

Temperature Compensating MLCC

Features

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

How to Order

0805	UJ	101	J	500	N	T	G
↑	↑	↑	↑	↑	↑	↑	↑
A	B	C	D	E	F	G	H

A		B		C	
Size Code Inches		T.C. Characteristics		Normal Capacitance	
0603	0.06×0.03	HG	-33±30 PPM/°C	102	10×10 ²
0805	0.08×0.05	LG	-75±30 PPM/°C	2R0	2.0
1206	0.12×0.06	PH	-150±60 PPM/°C	Express by three figures. Unit used is pF (pico-farad)	
		RH	-220±60 PPM/°C	First two figures are significant digit, third figure expresses number of zeros which follow the two significant digit	
		SH	-330±60 PPM/°C	If there is a decimal place it is represented by a "R". In this scenario all figures are significant digit	
		TH	-470±60PPM/°C		
		UJ	-750±120 PPM/°C		
		SL	+140-1000 PPM/°C		

D	
Tolerance	
B	±0.10PF
C	±0.25PF
D	±0.5PF
F	±1.0%
G	±2.0%
J	±5.0%
K	±10%
M	±20%

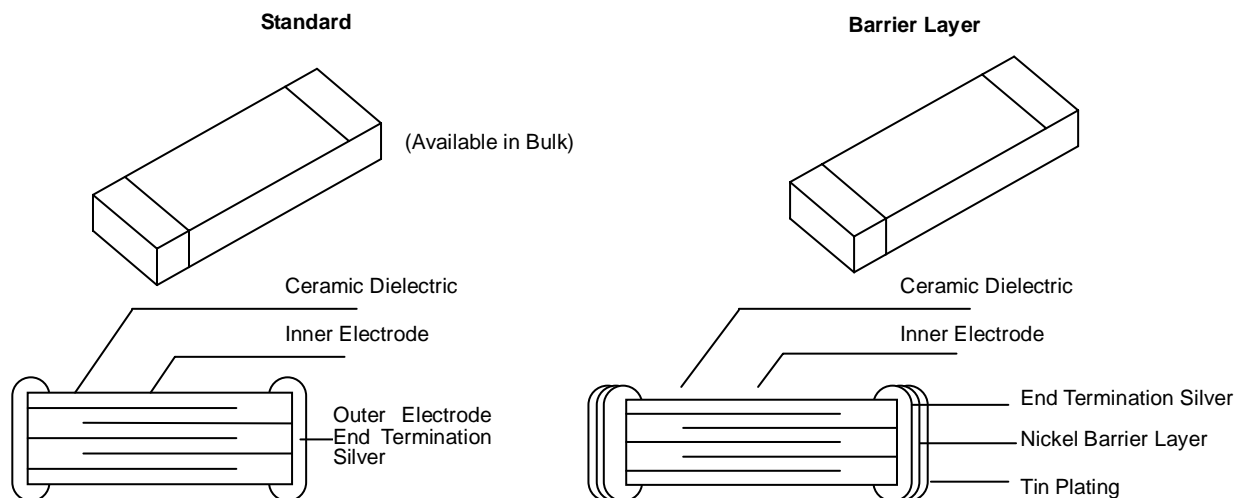
E	
Rated Voltage	
160	16×10 ⁰
250	25×10 ⁰
500	50×10 ⁰
630	63×10 ⁰
101	10×10 ¹
201	20×10 ¹
501	50×10 ¹
102	10×10 ²
202	20×10 ²

F	
Termination	
S	Silver
N	Nickel Barrier Tin plating

G	
Packaging Style	
No Mark	Bulk
T	Tape & Reel
B	Bulk Cartridge

H	
Lead Free	
G	Lead Free
	*
*May contain toxin material if left blanked	

Termination Diagrams



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Dielectric Characteristic Introduction & Test Method

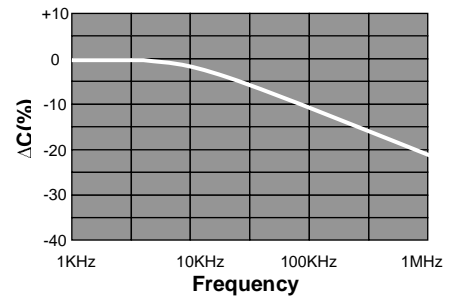
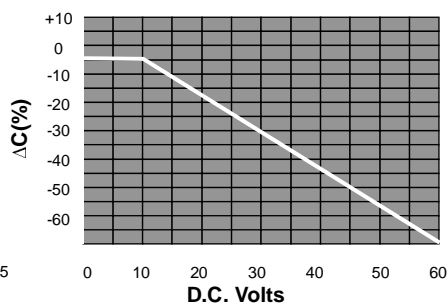
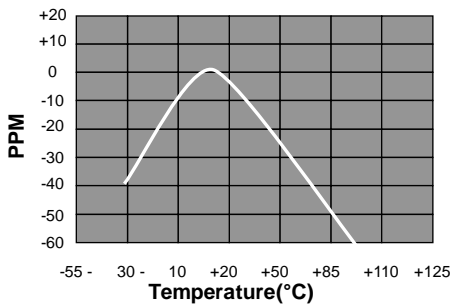
Item	Specification	Test Method		
Capacitance	Tolerance Requirement	C≤1000PF:1MHz±10% 0.5TO5Vrms C>1000PF:1KHz±10% 1.0±0.2Vrms		
Capacitance Tolerance	B=±0.1PF C=±0.25PF D=±0.5PF F=±1%G=±2% J=±5%K=±10% M=±20% B、C、D for C<10PF			
Rated Voltage	16、25、50、63、100、200、 500、1000、2000VDC			
Dissipation Factor (DF)	C≥50PF:DF<0.15% C<50PF: DF≤15((150/c)+7)×10 ⁻⁴			
Insulation Resistance (IR)	C≤10nF:R>1000MΩ C>10nF:RxC>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 2.5x 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 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			
	Temp		265±5°C	
	Time		5±1s	
	Cover%		≥85%	
	ΔC/C	≥5%		
Temperature Cycling	Type	HG LG PH RH SH TH UJ SL	Condition	
	ΔC/C	≤1%	Temp.Oa	-55±3°C
			Temp.Ob	+125±3°C
	There shall be no evidence of damage during the test.		Cycle times	5 times 30min/time
			Resume time	24h
			Changing times	2~3min

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Dielectric Characteristic Introduction & Test Method

Item	Specification		Test Method	
Humidity & Moisture Resistance	Type	HG LG PH RH SH TH UJ SL	Permanent moisture: T=40±2°C t=21d Relative humidity: 93+2%-3% Resume time: 1~2h	
	△C/C	≤20%		
	DF	0.003		
	IR	RxC>25s		
	There shall be no evidence of damage during the test.			
T.C. Characteristics			T.C.	
			+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/s2 in 3 direction:2h/direction	
Bump	Type	HG LG PH RH SH TH UJ SL	4000 adder speed:390m/s2 Pulse duration:6ms	
	△C/C	≤2%		
	There shall be no evidence of damage during the test.			
Life test	Type	HG LG PH RH SH TH UJ SL	Condition	
	△C/C	≤20%	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±1 小时
6 grade failure test	Type		Condition	
	△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	1000 小时

Typical Characteristics



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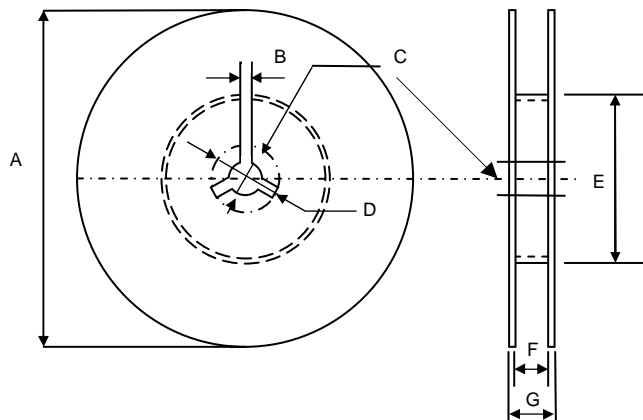
Size Code Capacitance and Voltage

Size Code	Dimensions (Mm)				Voltage	Capacitance(Pf)			
	L		T			HG LG	PH RH SH TH	UJ SL	
0603	1.6±0.1	0.8±0.10	0.8±0.1	0.3±0.1	25V	0.5~470	0.5~560	0.2~1000	
					50V	0.5~330	0.5~470	0.2~560	
					100V	0.5~270	0.5~330	0.2~470	
					200V	0.5~220	0.5~270	0.2~330	
0805	2.00±0.20	1.25±0.20	1.25±0.15	0.5±0.25	25V	0.5~820	0.5~1000	0.5~1000	
					50V	0.5~820	0.5~1000	0.5~560	
					100V	0.5~470	0.5~560	0.5~470	
					200V	0.5~330	0.5~470	0.5~330	
					500V	0.5~220	0.5~330	0.5~330	
1206	3.20±0.30	1.60±0.20	1.0± _{0.2} ⁰ 1.25±0.15	0.5±0.25	25V	0.5~2200	0.5~2200	0.5~3300	
					50V	0.5~1500	0.5~1500	0.5~2200	
					100V	0.5~1000	0.5~1000	0.5~1500	
					200V	0.5~470	0.5~560	0.5~560	
					500V	0.5~330	0.5~470	0.5~470	
					1000V	0.5~220	0.5~330	0.5~390	
					2000V	0.5~100	0.5~150	0.5~220	

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



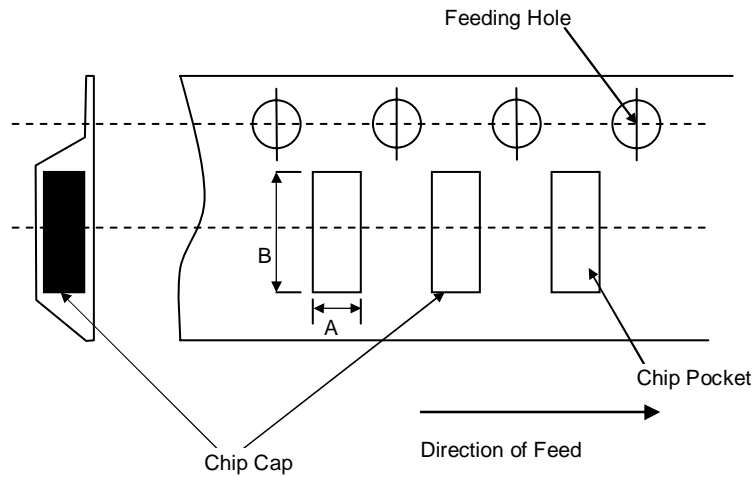
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Paper Tape

Size	A	B
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

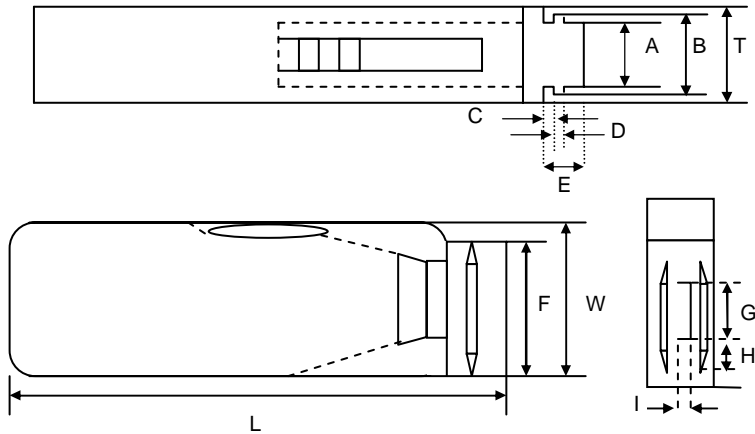
Plastic Tape(Te)

Size	A	B
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	D	C	T	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



Packaging Quantity

Size	Quantity			
	(TP)	(TE)	(BC)	(BP)
0603	5000	2500	15000	2000
0805	5000	2500	1000	2000
1206	5000	1000	5000	2000