“Military Screening" Grade Two

Multi Layer Ceramic Capacitors

1. Features

- Rectangular, serialized size specifications, suitable for surface mount of hybrid integrated circuits or printed circuits;
- Lead type: radial lead, suitable for plug-in and wave soldering;
- There are a variety of end electrode lead-out materials for Ag (Cu)-Ni-Sn, which are especially suitable for the strict requirements of surface assembly technology for weldability and welding heat resistance.;
- Low inductance, low loss, good frequency characteristics, high reliability;
- National military standard production line production;
- Widely used in military communications, radar, artillery fuzes, ships, ground electronic equipment for aviation, aerospace, and weapon systems, and high-end civilian equipment。
- It is suitable for resonance circuits, coupling circuits and circuits that require low loss, high capacitance, stability and high insulation resistance in various types of military electronic equipment.

Purtnumber structure

FC4-	683	X7R	1206	K	202	N	T
①	②	③	④	⑤	⑥	⑦	⑧

Description:

① Product series.

FC4: Class I dielectric material type (COG)

FX4: Class II dielectric material type (Other TCC).

② Rated capacity code.

Capacity code	Actual value (pF)	Remark
0R5	0.5pF	The first two digits are valid figures, and the last digit is a power of 10.
1R0	1.0pF	
472	47×10^2	
104	10×10^4	

③ Dielectric material.

Class I (FC4 series): C0G.

Class II (FX4 series): X7R, X5R, Y5V, Z5U, X6S, X7T, X7S and other materials.

④ Size.

Dimensions	01005	0201	0402	0603	0805	1206	1210	1808	1812	2211
Length×Width (inch)	0.01×0.005	0.02×0.01	0.04×0.02	0.06×0.03	0.08×0.05	0.12×0.06	0.12×0.10	0.18×0.08	0.18×0.12	0.22×0.11
Length×Width (mm)	0.40×0.20	0.60×0.30	1.00×0.50	1.52×0.76	2.00×1.25	3.20×1.60	3.20×2.50	4.50×2.00	4.50×3.20	5.70×2.80

⑤ Capacity tolerance level

code	A	B	C	D.	f	G	J	K	M	L	Z
tolerance	±0.05pF	±0.10pF	±0.25pF	±0.50pF	±1%	±2%	±5%	±10%	±20%	±30%	-20~+80%
Remark	A, B, C, D tolerance level is generally used for ≤10pFcapacity										

⑥ Rated voltage

Voltage code	Actual value (V)	Remark
6R3	6.3	The first two digits are valid figures, and the last digit is 10 index of R as decimal point
500	50×10^{0}	
201	20×10^{1}	
102	10×10^{2}	
202	20×10^{2}	

⑦ Terminal plating

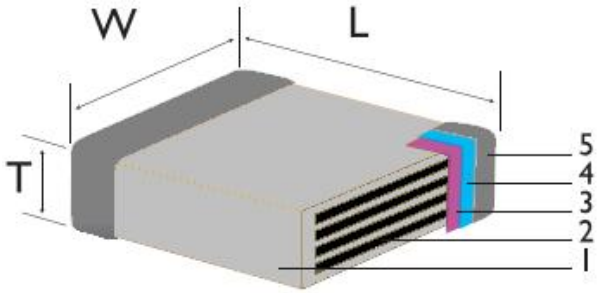
Terminal plating type	Plating Code
Three-layer plating Ag(Cu)/Ni/Sn	N
Silver	S
Gold	A
Tin/lead alloy containing at least 3% lead	Z

⑧ Packaging type

Packaging type	Packaging Code
Bulk	B
Taping	T

Size specifications

Size code		Size (mm)		
inch	mm	L	W	Tmax
01005	0402	0.40±0.02	0.20±0.02	0.22
0201	0603	0.60±0.05	0.30±0.05	0.35
0402	1005	1.00±0.20	0.50±0.20	0.70
0603	1608	1.52±0.25	0.76±0.25	1.01
0805	2012	2.00±0.25	1.25±0.25	1.45
1206	3216	3.20±0.30	1.60±0.30	1.80
1210	3225	3.20±0.30	2.50±0.30	2.80
1808	4520	4.50±0.40	2.00±0.20	2.80
1812	4532	4.50±0.40	3.20±0.30	3.10
2211	5728	5.70±0.50	2.80±0.30	3.10
2220	5750	5.70±0.50	5.00±0.50	4.90
2225	5763	5.70±0.50	6.30±0.50	6.20
3035	7689	7.60±0.50	9.00±0.50	6.20
3838	9696	9.80±0.50	9.20±0.50	4.50



Number	Item
1	ceramic dielectric
2	Internal electrode
3	External electrode
4	Nickel layer
5	Tin layer

Conventional voltage product capacity range

Specification	0402					0603					0805					1206				
(V) / C_R	6.3	10	16	25	50	6.3	10	16	25	50	6.3	10	16	25	50	6.3	10	16	25	50
100pF																				
220pF	■	■	■	■	■															
330pF	■	■	■	■	■															
470pF	■	■	■	■	■															
680pF	■	■	■	■	■															
1 nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2.2nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4.7nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5.6nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6.8nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
10nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
15nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
22nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
27nF	■	■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
33nF	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
39nF	■	■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
47nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
56nF	■	■				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
68nF	■	■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
100nF	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
150nF	■	■	■			■	■	■	■		■	■	■	■	■	■	■	■	■	■
220nF	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
270nF						■	■	■			■	■	■	■	■					
330nF	■		■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
470nF	■		■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
820nF											■	■	■			■	■	■	■	■
1.0uF	■		■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2.2uF	■		■			■	■	■	■	■	■	■	■	■		■	■	■	■	■
4.7uF	■		■			■		■	■		■	■	■	■		■	■	■	■	■
6.8uF						■										■	■	■	■	
10uF						■		■	■	■		■	■	■		■	■	■	■	
22uF											■	■	■	■		■	■	■	■	
27uF																				
33uF																				
47uF											■	■				■	■	■		
100uF																■				

■ X7R ■ X5R

Medium and high voltage product capacity range

Specification	0	0805			1206					1210				
(V) / C_R	1	100	200	250	100	250	500	1000	2000	100	250	500	1000	2000
100pF			■	■	■	■	■	■	■		■	■	■	■
150pF			■	■	■	■	■	■	■		■	■	■	■
330pF			■	■	■	■	■	■	■		■	■	■	■
470pF			■	■	■	■	■	■	■		■	■	■	■
680pF			■	■	■	■	■	■	■		■	■	■	■
1000pF			■	■	■	■	■	■	■		■	■	■	■
1. 2nF	■	■	■	■	■	■	■	■	■		■	■	■	■
1. 5nF	■	■	■	■	■	■	■	■	■		■	■	■	■
2. 2nF	■	■	■	■	■	■	■	■	■		■	■	■	■
3. 3nF	■	■	■	■	■	■	■	■			■	■	■	■
4. 7nF	■	■	■	■	■	■	■	■			■	■	■	■
6. 8nF	■	■	■	■	■	■	■	■			■	■	■	■
10nF	■	■	■	■	■	■	■	■		■	■	■	■	
12nF	■	■	■	■	■	■	■			■	■	■	■	
15nF	■	■	■	■	■	■	■			■	■	■	■	
22nF	■	■	■	■	■	■	■			■	■	■		
27nF	■	■			■	■	■			■	■	■		
33nF	■	■			■	■	■			■	■	■		
39nF	■	■			■	■				■	■	■		
47nF	■	■			■	■				■	■	■		
56nF	■	■			■	■				■	■			
68nF	■	■			■	■				■	■			
100nF	■	■			■	■				■	■			
120nF		■			■					■	■			
150nF		■			■					■				
220nF		■			■					■				
270nF		■			■					■				
330nF		■			■					■				
470nF		■			■					■				
560nF					■					■				
1. 0uF					■					■				
2. 2uF										■				

Specification	1808						1812						
(V) / C_R	100	250	500	1000	2000	3000	100	250	500	1000	2000	3000	4000
100pF	■	■	■	■	■	■		■	■	■	■	■	■
150pF	■	■	■	■	■	■		■	■	■	■	■	■
330pF	■	■	■	■	■	■		■	■	■	■	■	■
470pF	■	■	■	■	■	■		■	■	■	■	■	■
680pF	■	■	■	■	■	■		■	■	■	■	■	■
1000pF	■	■	■	■	■	■		■	■	■	■	■	■
1. 5nF	■	■	■	■	■			■	■	■	■	■	
2. 2nF	■	■	■	■				■	■	■	■	■	
2. 7nF	■	■	■	■				■	■	■	■	■	
3. 3nF	■	■	■	■				■	■	■	■	■	
4. 7nF	■	■	■	■				■	■	■	■	■	
6. 8nF	■	■	■	■				■	■	■	■		
10nF	■	■	■	■			■	■	■	■	■		
12nF	■	■	■	■			■	■	■	■			
15nF	■	■	■	■			■	■	■	■			
22nF	■	■	■				■	■	■	■			
27nF	■	■	■				■	■	■	■			
33nF	■	■	■				■	■	■	■			
39nF	■	■	■				■	■	■	■			
47nF	■	■	■				■	■	■	■			
56nF	■	■	■				■	■	■				
68nF	■	■					■	■	■				
100nF	■	■					■	■	■				
120nF	■	■					■	■	■				
150nF	■	■					■	■	■				
220nF	■						■	■					
270nF							■						
330nF							■						
470nF							■						
2. 2uF							■						

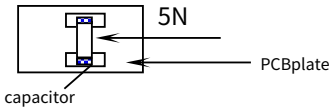
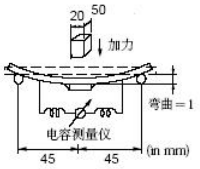
Specification	2225						
(V) / CR	100	250	500	1000	2000	3000	4000
100pF		■	■	■	■	■	■
150pF		■	■	■	■	■	■
180pF		■	■	■	■	■	■
220pF		■	■	■	■	■	■
330pF		■	■	■	■	■	■
470pF		■	■	■	■	■	■
680pF		■	■	■	■	■	■
1000pF		■	■	■	■	■	■
1. 5nF		■	■	■	■	■	■
2. 2nF		■	■	■	■	■	■
3. 3nF		■	■	■	■	■	■
4. 7nF		■	■	■	■	■	
6. 8nF		■	■	■	■	■	
10nF	■	■	■	■	■	■	
12nF	■	■	■	■	■	■	
15nF	■	■	■	■	■		
22nF	■	■	■	■	■		
27nF	■	■	■	■	■		
33nF	■	■	■	■	■		
39nF	■	■	■	■			
47nF	■	■	■	■			
56nF	■	■	■	■			
68nF	■	■	■	■			
100nF	■	■	■	■			
120nF	■	■	■				
150nF	■	■	■				
220nF	■	■	■				
270nF	■	■	■				
330nF	■	■	■				
470nF	■	■	■				
820nF	■	■					
1uF	■						
2. 2uF							

Note: When customers have special requirements, please specify when ordering.

Product technical specifications

<table>
<tr><th>Project</th><th colspan="7">Technical Specifications/Test Methods</th><th>Remark</th></tr>
<tr><td rowspan="5">range of working temperature</td><td>Class I</td><td colspan="6">C0G:-55~+125°C</td><td rowspan="5">Foe example "X7R":
The first letter "X" Indicates that its lowest operating temperature is -55℃.
The second digit "7" Indicates that its highest operating temperature is +125℃.
The third letter "R" Indicates that value of Capacity can change not more than ±15% when temperature is change during full operating temperature range.</td></tr>
<tr><td rowspan="4">Class II</td><td>first digit</td><td colspan="2">second digit</td><td colspan="2">third digit</td><td></td></tr>
<tr><td>Lower limit temperature</td><td colspan="2">upper limit category temperature</td><td colspan="2">relatively to +25°C Capacity can change in full operating temperature range</td><td></td></tr>
<tr><td>X:-55°C</td><td>4:+65°C</td><td>7:+125°C</td><td>P:±10%</td><td>T:+22%/-33%</td><td></td></tr>
<tr><td>Y:-30°C</td><td>5:+85°C</td><td>8:+150°C</td><td>R:±15%</td><td>U:+22%/-56%</td><td></td></tr>
<tr><td>Z:+10°C</td><td>6:+105°C</td><td></td><td>S:±22%</td><td>V:+22%/-82%</td><td></td></tr>
<tr><td>Exterior</td><td></td><td colspan="7">Visual inspection, product appearance has no obvious defects</td><td></td></tr>
<tr><td rowspan="2">Electrostatic capacity (C)</td><td>Class I</td><td colspan="2">Within specification error</td><td>Nominal capacity
≤1000pF
>1000pF</td><td>Test frequency
1MHz±10%
1KHz±10%</td><td>Test voltage
1.0±0.2Vrms
1.0±0.2Vrms</td><td rowspan="2">environment
temperature: +25±2°C
Humidity: <75%</td></tr>
<tr><td>Class II</td><td colspan="2">Within specification error</td><td>≤10μF
>10μF
Z5U</td><td>1KHz±10%
120Hz/100Hz
1.0±0.1KHz</td><td>1.0±0.2Vrms
0.5±0.2Vrms
0.5±0.05Vrms</td></tr>
<tr><td rowspan="2">loss tangent (DF)</td><td>Class I</td><td colspan="7">Cap≤50pF, DF≤1.5×(150/CR+7)×10^{-4}; Cap≥50pF, DF≤0.15%</td><td></td></tr>
<tr><td>Class II</td><td colspan="7"><table>
<tr><td>Rated voltage</td><td>≥100V</td><td>50V</td><td>25V</td><td>16V</td><td>10V</td><td>6.3V</td></tr>
<tr><td rowspan="3">Except for Y5V and Z5U, other temperature characteristics, such as X7R/X5S</td><td rowspan="3">≤2.5%</td><td>≤3.5% (C<1μF)</td><td></td><td>≤5.0% (C<1μF)</td><td>≤7.5% (C≤3.3μF)</td><td>≤7.5% (C<3.3μF)</td></tr>
<tr><td>≤7.5% (1μF≤C<10μF)</td><td></td><td>≤7.5% (1μF≤C<10μF)</td><td>≤10.0% (C>3.3μF)</td><td>≤10.0% (C≥3.3μF)</td></tr>
<tr><td>≤10.0% (C≥10μF)</td><td></td><td>≤10.0% (C≥10μF)</td><td></td><td></td></tr>
<tr><td rowspan="3">Y5V
Z5U</td><td colspan="3">≥25V</td><td colspan="3">3.6V≤U_R<25V</td></tr>
<tr><td colspan="3">≤7.0% (C≤1μF)</td><td colspan="3" rowspan="2">≤12.5%</td></tr>
<tr><td colspan="3">≤9.0% (C>1μF)</td></tr>
</table></td></tr>
<tr><td rowspan="2">Insulation resistance (IR)</td><td>Class I</td><td colspan="2">C≤10nF,Ri≥10000MΩ
C>10nF,Ri*C_R≥100S</td><td>Rated voltage
Ur<1000V</td><td>Test voltage
Ur</td><td>testing time
60±5sec</td><td>Charge and discharge current
<50mA</td><td rowspan="2">environment
temperature:25±2°C
Humidity:<75%</td></tr>
<tr><td>Class II</td><td colspan="2">C≤25nF,Ri≥4000MΩ
C>25nF,Ri*CR>100S</td><td>Ur≥1000V</td><td>1000V</td><td>60±5sec</td><td><50mA</td></tr>
<tr><td>Dielectric strength (DWV)</td><td>Class I
Class II</td><td colspan="2">There should be no breakdown or damage to the medium
(Extremely designed products such as
1206X7R102K282NB,2211C0G150Z722
N.B.Its "test voltage" is1.1Ur)</td><td>Rated voltage
Ur<200V
200V≤Ur≤1000V
Ur>1000V</td><td>Test voltage
2.5Ur
1.5Ur
1.2Ur</td><td>Slow rise time
0sec
1~5sec
1~5sec</td><td>testing time
1~5sec
1~5sec
1~5sec</td><td>environment
temperature:25±2°C
Humidity:<75%
Charge and discharge current: ≤50mA</td></tr>
<tr><td rowspan="2">Capacity temperature coefficient
or
temperature characteristics</td><td>Class I</td><td colspan="2">C0G: 0±30ppm/°C</td><td colspan="5" rowspan="2">preprocessing(IIkind):150+0/-10°C,1hrs,place24±2hrsAfter initial measurement, according to the following temperature sequence, the temperature is stable30minAfter measurement (△CbyT3shall prevail)
step — Temperature (°C)
T1 — 20±2
T2 — Lower limit category temperature (e.g.X7R-55±3)
T3 — 20±2
T4 — Upper category temperature (e.g.X7R 125±2)
T1 — 20±2</td><td></td></tr>
<tr><td>Class II</td><td colspan="2">See the third digit in "Operating Temperature Range" number", such as "X7R", the third digit is "R",Right now"±15%".</td><td></td></tr>
<tr><td>Solderability</td><td>Class I
Class II</td><td colspan="2">No visible damage on appearance, tin rate≥95%</td><td colspan="5">Soak the capacitor in ethanol and rosin (account25%weight) solution, take it out in 80~120
Preheat at °C temperature10~30sec, and then immerse it in the solder solution. Immersion tin temperature:235±5°C; Tin immersion speed: 25±0.25mm/s Tin immersion time:2±0.5sec</td><td></td></tr>
</table>

Product technical specifications

Resistant to welding heat	Exterior	No visible damage, tin coating rate ≥95%	Soak the capacitor in ethanol and rosin (account25%weight) solution, take it out in 100~
	△C/C	Ikind:±0.5%or ±0.5pF, whichever is greater	200Preheat at ℃ temperature10±2min, and then immerse it in the solder solution.
		IIkind:X7R X6S X5R X7S: ±10% X7T: ±15% Y5V Z5U: ±20%	Immersion tin temperature:260±5℃; immersion tin speed: 25±0.25mm/s Tin dipping time:10±1sec
	DF	Same as initial standard	After taking it out, clean it with solvent, and10Observe under a microscope at magnification.
	IR	Same as initial standard	Place indoors after testing24±2hrsMeasure again later.
terminal electrode Adhesion strength	The terminal electrode does not peel off and there is no visible damage on the appearance.		Apply thrust:5N time:10±1sec speed:1±0.5mm/sec 
Bending strength	Exterior	no visible damage	Test substrate:PCB Bend depth:1mm Pressure speed:1±0.5mm/sec. Measurements should be made in the bent state. 
	△C/C	Ikind:±5%	
		IIkind:±10%	
temperature cycle	Exterior	no visible damage	preprocessing(IIkind):150+0/-10℃,1hrs,place24±2hrsNumber of post-initial measurement cycles:5times, one cycle is divided into the following4step:
	△C/C	Ikind:±1%or±1pF Whichever of the two is greater	
		IIkind:X7R X6S X5R X7S ±10% X7T ±15% Z5U Y5V ±20%	stage / Temperature℃ / time (minutes) No.1step / Limit category temperature / 30 No.2step / 20±2 / 3 No.3step / Limit category temperature / 30 No.4step / 20±2 / 3
	DF	Same as initial standard	
	IR	Same as initial standard	Place indoors after testing24±2hrsMeasure again later.
Steady state moisture test	Exterior	no visible damage	
	△C/C	Ikind:±2%or±1pF Whichever of the two is greater	
		IIkind:X7R X6S X5R X7S ±10% X7T ±15% Z5U Y5V ±30%	temperature:40±2℃ humidity:90~95%RH time:500+24/-0Hour
	DF	≤2times the initial standard	Storage conditions: Place at room temperature
	IR	Ikind:Ri≥2500MΩorRi*CR＞25S Whichever of the two is smaller	time:twenty fourHour(Ikind);48Hour(IIkind)
		IIkind:Ri≥1000MΩorRi*CR＞25S Whichever of the two is smaller	
Life test	Exterior	no visible damage	
	△C/C	Ikind:±2%or±1pF Whichever of the two is greater	Rated voltage / Apply voltage Ur<500V / 2Ur 500V≤Ur≤1000V / 1.5Ur Ur＞1000V / 1.2Ur
		IIkind:X7R X7T X6S X5R X7S ±20% Z5U Y5V ±30%	
	DF	≤2times the initial standard	Charge and discharge current:≤50mA
	IR	Ikind:Ri≥4000MΩorRi*CR＞40S Whichever of the two is smaller	Temperature: upper limit category temperature time:96±4Hour
		IIkind:Ri≥2000MΩorRi*CR＞50S Whichever of the two is smaller	Storage conditions: room temperature Placement time:twenty fourHour(Ikind);48Hour(IIkind)

Precautions for use

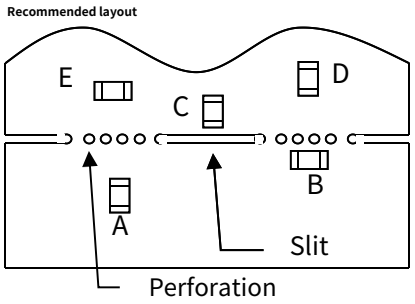
1. Precautions before use:

In the harsh working environment or external mechanical overpressure that exceeds the usage conditions stated in the relevant instructions of this acknowledgment, the MLCC chip may be damaged. Therefore, when using it, first consider applying according to the relevant instructions of this acknowledgment.

2. PC board design

2.1 The amount of solder used will affect the chip's ability to withstand mechanical stress, which may cause the MLCC to break or crack. Therefore, when designing a substrate, careful consideration must be given to the size and configuration of the pads, which determine the amount of solder that makes up the substrate.

2.2 When designing the location of the pads and SMD MLCC, consideration should be given to minimizing stress, and the MLCC should be installed at the least affected location on the PC board.



Stress value: A>B=C>D>E

3. Issues that should be considered during automatic installation

If the pickup tube is lowered beyond the lowest limit, excessive pressure will be exerted on the MLCC, causing the MLCC to rupture. When lowering the suction tube, pay attention to the following points:

3.1 After correcting the deviation of the PC board, the low limit of the pick-up tube should be adjusted to the horizontal position of the surface of the PC board.

3.2 The suction pressure should be adjusted to between 1 and 3N.

3.3 In order to reduce the deformation of the PC board caused by the impact force of the suction pipe, the support nails should be placed under the PC board.

4.Welding

4.l MLCC is a combination of ceramic and metal.

As a ceramic body, especially a large-sized ceramic body,

Its thermoplasticity is poor and its response to heat is relatively slow.

Ceramic bodies are prone to cracking when subjected to rapid cooling and heating.

It is recommended to conduct continuous preheating for more than 1 minute before welding.

4.2 The interior of MLCC is a metal electrode.

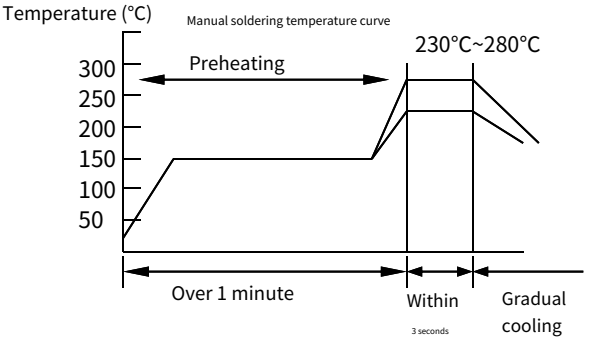
It is very thermoplastic and responds quickly to heat. Thus, in

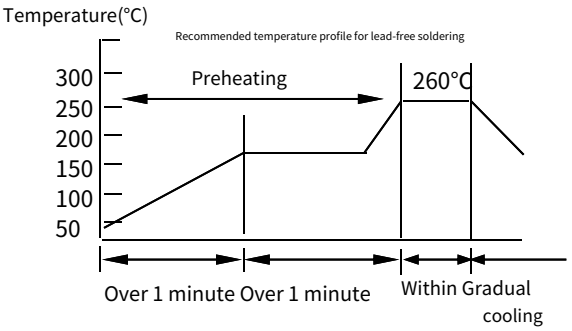
When heated, metal parts and ceramic parts are bound to

Expansion is inconsistent to a certain extent, resulting in internal

Internal stress can easily cause the porcelain body to crack. It is recommended that before welding

Perform continuous preheating for more than 1 minute.





4.3 When manual soldering, use the straight tip of the soldering iron with a constant temperature.

The maximum diameter is 1.0mm and the maximum power is 25 watts; the soldering iron cannot directly touch the MLCC components.

4.4 It is recommended to avoid using wave soldering for specifications above 1206.

5.Cleaning

5.1 The temperature difference between the components and the cleaning process cannot be greater than 100°C.

5.2 In the case of ultrasonic cleaning, too much output power will cause the PC board to undergo excessive vibration, which will cause the MLCC or solder joints to crack, or reduce the strength of the terminal electrodes. Therefore, special attention should be paid to the following points:

Ultrasonic output: less than 20W/L; ultrasonic frequency: less than 40KHz; ultrasonic cleaning time: 5 minutes or less

6. Cutting PCB board

6.1 After installing the MLCC and other components, when dividing the PC board, be careful not to apply any force on the board. MLCC cannot be allowed to withstand excessive mechanical shock.

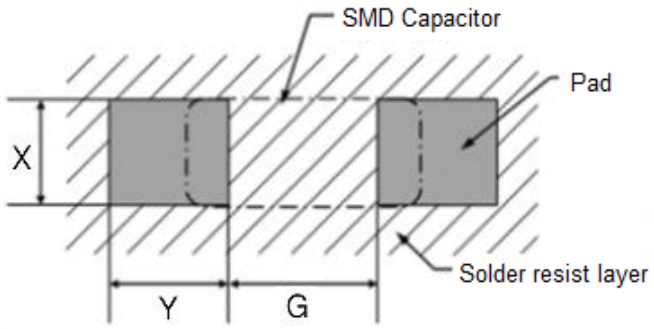
6.2 The segmentation of boards cannot be done manually and appropriate equipment should be used.

7. Storage method

In order to maintain the solderability of the terminal electrodes and ensure that the packaging materials are in good condition, the recommended storage conditions are as follows: Storage temperature: 5-40°C; Storage relative humidity: 20-70%RH

Even when stored under ideal storage conditions, MLCC tip solderability will degrade over time, so MLCCs should be used within 6 months from the date of shipment.

Pad recommendation



Reflow welding pad size mm

Dimensions	G		X		Y	
	min	max	min	max	min	max
01005	0.16	0.20	0.20	0.23	0.12	0.18
0201	0.20	0.30	0.25	0.40	0.20	0.30
0402	0.40	0.60	0.40	0.60	0.30	0.50
0603	0.50	1.00	0.60	1.00	0.60	0.80
0805	0.60	1.20	0.90	1.60	0.70	1.30
1206	1.80	2.50	1.20	2.00	1.00	1.60
1210	1.80	2.50	1.80	3.20	1.00	1.60
1812	2.50	3.70	2.30	3.50	1.20	1.90
2220	3.20	4.70	3.50	5.00	1.20	2.30
2225	3.20	4.70	3.50	6.80	1.20	2.30
3035	3.30	6.00	8.00	9.50	1.60	3.00
4045	7.00	8.60	10.80	12.00	1.60	3.00
5868	11.50	13.20	16.50	18.20	1.60	3.00