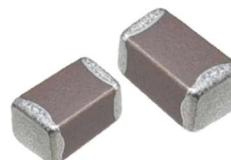


MULTILAYER CERAMIC CHIP CAPACITORS



Common characteristic

- Meets the IEC60384 standard
- Certified as lead-free
- Halogen-free
- Non-polarity

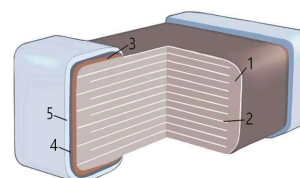


Applications

- General electronic equipment.
- Mobile devices
- Servers, computers, tablets
- Power supply circuits

Product Structure Diagram

Serial number	Designation
1	Dielectric ceramics
2	Inner electrode (nickel)
3	Outer electrode (copper)
4	Nickel layer
5	Tin layer



Dielectric material characteristics

Material	Temperature range	Capacitance tolerance
C0G	-55°C~+125°C	0±30 ppm/°C
X7R	-55°C~+125°C	±15%
X5R	-55°C~+85°C	±15%

Product model naming rules

KSE - CC 1206 - 0.01uF 50V C0G 5%
 1 2 3 4 5 6 7

1. KSE: KEEN SIDE electronics
2. Serie: CC = Multilayer ceramic capacitors SMD
3. Case: 0201, 0402, 0603, 0805, 1206, 1210 (EIA)
4. Capacity: 0.01uF, 470pF
5. Rated voltage: 50V, 6.3V, 1KV etc.
6. Dielectric material: C0G, X7R, X5R
7. Capacitance tolerance: 5%, 10%, 0.25pF

Examples:

KSE-CC0603-4.7pF 50V C0G 0.25pF
 KSE-CC1206-0.01uF 1KV X7R 10%

Methods of transportation and storage

1. Transportation:

Packaged products suitable for modern transportation, in the process of transportation to prevent rain and acid and alkali corrosion, gravity throwing and force extrusion.

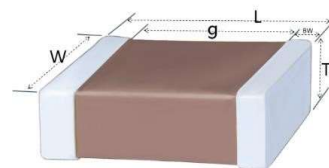
2. Storage:

The storage period to ensure good weldability of the product is one year from the date of production. Do not open the braid before use of the product (in the case of packaging and delivery). After the braid is opened, the product should be used within three months.

Size & Packing Specifications

Generally, a $\Phi 180\text{mm}$ (7") tray is used for packing.

Each 5 disks is packed into a box, and each 12 boxes is a whole box.



Specification	Size (mm)				Packing (7")			
	Length (L)	Width (W)	Thickness (T)	Length (g)	Number of pieces	Tape Method		
01R5	0.40±0.02	0.20±0.02	0.20±0.02	0.13	20,000	Paper tape		
0201	0.60±0.03	0.30±0.03	0.30±0.03	0.20	15,000	Paper tape		
	0.60+0.10/-0.03	0.30+0.10/-0.03	0.30+0.10/-0.03					
0402	1.00±0.05	0.50±0.05	0.50±0.05	0.30	10,000	Paper tape		
	1.00±0.07	0.50±0.07	0.50±0.07					
	1.00±0.10	0.50±0.10	0.50±0.10					
	1.00+0.20/-0.05	0.50+0.20/-0.05	0.50+0.20/-0.05					
0603	1.60±0.10	0.80±0.10	0.80±0.10	0.60	4,000	Paper tape		
	1.60±0.20	0.80±0.20	0.80±0.20					
0805	2.00±0.10	1.25±0.10	0.60±0.10	0.70	4,000	Paper tape		
			0.85±0.10					
	2.00±0.20	1.25±0.20	1.25±0.20				3,000/2,000	Plastic tape
1206	3.20±0.20	1.60±0.20	0.85±0.10	1.50	4,000	Paper tape		
			1.25±0.20				3,000/2,000	Plastic tape
			1.60±0.20				2,000	Plastic tape
	3.20±0.30	1.60±0.30	1.60±0.30				2,000	Plastic tape
1210	3.20±0.30	2.50±0.20	0.85±0.10	1.50	2,000	Plastic tape		
			1.25±0.20				2,000	Plastic tape
			1.60±0.20				2,000	Plastic tape
			2.00±0.20				2,000/1,000	Plastic tape
	3.20±0.40	2.50±0.30	2.50±0.30				2,000/1,000	Plastic tape

Capacitance Range

The X7R, X5R groups normally adopt the E12 series, and the C0G group adopts the E24 series. The specifications below 10pF allow the use of integer nominal values, such as: 1.0pF, 2.0pF, 3.0pF, etc.

【C0G】 01005~1210

Size (inch)	Thick (code)	RV (Vdc)	CSA Series - C0G																												
			R20	R30	R47	1R0	2R2	4R7	100	150	220	330	390	470	680	101	221	331	471	681	102	152	222	332	472	682	103	223	473	104	
01005	0.20 (D)	16																													
		25																													
0201	0.30 (E)	25																													
		50																													
0402	0.50 (D)	16																													
		25																													
		50																													
		100																													
0603	0.80 (J)	25																													
		50																													
		100																													
		250																													
0805	0.60 (H)	50																													
		100																													
		250																													
		500																													
0805	0.85 (K)	50																													
		250																													
		1000																													
		1000																													
1206	0.85 (K)	50																													
		100																													
		500																													
		630																													
1206	1.25 (M)	50																													
		2000																													
		50																													
		630																													
1210	0.85 (K)	250																													
		500																													
		2000																													
		2000																													
1210	1.25 (M)	50																													
		2000																													

【X7R】 01005~0805

Size (inch)	Thick (code)	RV (Vdc)	CSA Series - X7R/X7S/X7T																											
			101	151	221	331	471	681	102	152	222	332	472	682	103	223	473	683	104	224	474	105	225	475	106					
1005	0.20(D)	25																												
0201	0.30 (E)	6.3																												
		10																												
		16																												
		25																												
		50																												
0402	0.50 (G)	6.3																												
		10																												
		16																												
		25																												
		50																												
		100																												
0603	0.80 (J)	6.3																											X7T	
		10																												
		16																												
		25																												
		50																												
		100																												
0805	0.85 (K)	10																												
		16																												
		25																												
		50																												
		100																												
		250																												
0805	1.25 (M)	6.3																												
		10																												
		16																												
		25																												
		50																												
		100																												
		250																												
		1000																												

【X7R】 1206~1210

Size (inch)	Thick (code)	RV (Vdc)	CSA Series - X7R/X7S																			
			101	221	331	471	102	222	472	103	223	473	104	224	474	105	225	475	106	226	476	
1206	0.85 (K)	50																				
		100																				
		250																				
		500																				
		630																				
		1000																				
	2000																					
	1.25 (M)	16																				
		25																				
50																						
100																						
250																						
500																						
1.60 (N)	630																					
	1000																					
	2000																					
	10																					
	16																					
	25																					
1210	1.25 (M)	50																				
		250																				
		500																				
		630																				
	1.60 (N)	1000																				
		2000																				
		16																				
		25																				
	2.00 (Q)	50																				
		100																				
		250																				
		500																				
2.50 (R)	630																					
	6.3																					
	10																					
	16																					

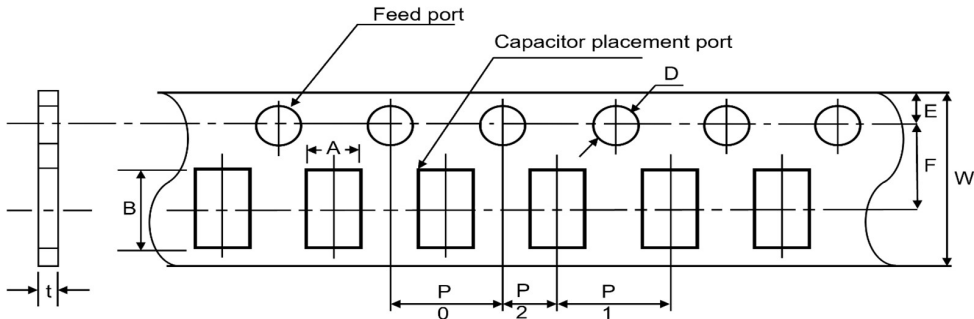
【X5R】 01005~1210

Size (inch)	Thick (code)	RV (Vdc)	CSA Series - X5R																		
			153	223	473	104	224	474	105	225	475	106	226	476	107						
01005	0.20 (D)	6.3																			
		10																			
0201	0.30 (E)	6.3																			
		10																			
		16																			
		25																			
0402	0.50 (G)	6.3																			
		10																			
		16																			
		25																			
0603	0.80 (J)	50																			
		6.3																			
		10																			
		16																			
0805	1.25 (M)	25																			
		50																			
		6.3																			
		10																			
1206	1.60 (N)	16																			
		25																			
		50																			
		6.3																			
1210	2.50 (R)	10																			
		16																			
		25																			
		50																			

Product Packaging

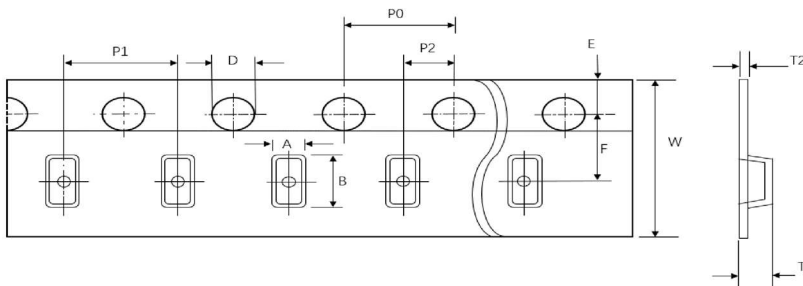
At present, the most common way of packaging is to carry coil packaging. A coil with a diameter of 180mm (7") can contain 1000~20000 capacitors, or coil packaging can be carried out according to customer requirements.

1. Tape Size



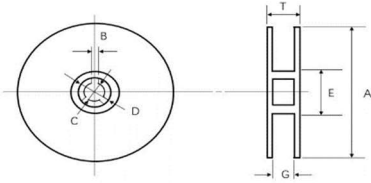
	01005 (0402)	0201 (0603)	0402 (1005)	0603 (1608)	0805 (2012)	1206 (3216)
P1	2.00±0.05(1.0 ±0.05)			4.00±0.10		
P0	4.00±0.10			4.00±0.10		
P2	2.00±0.05			2.00±0.05		
A	0.25±0.02	0.38±0.03	0.62±0.05	1.00±0.01	1.55±0.10	2.05±0.10
B	0.46±0.02	0.68±0.03	1.12±0.05	1.90±0.10	2.30±0.10	3.60±0.10
W	8.00±0.30			8.00±0.30		
E	1.75±0.10			1.75±0.10		
F	3.50±0.05			3.50±0.05		
D	φ1.50+0.10/-0.03			φ1.50+0.10/-0		
t	0.25±0.02	0.35±0.03	0.60±0.05	1.1Below		

2. Plastic Size



	0805 (2012)	1206 (3216)	1210 (3225)	1808 (4520)	1812 (4532)	2220 (5750)
P0	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10
P1	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	8.00±0.10	8.00±0.10
P2	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05
A	< 1.80	< 2.50	< 3.20	< 2.50	< 3.90	< 6.80
B	< 2.70	< 4.00	< 4.00	< 5.30	< 5.30	< 6.50
W	8.00±0.20	8.00±0.20	8.00±0.20	12.00±0.20	12.00±0.20	12.00±0.20
E	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10
F	3.5±0.05	3.5±0.05/5.50±0.05	3.5±0.05/5.50±0.05	5.50±0.05	5.50±0.05	5.50±0.05
D	1.5 (+0.1/-0.0)	1.5 (+0.1/-0.0)	1.5 (+0.1/-0.0)	1.5 (+0.1/-0.0)	1.5 (+0.1/-0.0)	1.5 (+0.1/-0.0)
T1	2.5 max.	2.5 max.	3.5 max.	2.5 max.	3.0 max.	3.1 max.
T2	0.23±0.05	0.23±0.05/0.95±0.05	0.23±0.05	0.30±0.1	0.30±0.1	0.30±0.1

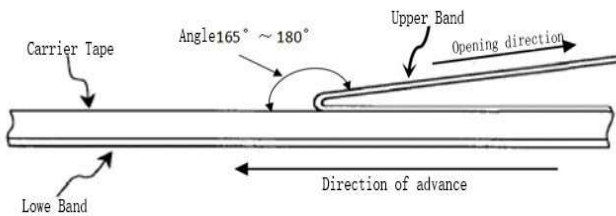
3. Disc size



Disk Size	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)	T (mm)
7"Reel	$\Phi 178 \pm 2.0$	2.0 ± 0.5	$\Phi 13 \pm 1.0$	$\Phi 21 \pm 0.8$	$\Phi 50$	10 ± 1.0	13 ± 1.0

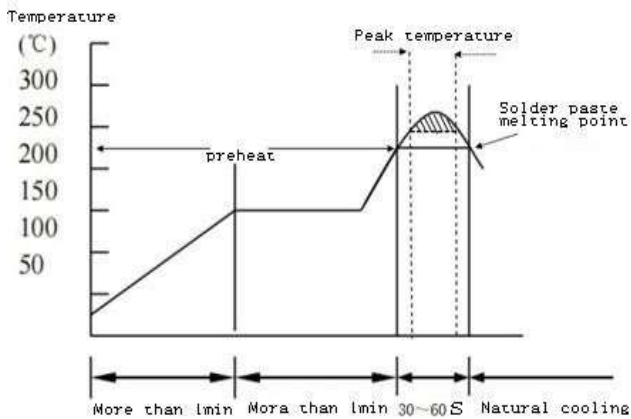
Instructions for use of reel tape

When the finished product is in use, the upper band (film) is at a speed of $300 \pm 10 \text{ mm/min}$, an Angle of $165^\circ \sim 180^\circ$ (as shown below), and the peeling strength is $0.1 \text{ N} \sim 0.7 \text{ N}$ ($10 \text{ g.f.} \leq \text{peeling force} \leq 70 \text{ g.f.}$).



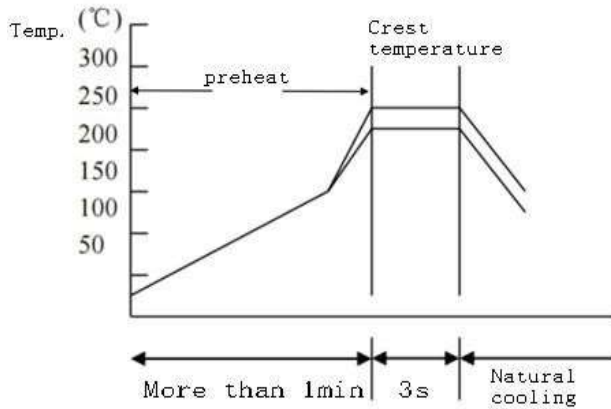
Recommended welding temperature curve:

Reflow welding



Solder type	Pb-Sn welding	Lead-free welding
Peak temperature	$230^\circ\text{C} \sim 250^\circ\text{C}$	$240^\circ\text{C} \sim 260^\circ\text{C}$
Peak time	$3 \text{ s} \sim 10 \text{ s}$	$3 \text{ s} \sim 10 \text{ s}$

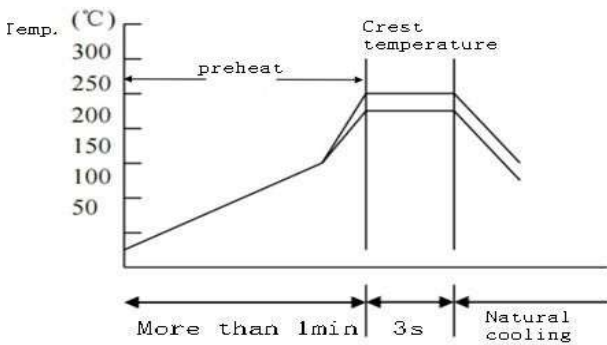
Wave soldering



Solder type	Pb-Sn welding	Lead-free welding
Peak temperature	230°C ~ 260°C	240°C ~ 270°C
Peak time	Within 3s	Within 3s

Hand welding

Manual welding is easy to cause micro-cracking or partial cracking of porcelain because of uneven local heating of capacitor. Therefore, the use of electric iron manual welding should be carefully operated, and the choice of the tip of the electric branding iron and tip temperature control should be more careful.



Preheat	Temp.	Power	Diameter	Time	Tin paste	Notice
△≤130°C	≤350°C	≤20W	Recommen ded 1mm	≤3s	≤1/2 Capacitance height	Do not contact the iron head directly with the ceramic body