

# SPECIFICATION

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

- Samsung P/N : **CL21C680JBANFNC**
- Description : **CAP, 68pF, 50V, ±5%, COG, 0805**

## A. Samsung Part Number

CL   21   C   680   J   B   A   N   F   N   C  
 ①   ②   ③   ④   ⑤   ⑥   ⑦   ⑧   ⑨   ⑩   ⑪

① Series	Samsung Multi-layer Ceramic Capacitor		
② Size	0805 (inch code)	L: 2.0 ± 0.1 mm	W: 1.25 ± 0.1 mm
③ Dielectric	C0G	⑧ Inner electrode	Ni
④ Capacitance	68 pF	Termination	Cu
⑤ Capacitance tolerance	±5 %	Plating	Sn 100% (Pb Free)
⑥ Rated Voltage	50 V	⑨ Product	Product for POWER application
⑦ Thickness	0.65 ± 0.1 mm	⑩ Special	Reserved for future use
		⑪ Packaging	Cardboard Type, 7"reel(4,000ea)

## 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℃ to 125℃, Capacitance change should be within ±30PPM/℃)	
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℃, 3±0.3sec. (preheating : 80~120℃ for 10~30sec.)
Resistance to Soldering heat	Capacitance change : within ±2.5% Tan δ, IR : initial spec.	Solder pot : 270±5℃, 10±1sec.

	<b>Performance</b>	<b>Test condition</b>
<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 hours
<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 hours
<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.