

SPECIFICATION

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

- Part Number : **CL21F104ZBANNND**
- Description : **CAP, 100nF, -20+80%, 50V, Y5V, 0805**

A. Samsung Part Number

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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	Y5V	⑧ Inner electrode Termination	Ni Cu
④ Capacitance	100 nF	⑨ Product	Normal
⑤ Capacitance tolerance	-20/+80 %	⑩ Special	Reserved for future use
⑥ Rated Voltage	50 V	⑪ Packaging	Cardboard Type, 13" reel
⑦ Thickness	0.65 ± 0.1 mm		

B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1 kHz ± 10% 1.0 ± 0.2 Vrms
Tan δ (DF)	0.05 max.	
Insulation Resistance	10,000 Mohm or 500 Mohm·μF Whichever is Smaller	Rated Voltage 60~120 sec.
Appearance	No abnormal exterior appearance	Microscope (×10)
Withstanding Voltage	No dielectric breakdown or mechanical breakdown	250% of the rated voltage
Temperature Characterisitcs	Y5V (From -30°C to 85°C, Capacitance change should be within -82~+22%)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	500g·F, for 10 ± 1 sec.
Bending Strength	Capacitance change : within ±30%	Bending to the limit (1mm) with 1.0mm/sec.
Solderability	More than 75% of terminal surface is to be soldered newly	1) Sn63Pb37 solder 235 ± 5°C, 5 ± 0.5sec. 2) SnAg3.0Cu0.5 solder 245 ± 5°C, 3 ± 0.3sec. (preheating : 80~120°C for 10~30sec.)
Resistance to Soldering heat	Capacitance change : within ±20% Tan δ, IR : initial spec.	Solder pot : 270 ± 5°C, 10 ± 1sec.

	Performance	Test condition
Vibration Test	Capacitance change : within $\pm 20\%$ Tan δ , IR : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours \times 3 direction (x, y, z)
Humidity	Capacitance change : within $\pm 30\%$ Tan δ : 0.09 max IR : 1000Mohm or 50Mohm $\cdot \mu F$ Whichever is Smaller	40 $\pm 2^\circ C$, 90~95%RH, 500+12/-0hrs
Moisture Resistance	Capacitance change : within $\pm 30\%$ Tan δ : 0.09 max IR : 500Mohm or 25Mohm $\cdot \mu F$ Whichever is Smaller	With rated voltage 40 $\pm 2^\circ C$, 90~95%RH, 500+12/-0hrs
High Temperature Resistance	Capacitance change : within $\pm 30\%$ Tan δ : 0.09 max IR : 1000Mohm or 50Mohm $\cdot \mu F$ Whichever is Smaller	With 200% of the rated voltage Max. operating temperature 1000+48/-0hrs
Temperature Cycling	Capacitance change : within $\pm 20\%$ Tan δ , IR : initial spec.	1 cycle condition Min. operating temperatur $\rightarrow 25^\circ C$ \rightarrow Max. operating temperature $\rightarrow 25^\circ C$ 5 cycle 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.