



# SPECIFICATION

- Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor

- Samsung P/N : **CL31C680KBCNBND**
- Description : **CAP, 68pF, 50V, ±10%, C0G, 1206**

## A. Samsung Part Number

**CL**   **31**   **C**   **680**   **K**   **B**   **C**   **N**   **B**   **N**   **D**  
 ①   ②   ③   ④   ⑤   ⑥   ⑦   ⑧   ⑨   ⑩   ⑪

① Series	Samsung Multi-layer Ceramic Capacitor			
② Size	1206 (inch code)	L: 3.2 ± 0.15 mm	W: 1.6 ± 0.15 mm	
③ Dielectric	C0G	⑧ Inner electrode	Ni	
④ Capacitance	68 pF	Termination	Cu	
⑤ Capacitance tolerance	±10 %	Plating	Sn 100% (Pb Free)	
⑥ Rated Voltage	50 V	⑨ Product	Array(4-element)	
⑦ Thickness	0.85 ± 0.15 mm	⑩ Special	Reserved for future use	
		⑪ Packaging	Cardboard Type,13"reel(10,000ea)	

## B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1MHz±10%      0.5~5Vrms
Q	1000 min	
Insulation Resistance	More than 500Mohm·μF	Rated Voltage      60~120 sec.
Appearance	No abnormal exterior appearance	Visual inspection
Withstanding Voltage	No dielectric breakdown or mechanical breakdown	300% of the rated voltage
Temperature Characteristics	C0G (From -55°C to 125°C, Capacitance change should be within ±30PPM/°C)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	500g·F, for 10±1 sec.
Bending Strength	Capacitance change : within ±5%	Bending to the limit (1mm) with 1.0mm/sec.
Solderability	More than 75% of terminal surface is to be soldered newly	SnAg3.0Cu0.5 solder 245±5°C, 3±0.3sec. (preheating : 80~120°C for 10~30sec.)
Resistance to Soldering heat	Capacitance change : within ±2.5% Tan δ, IR : initial spec.	Solder pot : 270±5°C, 10±1sec.

	Performance	Test condition
<b>Vibration Test</b>	Capacitance change : within $\pm 2.5\%$ Tan $\delta$ , IR : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours $\times$ 3 direction (x, y, z)
<b>Moisture Resistance</b>	Capacitance change : within $\pm 7.5\%$ Q : 200 min IR : More than $25M\Omega \cdot \mu F$	With rated voltage $40 \pm 2^\circ C$ , 90~95%RH, 500 +12/-0 hour
<b>High Temperature Resistance</b>	Capacitance change : within $\pm 3\%$ Q : 350 min IR : More than $50M\Omega \cdot \mu F$	With 200% of the rated voltage Max. operating temperature 1000+48/-0 hour
<b>Temperature Cycling</b>	Capacitance change : within $\pm 2.5\%$ Tan $\delta$ , IR : initial spec.	1 cycle condition Min. operating temperature $\rightarrow 25^\circ C$ $\rightarrow$ Max. operating temperature $\rightarrow 25^\circ C$  5 cycles test

**C. Recommended Soldering method :**

Reflow ( Reflow Peak Temperature :  $260 \pm 0/-5^\circ C$ , 10sec. Max )

\* For the more detail Specification, Please refer to the Samsung MLCC catalogue.