



SPECIFICATION

- Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor
- Samsung P/N : [CL10B473KB8SFNC](#)
- Description : CAP, 47nF, 50V, ±10%, X7R, 0603

A. Samsung Part Number

CL	10	B	473	K	B	8	S	F	N	C
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

① Series	Samsung Multi-layer Ceramic Capacitor													
② Size	0603 (inch code)			L: 1.6 ± 0.1 mm			W: 0.8 ± 0.1 mm							
③ Dielectric	X7R				⑧ Inner electrode	Ni								
④ Capacitance	47 nF				⑨ Termination	Cu/Ag-Epoxy								
⑤ Capacitance tolerance	±10 %				⑩ Plating	Sn 100% (Pb Free)								
⑥ Rated Voltage	50 V				⑪ Product	Product for POWER application								
⑦ Thickness	0.8 ± 0.1 mm				⑫ Special	Reserved for future use								
					⑬ Packaging	Cardboard Type, 7" reel								

B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1kHz±10% 1.0±0.2Vrms
Tan δ (DF)	0.025 max.	
Insulation Resistance	10,000Mohm or 500Mohm·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	X7R (From -55 °C to 125 °C, Capacitance change shoud be within ±15%)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	500g·F, for 10±1 sec.
Bending Strength	Capacitance change : within ±12.5%	Bending to the limit (2mm) 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 ±7.5% Tan δ, IR : initial spec.	Solder pot : 270±5 °C, 10±1sec.

	Performance	Test condition
Vibration Test	Capacitance change : within $\pm 5\%$ Tan δ , IR : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours \times 3 direction (x, y, z)
Moisture Resistance	Capacitance change : within $\pm 12.5\%$ Tan δ : 0.05 max IR : 500Mohm or $25\text{Mohm} \cdot \mu\text{F}$ Whichever is Smaller	With rated voltage 40 $\pm 2^\circ\text{C}$, 90~95%RH, 500+12/-0hrs
High Temperature Resistance	Capacitance change : within $\pm 12.5\%$ Tan δ : 0.05 max IR : 1000Mohm or $50\text{Mohm} \cdot \mu\text{F}$ Whichever is Smaller	With 200% of the rated voltage Max. operating temperature 1000+48/-0hrs
Temperature Cycling	Capacitance change : within $\pm 7.5\%$ Tan δ , IR : initial spec.	1 cycle condition Min. operating temperature $\rightarrow 25^\circ\text{C}$ \rightarrow Max. operating temperature $\rightarrow 25^\circ\text{C}$ 5 cycle test

C. Recommended Soldering method :

Reflow (Reflow Peak Temperature : 260+0/-5°C, 10sec. Max)

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