EYANG

High-Q, High-Frequency Multilayer Ceramic Chip Capacitors

U0201C0G6R8C101NTA （0201,C0G,6.8 pF,DC 100 V)

1. Scope

This specification applies to High-Q, High-Frequency Multilayer Ceramic Chip Capacitors (MLCCs) .

Application Scope: Wearable devices, mobile phones, routers, PAs (Power Amplifiers) and related modules, Wi-Fi modules, 5G low-power base stations, IoT (Internet of Things) modules, and other radio frequency (RF) applications in mobile communications and network communications.

2. Part Number System

U	0201	C0G	6R8	C	101	N	T	A
①	②	③	④	⑤	⑥	⑦	Ⓑ	⑨
Series Code	Size Code	Temperature Characteristics	Nominal Capacitance	Capacitance Tolerance	Rated Voltage	Termination Type	Packaging Code	Thickness Code

① **Series Code** U - High-Q, High-Frequency MLCC （Internal Electrodes：Cu)

② **Size Code** (Unit: mm)

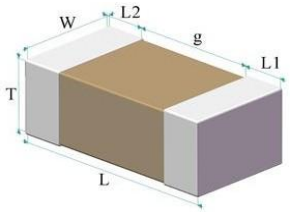


Fig.1 Structure & Dimension

Size Code	L	W	L1,L2	g	T	⑨ Thickness Code
0201	0.60 ± 0.03	0.30 ± 0.03	0.10-0.20	0.20 min	0.30 ± 0.03	**A**

③ **Temperature Characteristics**

Temperature Characteristics	Operating Temp. Range	Temperature Characteristics		
		Temp. coeff. or Cap. Change	Temp. Range	Ref. Temp.
C0G	-55 °C-125 °C	0±30 ppm/°C	25 °C-125 °C	25 °C

④ **Nominal Capacitance**

Code	Nominal Capacitance
6R8	6.8 pF

⑤ **Capacitance Tolerance**

Code	Capacitance Tolerance
C	±0.25 pF

⑥ **Rated Voltage**

Code	Voltage Values
101	DC 100 V

⑦ **Termination Type**

Code	Terminal Electrodes	Plating Material
N	Cu	Ni/Sn

Ⓑ **Packaging Code**

Code	Square Hole Spacing	Disc Size	Carrier Tape	QTY (Kpcs)
T	2 mm	7〃	Paper	15

3. Technical Specifications and Test Methods

1. Operating Environment

Temp. Characteristics	Temp. Range	Relative Humidity	Atmospheric Pressure
C0G	-55 ℃-125 ℃	≤95% (25 ℃)	86 kPa-106 kPa

3.2 Reliablility Test Specifications and Methods

Unless otherwise specified, the test methods in Table 1 are based on: GB/T 21041 and GB/T 21042 (IDT IEC 6038)

Table 1: Specifications and Methods

No.	Item	Specification	Test Method
1	Appearance	No obvious defects on ceramic body and termination.	Visual examination under a microscope
2	Size Code	See Fig.1 and ② Size Code	Measuring by gages which precision is not less than 0.01 mm.
3	Capacitance	Within the specified tolerance	Measurement Temperature 18 ℃-28 ℃ Relative Humidity ≤80% RH Measurement Frequency C ≤ 1nF, f = 1.0 ± 0.1 MHz C > 1 nF, f = 1.0 ± 0.1 KHz Measurement Voltage 1.0 ± 0.2 Vrms
4	Q	C ≥ 30 pF, Q ≥ 1000 C < 30 pF, Q ≥ 400 + 20 C C: Nominal Capacitance (pF)	
5	Insulation Resistance (IR)	≥10,000Mfi	Measurement Temperature 18 ℃-28 ℃ Relative Humidity ≤80% RH Measurement Voltage Rated Voltage Charging Time 1 min Charge/discharge current ≤50 mA
6	Voltage proof	No defects or abnormalities.	Test Voltage ≥3.0 × U_R Applied Time t = 1 -5 s Charge/discharge current ≤50 mA
7	Temprature characteristic of capacitance	C0G: αc ≤ ±30 ppm/℃(125 ℃) ; -72 ≤ αc ≤ +30 ppm/℃(-55 ℃)	Pre-drying 16-24 hours Measure the capacitance separately in 25 ℃, θ1, 25 ℃, θ2, 25 ℃, should satisfied relatived Temperature Coefficient of Capacitance (αc) . C0G θ1 = -55 ℃, θ2 = 125 ℃ T.C. Measurement Voltage 1.0 ± 0.2 Vrms
8	Resistance to soldering heat	Appearance No visible damage and terminations uncovered shall be less than 25%. Cap. Change ΔC/C ≤ ± 2.5% or ± 0.25 pF, (Whichever is larger) IR Initial specification Q Initial specification Voltage proof No defects or abnormalities.	Pre-heating Temp. : 120 ℃-150 ℃,Time: 60 s Test Method Solder bath Solder alloy Sn-Ag-Cu(Lead Free Solder) Temperature (270 ± 5) ℃ Duration of immersion (10±1) s Depth of immersion 10 mm Post-treatment Let sit for (24 ± 2) h at room temperature, then measure.

Table 1: Specifications and Methods

No.	Item	Specification		Test Method	
9	Solderability	Appearance	95% of the terminations is to be soldered evenly and continuously.	Pre-heating	Temp. : 80 °C-120 °C,Time: 10-30 s
				Test Method	Solder bath
				Flux	Solution of rosin ethanol
				Solder alloy	Sn-Ag-Cu (Lead Free Solder)
				Temperature	(245 ± 5) °C
				Duration of immersion	(2.0 ± 0.5) s
				Depth of immersion	10 mm
10	Substrate bending test	Appearance	No defects or abnormalities	Mounting method	Solder the capacitor to the test substrate as shown in Fig 2
		Cap. Change	ΔC/C ≤ ± 5% or ± 0.5 pF, (Whichever is larger)	Pressurization Method	Shown in Fig 3
				Flexure	1 mm
				Holding Time	(5 ± 1) s
				then measure the capacitance	
11	Adhesive strength of termination	Appearance	No defects or abnormalities	Subjected to 3 cycles of lead-free reflow at 260 °C (standard profile) for thermal shock testing, with ~30 minutes between cycles.	
				Mounting method	Solder the capacitor to the test substrate and apply the normal force F indicated in Fig. 4
				Holding Time	t = (10 ± 1) s
				Pushing force	0201: F = 2 N
12	Vibration	Appearance	No defects or abnormalities	Mounting method	Solder the capacitor to the test substrate
		Cap. Change	Initial specification	Amplitude	1.5 mm
		IR	Initial specification	Kind of Vibration	A simple harmonic motion
		Q	Initial specification	Frequency	10 Hz-55 Hz-10 Hz
				Vibration Time	1 min
				Repeat this for 2 hours each in 3 perpendicular directions X, Y, Z, total 6 hours.	

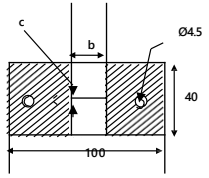


Fig. 2

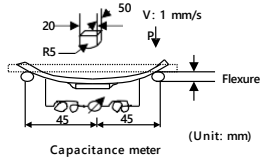


Fig. 3

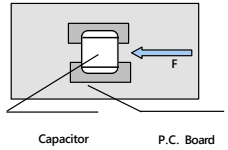


Fig. 4

Table 1: Specifications and Methods

<table>
<tr><th>No.</th><th>Item</th><th colspan="2">Specification</th><th colspan="2">Test Method</th></tr>
<tr><td rowspan="5">13</td><td rowspan="5">Rapid change of temperature</td><td>Appearance</td><td>No defects or abnormalities</td><td colspan="2">Subjected to 3 cycles of lead-free reflow at 260 °C (standard profile) for thermal shock testing, with ~30 minutes between cycles.</td></tr>
<tr><td>Cap. Change</td><td>ΔC/C ≤ ± 2.5% or ± 0.25 pF, (Whichever is larger)</td><td>Mounting method</td><td>Solder the capacitor to the test substrate</td></tr>
<tr><td>IR</td><td>Initial specification</td><td>The number of cycles</td><td>100 cycles</td></tr>
<tr><td>Q</td><td>Initial specification</td><td>Temperature Step</td><td></td></tr>
<tr><td>Voltage proof</td><td>No defects or abnormalities.</td><td colspan="2"><table><tr><th>Step</th><th>Temp.(°C)</th><th>Time (min)</th></tr><tr><td>1</td><td>-55</td><td>30 ± 3</td></tr><tr><td>2</td><td>25</td><td>2-5</td></tr><tr><td>3</td><td>125</td><td>30 ± 3</td></tr><tr><td>4</td><td>25</td><td>2-5</td></tr></table></td></tr>
<tr><td colspan="4"></td><td>Post-treatment</td><td>Let sit for (24 ± 2) h at room temperature, then measure.</td></tr>
<tr><td rowspan="4">14</td><td rowspan="4">Damp heat, steady state</td><td>Appearance</td><td>No defects or abnormalities</td><td colspan="2">Subjected to 3 cycles of lead-free reflow at 260 °C (standard profile) for thermal shock testing, with ~30 minutes between cycles.</td></tr>
<tr><td>Cap. Change</td><td>ΔC/C ≤ ± 7.5% or 0.75 pF, (Whichever is larger)</td><td>Mounting method</td><td>Solder the capacitor to the test substrate</td></tr>
<tr><td>IR</td><td>≥ 500 Mfi</td><td>Test Temperature</td><td>(60 ± 2) °C</td></tr>
<tr><td>Q</td><td>C ≥ 30 pF, Q ≥ 200
C＜ 30 pF, Q ≥ 100 + 10 C/3
C: Nominal Capacitance (pF)</td><td>Test Humidity
Test Time
Post-treatment</td><td>90%–95% RH
(500 ± 12) h
Let sit for (24 ± 2) h at room temperature, then measure.</td></tr>
<tr><td rowspan="5">15</td><td rowspan="5">High temperature high humidity (steady)</td><td>Appearance</td><td>No defects or abnormalities</td><td colspan="2">Subjected to 3 cycles of lead-free reflow at 260 °C (standard profile) for thermal shock testing, with ~30 minutes between cycles.</td></tr>
<tr><td>Cap. Change</td><td>ΔC/C ≤ ± 7.5% or 0.75 pF, (Whichever is larger)</td><td>Mounting method</td><td>Solder the capacitor to the test substrate</td></tr>
<tr><td>IR</td><td>≥ 500 Mfi</td><td>Test Temperature</td><td>(60 ± 2) °C</td></tr>
<tr><td>Q</td><td>C ≥ 30 pF, Q ≥ 200
C＜ 30 pF, Q ≥ 100 + 10 C/3
C: Nominal Capacitance (pF)</td><td>Test Humidity
Test Voltage
Test Time
Charge/discharge curren
Post-treatment</td><td>90%–95% RH
1.0 × U_R
(500 ± 12) h
≤ 50 mA
Let sit for (24 ± 2) h at room temperature, then measure.</td></tr>
<tr><td rowspan="5">16</td><td rowspan="5">Endurance</td><td>Appearance</td><td>No defects or abnormalities</td><td colspan="2">Subjected to 3 cycles of lead-free reflow at 260 °C (standard profile) for thermal shock testing, with ~30 minutes between cycles.</td></tr>
<tr><td>Cap. Change</td><td>ΔC/C ≤ ± 2% or ± 0.2 pF, (Whichever is larger)</td><td>Mounting method</td><td>Solder the capacitor to the test substrate</td></tr>
<tr><td>IR</td><td>≥ 1000 Mfi</td><td>Test Temperature</td><td>125 °C ± 3 °C</td></tr>
<tr><td>Q</td><td>C ≥ 30 pF, Q ≥ 350
10 pF ＜ C＜ 30 pF, Q ≥ 275 + 5 C/2
C ≤ 10 pF, Q ≥ 200 + 10 C
C: Nominal Capacitance (pF)</td><td>Test Voltage
Test Time
Charge/discharge curren
Post-treatment</td><td>2.0 × U_R
(1000 ± 12) h
≤ 50 mA
Let sit for (24 ± 2) h at room temperature, then measure.</td></tr>
</table>

Table 1: Specifications and Methods

No.	Item	Specification	Test Method	
17	ESR	See test report	Measurement Frequency	500MHz-3GHz
			Measurement Temperature	Room Temperature
			Measurement Instrument	Keysight 4991B
18	SRF	See test report	Measurement Temperature	Room Temperature
			Measurement Instrument	Keysight 4991B/5080B

4. Packaging,Shipment and storage

4.1 Packaging

4.1.1 packaging type

Reel Packaging (standard carrier tape disc packaging), single disc smallest package see Ⓑ Packaging Code

First packaging: Each multi-disc material is packed into a box.

The second packaging: the first packaged packaging box is loaded into the paper packaging box,and the remaining space in the box is filled with light auxiliary materials.

The above packaging forms can also be packaged according to user needs.

4.1.2 Carrier Tape size

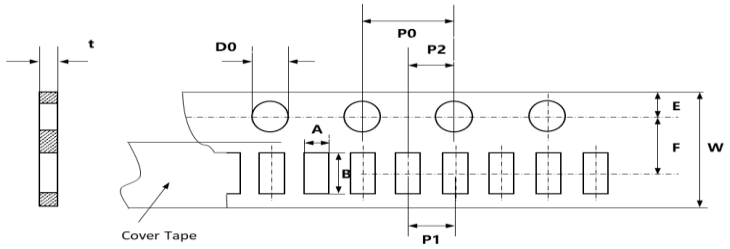


Fig. 5-1 0402 (Paper tape/ 2 mm pitch)

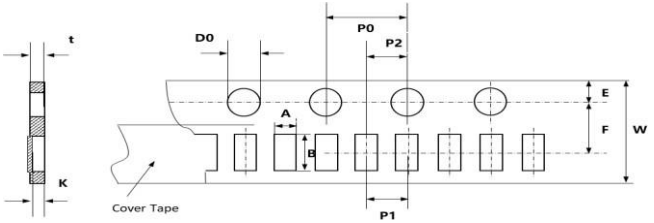


Fig. 5-2 0105, 0201 (Paper tape/ 2 mm pitch)

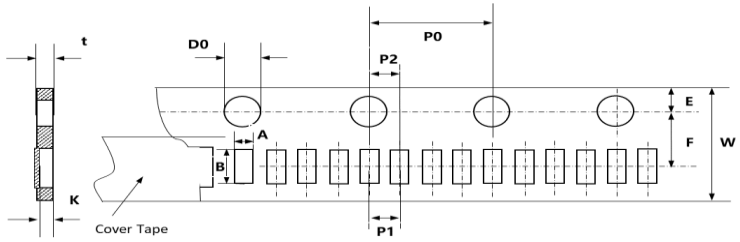


Fig. 5-3 0201 (Paper tape/ 1 mm pitch)

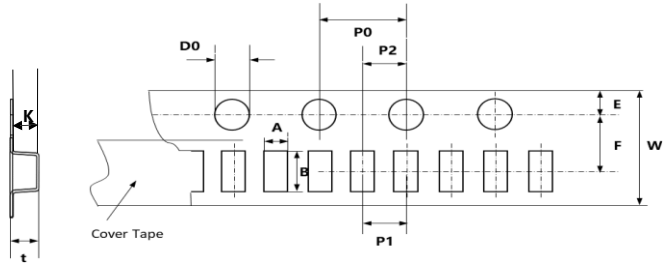


Fig. 5-4 0105 (Plastic tape/ 1 mm pitch)

Table 2-1: Carrier size (Size Code:0105, 0201, 0402) (Unit:mm)

Size Code	Thickness code	Carrier Tape Type	Packaging Code	A	B	F	P1	E	D0	P2	K	W	P0	t
0105	Z	Paper	T	0.24 ± 0.02	0.45 ± 0.02	3.50 ± 0.05	2.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	2.00 ± 0.05	0.24 ± 0.02	8.00 ± 0.10	4.00 ± 0.10	0.5 max
0105	Z	Paper	H	0.24 ± 0.02	0.45 ± 0.02	3.50 ± 0.05	2.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	2.00 ± 0.05	0.24 ± 0.02	8.00 ± 0.10	4.00 ± 0.10	0.5 max
0105	Z	Plastic	P	0.24 ± 0.02	0.45 ± 0.02	1.80 ± 0.05	1.00 ± 0.05	0.90 ± 0.10	0.80 ± 0.05	1.00 ± 0.05	0.24 ± 0.02	4.00 ± 0.10	2.00 ± 0.10	0.5 max
0201	A	Paper	T	0.38 ± 0.03	0.68 ± 0.03	3.50 ± 0.05	2.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	2.00 ± 0.05	0.36 ± 0.02	8.00 ± 0.10	4.00 ± 0.10	0.5 max
0201	A	Paper	J	0.38 ± 0.03	0.68 ± 0.03	3.50 ± 0.05	2.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	2.00 ± 0.05	0.36 ± 0.02	8.00 ± 0.10	4.00 ± 0.10	0.5 max
0201	A	Paper	D	0.38 ± 0.03	0.68 ± 0.03	3.50 ± 0.05	1.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	1.00 ± 0.05	0.36 ± 0.02	8.00 ± 0.10	4.00 ± 0.10	0.5 max
0201	A	Paper	L	0.38 ± 0.03	0.68 ± 0.03	3.50 ± 0.05	1.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	1.00 ± 0.05	0.36 ± 0.02	8.00 ± 0.10	4.00 ± 0.10	0.5 max
0402	B	Paper	T	0.63 ± 0.05	1.13 ± 0.05	3.50 ± 0.05	2.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	2.00 ± 0.05	/	8.00 ± 0.10	4.00 ± 0.10	0.8 max
0402	B	Paper	J	0.63 ± 0.05	1.13 ± 0.05	3.50 ± 0.05	2.00 ± 0.05	1.75 ± 0.10	1.55 ± 0.05	2.00 ± 0.05	/	8.00 ± 0.10	4.00 ± 0.10	0.8 max

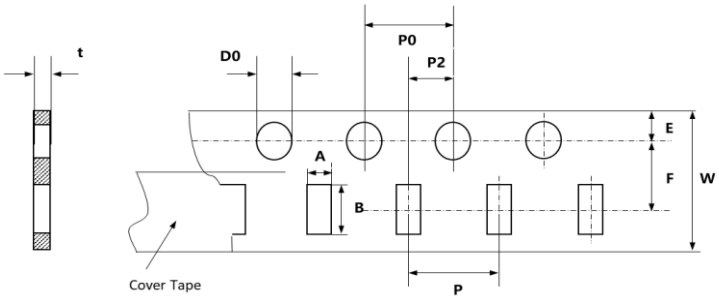


Fig. 5-5 0603 (Paper tape)

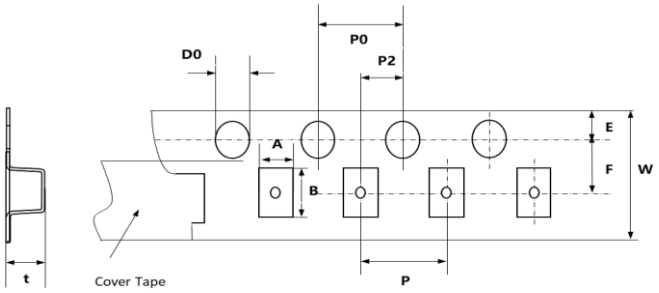


Fig. 5-6 0603 (Plastic tape)

Table 2-2: Carrier size (Size Code:0603 min) (Unit:mm)

Size Code	Thickness code	Carrier Tape Type	Packaging Code	A	B	F	P	E	D0	P2	K	W	P0	t
0603	U	Paper	T	1.00 ± 0.10	1.80 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	1.75 ± 0.10	1.55 ± 0.05	2.00 ± 0.05	/	8.00 ± 0.20	4.00 ± 0.10	0.95 max

4.1.3 Disc size

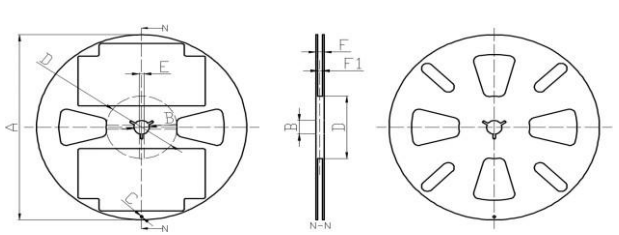


Fig. 6-1 Disc (Width of carrier-4 mm)

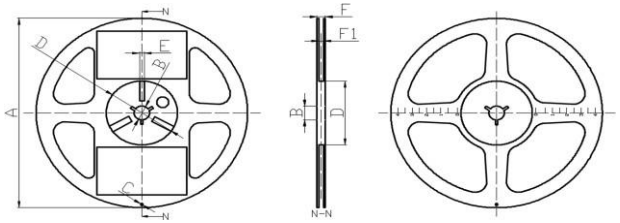


Fig. 6-2 Disc (Width of carrier-8 mm)

Table 3: Disc size (Unit:mm)

Disc size	Width of carrier	A	B	C	D	E	F	F1	Size Code
7″	8.00 ± 0.10	Φ178 ± 2.0	Φ13 ± 1.0	Φ4.0 ± 0.5	Φ60 ± 2.0	4.0 ± 1.0	11.5 ± 1.0	10.0 ± 2.0	All
13″	8.00 ± 0.10	Φ330 ± 2.0	Φ13 ± 1.0	Φ4.0 ± 0.5	Φ108 ± 2.0	4.0 ± 1.0	13.5 ± 2.0	10.0 ± 2.0	All
7″	4.00 ± 0.10	Φ178 ± 2.0	Φ13 ± 1.0	Φ4.0 ± 0.5	Φ60 ± 2.0	3.5 ± 0.5	7.3 ± 0.5	4.5 ± 1.0	0105

4.1.4 Carrier Tape specifications

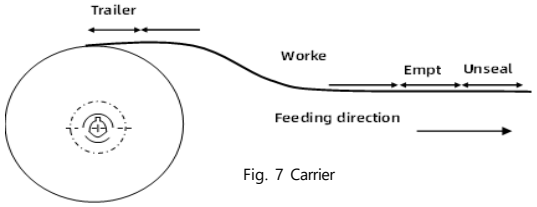


Fig. 7 Carrier

Packaging	The minimum length of the reserved spaces		
Carrier	Trailer	Empty	Unseal
	60 mm	200 mm	160 mm

4.1.5 Performance of Carrier Taping

4.1.5.1 Strength of Carrier Tape and Top Cover Tape

a. Carrier Tape

When a tensile force 1.02 kgf is applied in the direction to unreel the tape, the tape shall withstand this force.

b. Top cover Tape

When a tensile force 1.02 kgf is applied to the tape, the tape shall withstand this force.

4.1.5.2 Peeling Strength of Top Cover Tape

Unless otherwise specified, the peeling strength of top cover tape shall be within 10.2 gf to 71.4 gf when the top cover tape is pulled at a speed of 300 mm/min with the angle of 0° to 15° (see Fig.8).

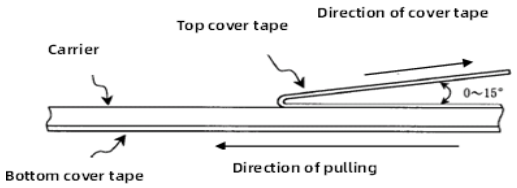


Fig.8 Cover tape peel-off force

2. Shipment

Transport packaging products to adapt to the modern means of transport, but the product in the process of transport to prevent rain and acid and alkali corrosion, shall not be whipped extrusion casting and gravity.

3. Storage

1. Storage conditions:

   The recommended temperature is less than 30 ℃.

   A temperature is 5 ℃ to 40 ℃ and a relative humidity is 20% to 70% as a standard condition.(MSL Level 1)

   MLCC may be affected by the storage conditions. Please use them promptly after delivery.

   High temperature and humidity conditions and/or prolonged storage may cause deterioration of the packaging materials.

   If more than one year has elapsed since delivery, also check the solderability before use.

2. Corrosive gas can react with the termination (external) electrodes or lead wires of capacitors, and result in poor solderability.

   Do not store the capacitors in an atmosphere consisting of corrosive gas (e.g.,hydrogen sulfide, sulfur dioxide, chlorine, ammonia gas etc.)

5. MLCC Application of Technical Requirements

5.1 Circuit Design

5.1.1 Operating Temperature

a. Do not use capacitor above the maximum allowable operating temperature.

b. Surface temperature including self-heating should be below maximum operating temperature.

5.1.2 Operating Voltage

The operating voltage for capacitors must always be lower than their rated voltage.

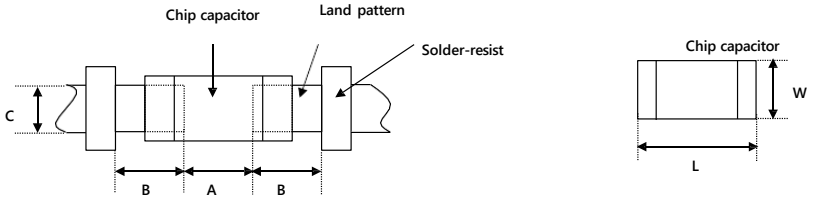
5.2 PCB Design

5.2.1 Design of Land-patterns

When the capacitors are mounted on a PCB, the amount of solder at the terminations has a direct effect on the performance of the capacitors.

The greater the amount of solder, the higher the stress on the capacitor. Therefore, when designing land-patterns, it is necessary to consider the appropriate size and configuration of the solder pads.

Size and recommended land dimensions are shown in the following figure and table.

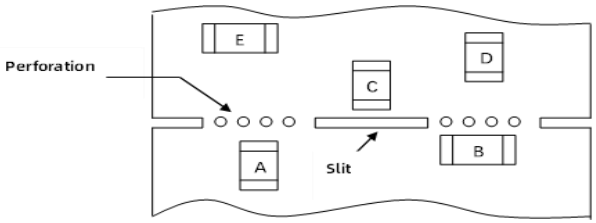


Recommended land dimensions for reflow-soldering (unit: mm)

Size Code	Length	Width	Tolerance	A	B	C
0105	0.4	0.2	all	0.16 - 0.20	0.12 - 0.18	0.20 - 0.23
0201	0.6	0.3	±0.03	0.20-0.25	0.20-0.30	0.20-0.35
0201	0.6	0.3	±0.05	0.20-0.25	0.25-0.35	0.30-0.40
0201	0.6	0.3	±0.09,±0.1	0.23-0.30	0.25-0.35	0.30-0.40
0402	1.0	0.5	±0.05	0.30-0.50	0.35-0.45	0.40-0.60
0402	1.0	0.5	±0.15, ±0.20	0.40-0.60	0.40-0.50	0.50-0.70
0402	1.0	0.5	±0.30	0.40-0.60	0.40-0.50	0.50-0.80
0603	1.6	0.8	±0.10	0.60-0.80	0.60-0.70	0.60-0.80
0603	1.6	0.8	±0.20	0.70-0.90	0.70-0.80	0.80-1.00
0603	1.6	0.8	±0.25, ±0.30	0.70-0.90	0.70-0.90	0.80-1.10

5.2.2 Capacitor Layout on PC Board

Mechanical stress varies according to the location of capacitors on PC board. The recommendation for better design is as follows

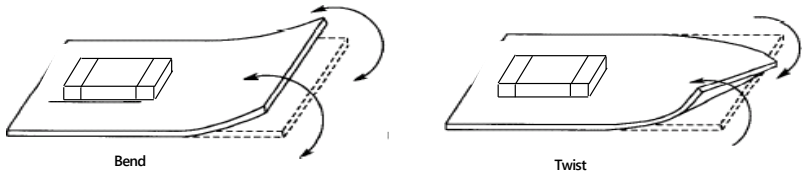


The stress in capacitors is in the following order: A > B = C > D > E

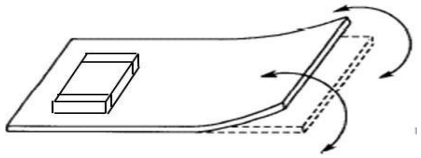
Pay attention not to bend or distort the PC board otherwise the capacitor may crack.

Please refer to the following examples of good and bad capacitors layout.

a. Not recommended

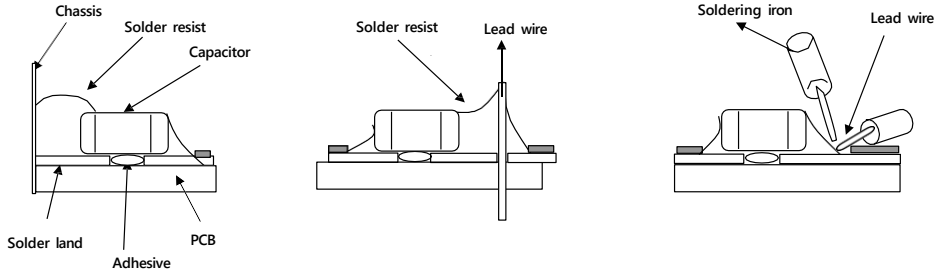


b.Recommended

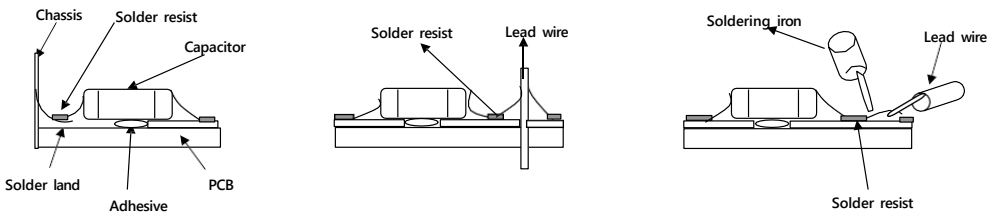


5.2.3 Solder Buildup and Soldering

a. Examples of soldering method not recommended



b. Examples of soldering method recommended



5.3 Consideration for Automatic Placement

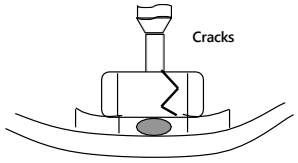
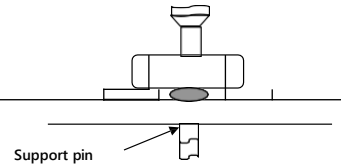
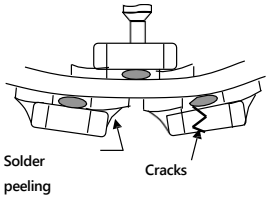
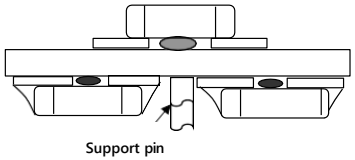
If the mounting head is adjusted too low, it may induce excessive stress in the chip capacitor to result in cracking. Please take following precautions

a. Adjust the bottom dead center of the mounting head to reach on the PC board surface and not press it；

b. Adjust the mounting head pressure to be 1N to 3N of static weight；

c. To minimize the impact energy from mounting head, it is important to provide support from the bottom side of the PC board.

Please refer to the following samples

Mounting	Not recommended	Recommended
Singel-sided Mounting		
Double-sided Mounting		

4. Soldering

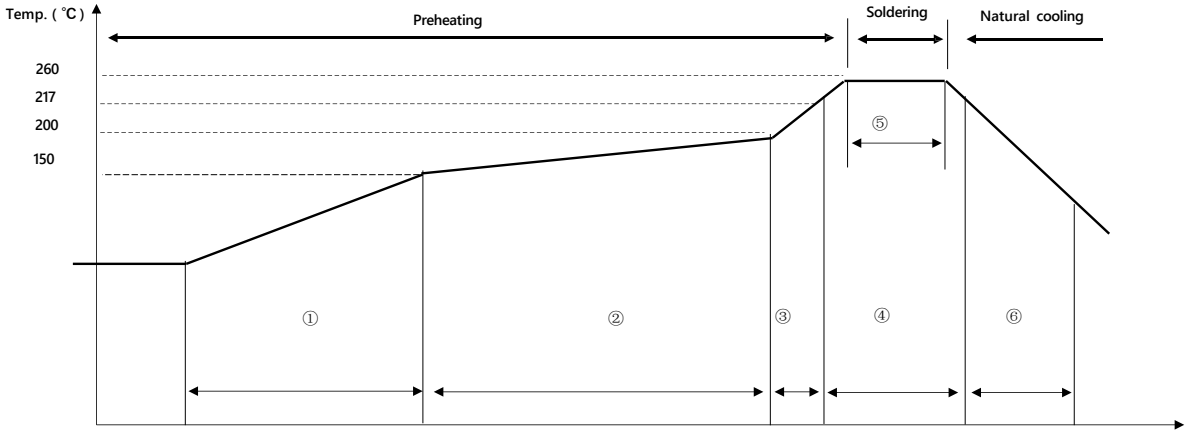
1. Flux Selection

a. It is recommended to use a mildly activated rosin flux (less than 0.1wt% chlorine). Strong flux is not recommended.

b. Please provide proper amount of flux. Excessive flux must be avoided.

c. When water-soluble flux is used, enough washing is necessary.

5.4.2 Recommended Soldering Profile



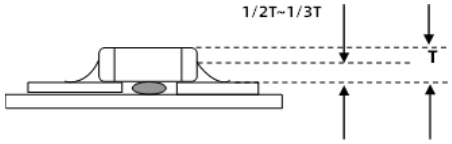
5.4.2.1 Reflow Soldering Condition

NO.	Reflow Soldering zone	Reflow Soldering Condition
①	Preheating 1	≤ 3 ℃/s, ≥ 60 s
②	Constant temperature	150℃- 200℃, 60 s-120 s, ≤1 ℃/s
③	Preheating 1	1-5 ℃/s
④	Soldering 1	Above 217 ℃, 60-150 s
⑤	Soldering 1	Above 260 ℃,over 10 s
⑥	Natural cooling	≤6 ℃/s

Caution

a.Excessive solder will induce higher tensile force in chip capacitor when temperature changes and result in cracking. Insufficient solder may detach the capacitor from the PC board.

The ideal condition is to have solder mass controlled to 1/2 to 1/3 of the thickness of the capacitors.



b.Soldering duration should be kept as close to recommended times as possible, because excessive duration can detrimentally affect solderability.

c.The peak temperature of reflow soldering is 245 ℃ ± 15 ℃.

6. All products in this specification comply with the EU RoHS directive

The EU RoHS Directive refers to the "Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment" stipulated by the European Union.

ORIGINAL MFG PART No.: **U0201C0G6R8C101NTA**

Image shown is a representation only.
Exact specifications should be obtained from the product dimension

PRODUCT NAME:	High-Q, High-Frequency MLCC U Series SMD 0201 C0G 6.8pF ±0.25pF 100V
REVISION:	A3
NEXTGEN ORDER PART CODE*:	U0201N6R8C101A
CROSS REF. PART NO.:	
ORIGINAL MFG PART NO.:	U0201C0G6R8C101NTA
ORIGINAL MANUFACTURER:	EYang Technology/Eyang MLCC

**: Please Indicate this Part Code For RFQ/Order Support*

HOW TO ORDER

Please Follow Up Part Code Guide And Indicate NextGen Part Code U0201N6R8C101A For RFQ and new Order.

RFQ
Request For Quotation

CODE	NAME	KEY SPECIFICATION OPTION
U	Series Code	U: High-Q, High-Frequency Multilayer Ceramic Chip Capacitors
0201	Case Size	0105 : L0.40*W0.20mm; 0201 : L0.60*W0.30mm; 0402 : L1.00*W0.50mm; 0603 : L1.60*W0.80mm 0805 : L2.00*W1.25mm; 1206 : L3.20*W1.60mm; 1210 : L3.20*W2.50mm
N	Temperature Characteristics	N: NP0 (C0G); B: X7R; W: X5R; S: X6S; Y: Y5V; T: X7S; R: X7T
6R8	Capacitance	Two significant digits followed by number of Zero, The 3rd digit signifies the multiplying factor, and letter R is decimal point. 6R8: 6.8pF; 220: 22pF; 102: 1nF; 150: 15pF; 180: 18pF; 475: 4.7µF
C	Capacitance Tolerance	A: ±0.05pF; B: ±0.1pF; C: ±0.25pF; D: ±0.5pF; F: ±1%; G: ±2%; J: ±5%; K: ±10% L: ±15%; M: ±20%; N: ±30%; P: ±0.02pF; X: ±40%; S: 50%/-20%; Y: 150%/-20% Z: 80%/-20%
101	Rated Voltage	Two significant digits followed by No. of zeros. “R” is in place of decimal point. 6R3: 6.3VDC; 160: 16 VDC; 250: 25 VDC; 100: 10 VDC; 500: 50 VDC; 101: 100VDC
A	Case Thickness	A: 0.5mm Max, See Page 6 (T’s Symbol) for Different part code
XX	Internal Control Code	Blank: N/A; XX: Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters

IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
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