

# SPECIFICATION

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

- Samsung P/N : **CL21C822JBFNNNE**
- Description : **CAP, 8.2nF, 50V, ±5%, C0G, 0805**

## A. Samsung Part Number

CL   21   C   822   J   B   F   N   N   N   E  
 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	8.2 nF	Termination		Cu						
⑤ Capacitance tolerance	±5 %	Plating		Sn 100% (Pb Free)						
⑥ Rated Voltage	50 V	⑨ Product		Normal						
⑦ Thickness	1.25 ± 0.1 mm	⑩ Special		Reserved for future use						
		⑪ Packaging		Embossed Type, 7"reel(2,000ea)						

## B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1kHz±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.

	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 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+0/-5 $^\circ C$ , 10sec. Max )

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