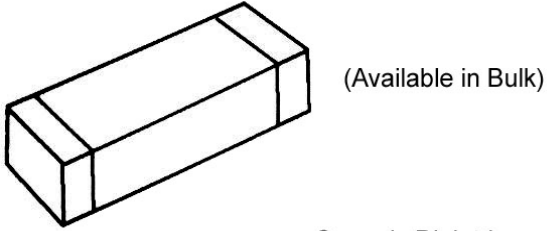
[] HOW TO ORDER

CC41	0805	CG	102	J	N	500	T
↓	↓	↓	↓	↓	↓	↓	↓
CC41:Class I dielectric for chip	Size code inches	Dielectric	Normal Capacitance	Tolerance	Termination	Rated Voltage	Packaging Style
	0402 0.04 x0.02	CG	COG	102 10x10 ²	B ±0.10PF	S Silver	160 16x10 ⁰ No Mark Bulk
	0603 0.06 x0.03		(NPO)	103 10x10 ³	C ±0.25PF	N Nickel Barrier Tin plating	250 25x10 ⁰ T Tape & Reel
	0805 0.08 x0.05			D ±0.5PF		500 50x10 ⁰ B Bulk Cartridge	
	1206 0.12 x0.06			F ±1.0%		630 63x10 ⁰	
	1210 0.12 x0.10			G ±2.0%		101 10x10 ¹	
	1812 0.18 x0.12			J ±5.0%		201 20x10 ¹	
	2225 0.22 x0.25			K ±10%		501 50x10 ¹	
	3035 0.30 x0.35			M ±20%		102 10x10 ²	
						202 20x10 ²	

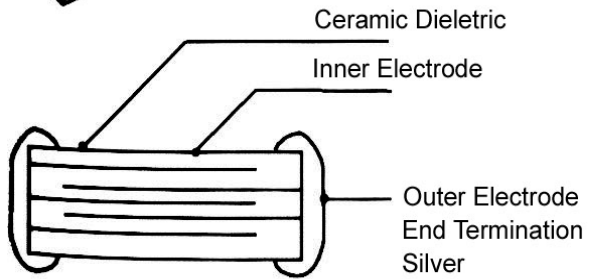
[] Termination Diagrams



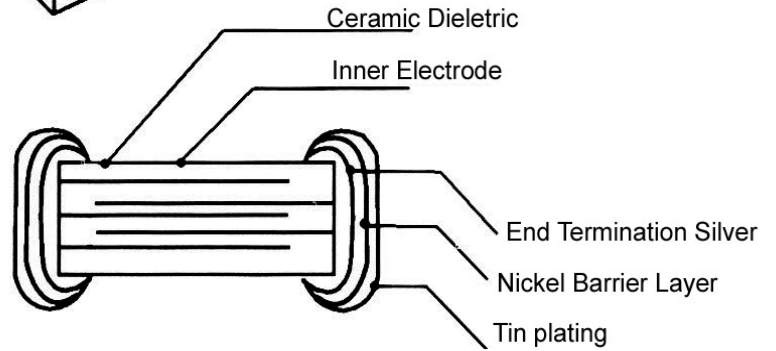
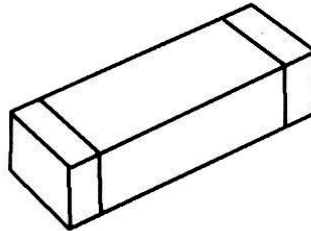
標準 Standard



(Available in Bulk)



三層電極 Barrier layer



NOTE: Other Termination Available Upon Request (Contact Factory)

NPO (COG) MULTILAYER CERAMIC CAPACITOR



[] NPO (COG) Dielectric Characteristic Induction & Test Method

ITEM	SPECIFICATION	TEST METHOD
CAPACITANCE	(0.5PF ~ 0.1μF)	
Capacitance Tolerance	B=±0.1PF C=±0.25PF D=±0.5PF F=±1% G=±2% J=±5% K=±10% M=±20% B, C, D for C < 10PF	C≤1000PF:1MHz ±10% 0.5 to 5Vrms C>1000PF:1KHz ±10% 1.0 ± 0.2Vrms
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>1000M C>10nF: R*C>1000S	Test Voltage: rating voltage Charging time: 1min Temperature: 18 ~ 25°C Humidity: <80%
Dielectric Withstanding Voltage	There shall be no evidence of damage or flash over during the test.	Apply 2.5x 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:

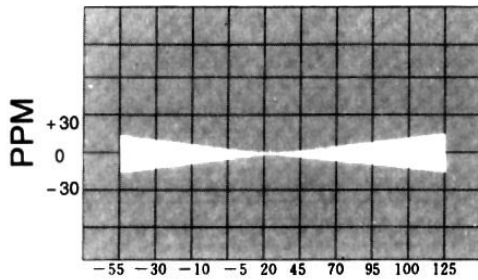
Solderability	Termination area shall be at least 80% covered with a new solder coating . There shall be no crack and ceramic exposure exposure of terminated surface by melting.		The capacitors are completely immersed during 2 in the molten rosin, then immersed 10mm during 2±1s in the molten solder with a temperature of 235±5°C. Pick up the capacitors-and cleaned with solvent, and examine under a 10x microscope.
Resistance to Soldering Heat	Type	NPO (COG)	
	Temp	265 ± 5°C	
	Time	5 ± 1s	
	Cover%	≥75%	
	•C/C	≤5 %	

[] NPO (COG) Dielectric Characteristic Induction & Test Method cont...

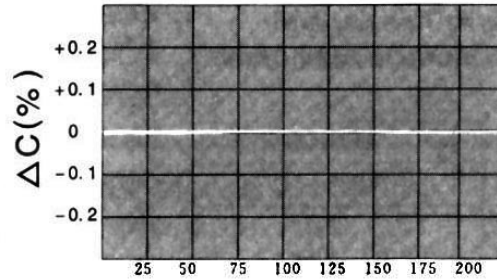
ITEM	SPECIFICATION		TEST METHOD		
Temperature Cycling	Type	NPO	Condition	NPO(COG)	
	•C/C	≤1%	Temp. 0a	-55±3°C	
	There shall be no evidence of damage during the test.			Temp. 0b	+125±3°C
				Cycle times	5 times 30 min/time
				Resume time	24h
				Changing times	2~3min
Humidity & Moisture Resistance	Type	NPO(COG)	Permanent moisture: T=40±2°C t=21d Relative humidity: 93+2%-3% Resume time: 1~2h		
	•C/C	≤2%			
	DF	0.003			
	IR	RxC>25s			
	There shall be no evidence of damage during the test.				
T.C. Characteristics	Dielectric	•C/C	Dielectric	T.C.	
	NPO(COG)	±30ppm / °C	NPO(COG)	+20°C→ -55°C→+20°C→+125°C	
Vibration	There shall be no evidence of damage during the test.		Vibration frequency: f=10~500HZ Vibration range: 0.75mm/s ² in 3 direction: 2h/direction		
Bump	Type	NPO(COG)	4000 acceleration:390m/s ² Pulse duration:6ms		
	•C/C	≤2%			
	There shall be no evidence of damage during the test.				
Life test	Type	NPO(COG)	Condition	NPO(COG)	
	•C/C	≤2%	Temperature	+125°C	
	DF	0.003	time	T=100th	

	IR	RxC > 25s	Voltage	V=1.5Vr
	There shall be no evidence of damage during the test.		Resume time	24±1h
<i>6 grade failure test</i>	Type	NPO(COG)	Condition	NPO(COG)
	•C/C	≤2%	Creditability	60%
	DF	0.003	Temperature	+125°C
	IR	RxC > 25s	Voltage	Rating Voltage
	There shall be no evidence of damage during the test.		Time	1000h

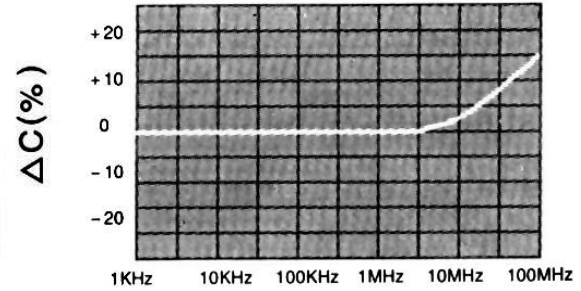
[] TYPICAL CHARACTERISTICS



Temperature(°C)



D. C. Volts



Frequency

NPO (COG) MULTILAYER CERAMIC CAPACITOR



[] SIZE CODE CAPACITANCE AND VOLTAGE

SIZE CODE	DIMENSION (mm)				VOLTAGE	CAPACITANCE (PF)
	L	W	T	ME		NPO (COG)
0402	1.0±0.07	0.5±0.05	0.5±0.05	0.1±0.05	25V	1R0 ~ 471
					50V	1R0 ~ 221
0603	1.6±0.1	0.8±0.10	0.8±0.1	0.3±0.1	25V	0R5 ~ 102
					50V	0R5 ~ 821
					100V	0R5 ~ 561
					200V	0R5 ~ 331
0805	2.00±0.20	1.25±0.20	1.25±0.15	0.5±0.20	25V	0R5 ~ 332
					50V	0R5 ~ 222
					100V	0R5 ~ 102
					200V	0R5 ~ 821
					500V	0R5 ~ 471
1206	3.20±0.30	1.60±0.20	1.0±0.3 0.2 1.25±0.0 0.2	0.5±0.20	25V	0R5 ~ 472
					50V	0R5 ~ 392
					100V	0R5 ~ 152
					200V	0R5 ~ 102
					500V	0R5 ~ 821
					1000V	0R5 ~ 471
					2000V	0R5 ~ 680
1210	3.20±0.30	2.50±0.30	1.0±0.3 0.2 1.25±0.0 0.2	0.75±0.20	25V	561 ~ 103
					50V	561 ~ 682
					100V	561 ~ 472
					200V	101 ~ 472
					500V	101 ~ 222
					1000V	101 ~ 102
					2000V	101 ~ 561
					25V	102 ~ 153

1812	4.50±0.40	3.20±0.30	2.5	1.00±0.25	50V	102 ~ 103
					100V	102 ~ 103
					200V	102 ~ 682
					500V	151 ~ 562
					1000V	151 ~ 472
					2000V	151 ~ 222
2225	5.70±0.50	6.40±0.50	2.5	1.00±0.25	25V	102 ~ 473
					50V	102 ~ 223
					100V	102 ~ 103
					200V	102 ~ 822
					500V	102 ~ 562
					1000V	102 ~ 332
3035	7.60±0.50	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 ~ 332

NPO (COG) MULTILAYER CERAMIC CAPACITOR



[] PACKAGING

<> STRUCTURE AND DIMENSION

TAPE & REEL

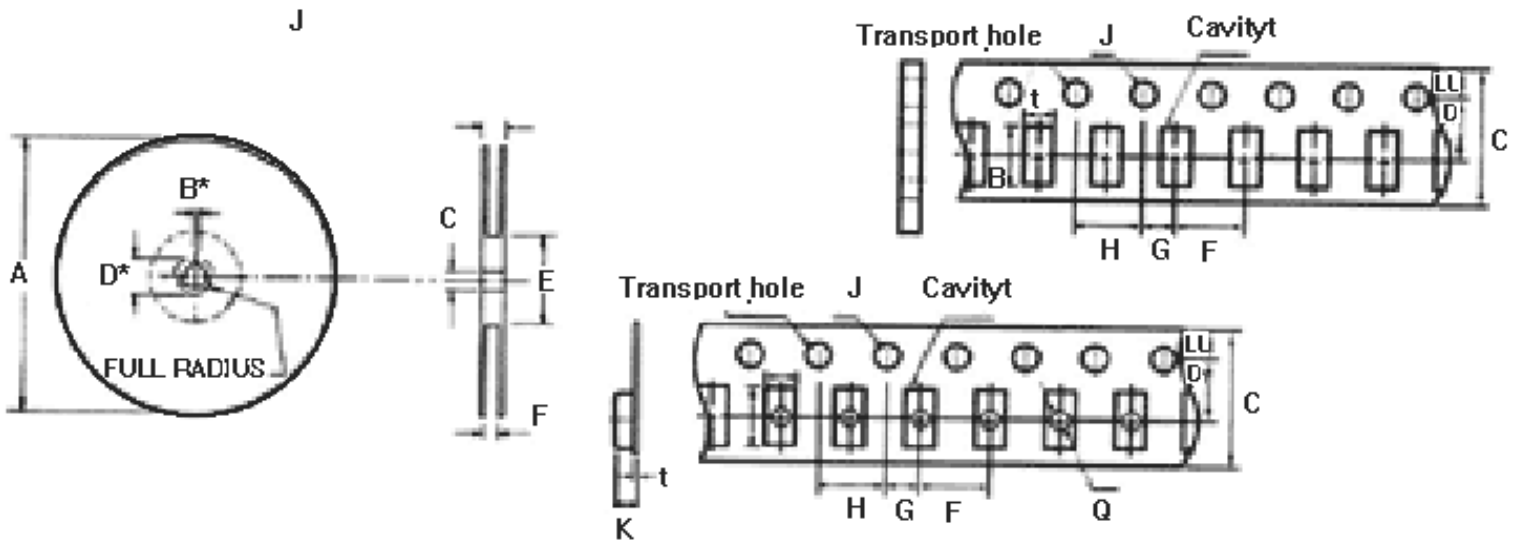
A	B*	C	D*	E	F	G
178±2.0	3.0	13±0.5	Φ32	50MIN	10.0±	14.9
				Φ±1	1.5	12±2.0

PAPER TAPE

SIZE	A	B
0402	0.6±0.2	1.1±0.2
0603	1.1±0.2	1.4±0.2
0805	1.45±0.2	2.3±0.2
1206	1.8±0.2	3.4±0.2

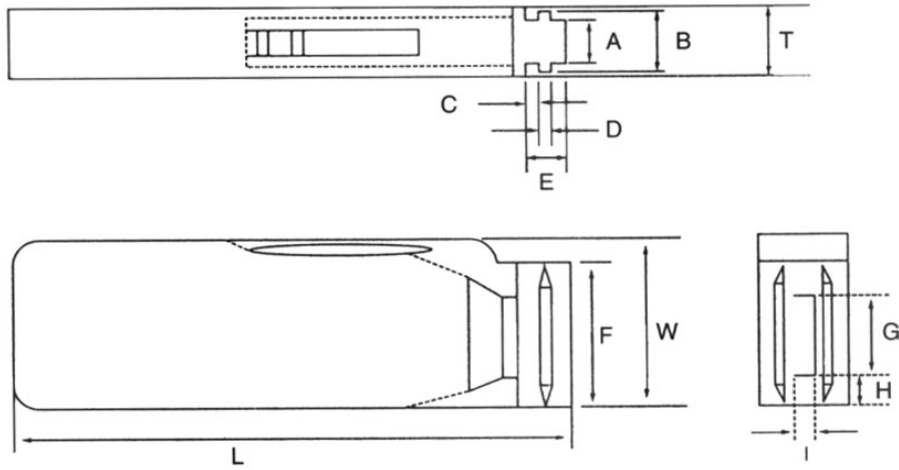
PLASTIC TAPE (TE)

SIZE	A	B
0402	0.5±0.2	1.2±0.2
0603	0.8±0.2	2.0±0.2
0805	1.65±0.2	2.4±0.2
1206	2.0±0.2	3.6±0.2



CARTRIDGE

Symbol	A	B	T	C	D	E
Dimension	6.8±0.1	8.8±0.1	12±0.1	15±0.1-0	2±0-0.1	4.7±0.1
Symbol	F	W	G	H	L	I
Dimension	31.5±0.2-0	36±0-0.2	19±0.35	7±0.35	110±0.7	5±0.35



MOBICON
Electronic Components

[] PACKAGING QUANTITY

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

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