

# SPECIFICATION

- Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor
- Samsung P/N: **CL31F104ZACNBND**
- Description : **CAP,100nF, -20+80%, 25V, Y5V, 1206**

## A. Samsung Part Number

CL   31   F   104   Z   A   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	Y5V	⑧ Inner electrode	Ni
④ Capacitance	100 nF	Termination	Cu
⑤ Capacitance tolerance	-20/+80 %	Plating	Sn 100% (Pb Free)
⑥ Rated Voltage	25 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	1kHz±10%      1.0±0.2Vrms
Tan δ (DF)	0.05 max.	
Insulation Resistance	More than 500Mohm·μF	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 Characteristics	Y5V (From -30°C to 85°C, Capacitance change should be within -80~+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	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
<b>Vibration Test</b>	Capacitance change : within $\pm 20\%$ 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 $\pm 30\%$ Tan $\delta$ : 0.075 max 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 $\pm 30\%$ Tan $\delta$ : 0.075 max 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 $\pm 20\%$ 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.