



# **SPECIFICATION**

(Reference sheet)

- Supplier : Samsung electro-mechanics - Samsung P/N : CL31C6R8CBCNNNC

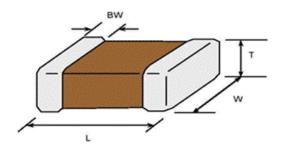
• Product : Multi-layer Ceramic Capacitor • Description : CAP, 6.8pF, 50V, ± 0.25pF, C0G, 1206

### A. Samsung Part Number

<u>CL</u> <u>31</u> <u>C</u> <u>6R8</u> <u>C</u> <u>B</u> <u>C</u> <u>N</u> <u>N</u> <u>N</u> <u>C</u> ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

1	Series	Samsung Multi-layer Ceramic Capacitor				
2	Size	1206 (inch code)	L: 3.20 ± 0.15 mm	W: 1.60 ± 0.15 mm		
3	Dielectric	C0G	8 Inner electrode	Ni		
4	Capacitance	<b>6.8</b> pF	Termination	Cu		
⑤	Capacitance	± 0.25pF	Plating	Sn 100% (Pb Free)		
	tolerance		Product	Normal		
6	Rated Voltage	50 V	Special	Reserved for future use		
7	Thickness	0.85 ± 0.15 mm	① Packaging	Cardboard Type, 7" reel		

#### B. Structure and dimension



Samouna D/N	Dimension(mm)				
Samsung P/N	L	W	Т	BW	
CL31C6R8CBCNNNC	3.20 ± 0.15	1.60 ± 0.15	0.85 ± 0.15	0.50 ± 0.30	

#### C. Samsung Reliability Test and Judgement condition

Capacitance       Within specified tolerance       1Miz±10% / 0.5~5Vrms         Q       536 min       Rated Voltage       60~120 sec.         Resistance       Whichever is smaller       Rated Voltage       60~120 sec.         Appearance       No abnormal exterior appearance       Microscop (X10)			
Q     536 min       Insulation     10,000Mohm or 500Mohm×μ F     Rated Voltage     60~120 sec.       Resistance     Whichever is smaller			
Resistance Whichever is smaller			
Appearance No abnormal exterior appearance Microscop (X10)			
Withstanding No dielectric breakdown or 300% of the rated voltage			
Voltage mechanical breakdown			
Temperature C0G			
Characteristics (From -55°C to 125°C, Capacitance change should be within ±30PPM/°C)			
Adhesive Strength No peeling shall be occur on the 500g×F, for 10±1 sec.			
of Termination terminal electrode			
Bending Strength Capacitance change : Bending to the limit (1mm)	Bending to the limit (1mm)		
within ±5% or ±0.5pF whichever is larger with 1.0mm/sec.	with 1.0mm/sec.		
Solderability More than 75% of terminal surface SnAg3.0Cu0.5 solder	SnAg3.0Cu0.5 solder		
is to be soldered newly 245±5 °C, 3±0.3sec.			
(preheating : 80~120 ℃ for 10~30sec.)			
Resistance to Capacitance change : Solder pot : 270±5 ℃, 10±1sec.	Solder pot : 270±5 ℃, 10±1sec.		
<b>Soldering heat</b> within ±2.5% or ±0.25pF whichever is larger			
Tan δ, IR : initial spec.			
Vibration Test Capacitance change : Amplitude : 1.5mm	Amplitude : 1.5mm		
within ±2.5% or ±0.25pF whichever is larger From 10Hz to 55Hz (return : 1min.)			
Tan δ, IR : initial spec. 2hours ´3 direction (x, y, z)			
Moisture Capacitance change : With rated voltage			
Resistance within ±7.5% or ±0.75 pF whichever is larger 40±2 ℃, 90~95%RH, 500+12/-0hrs	_		
Q: 122.67 min			
IR : 500Mohm or 25Mohm × $\mu$ F			
Whichever is smaller			
High Temperature Capacitance change : With 200% of the rated voltage			
Resistance within ±3% or ±0.3pF whichever is larger Max. operating temperature	•		
Q: 268 min 1000+48/-0hrs			
IR : 1,000Mohm or 50Mohm × $\mu$ F			
Whichever is smaller			
Temperature Capacitance change : 1 cycle condition			
Cycling within ±2.5% or ±0.25pF whichever is larger Min. operating temperature →	<b>25</b> ℃		
Tan $\delta$ , IR : initial spec. $\rightarrow$ Max. operating temperature $\rightarrow$	<b>25</b> ℃		
5 cycle test	5 cycle test		

<sup>\*</sup> The reliability test condition can be replaced by the corresponding accelerated test condition.

#### D. Recommended Soldering method:

Reflow (Reflow Peak Temperature: 260+0/-5°C, 10sec. Max)



A Product specifications included in the specifications are effective as of March 1, 2013.

Please be advised that they are standard product specifications for reference only.

We may change, modify or discontinue the product specifications without notice at any time.

So, you need to approve the product specifications before placing an order.

Should you have any question regarding the product specifications,

please contact our sales personnel or application engineers.

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- ① Aerospace/Aviation equipment
- ② Automotive or Transportation equipment (vehicles, trains, ships, etc)
- 3 Medical equipment
- Military equipment
- 5 Disaster prevention/crime prevention equipment
- Any other applications with the same as or similar complexity or reliability to the applications set forth above.