

SPECIFICATION

· Supplier : Samsung Electro-Mechanics · Samsung P/N : CL32B106KBJNNE
 · Product : Multi-layer Ceramic Capacitor · Description : CAP, 10.0 μ F, 50V, \pm 10%, X7R, 1210

A. Samsung Part Number

CL 32 B 106 K B J N N N E
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Series	Samsung Multi-layer Ceramic Capacitor									
② Size	1210 (inch code)	L: 3.2	\pm 0.3	mm	W:	2.50	\pm 0.2	mm		
③ Dielectric	X7R				⑧ Inner electrode	Ni				
④ Capacitance	10 μ F				Termination	Cu				
⑤ Capacitance tolerance	\pm 10 %				Plating	Sn 100% (Pb Free)				
⑥ Rated Voltage	50 V				⑨ Product	Normal				
⑦ Thickness	2.50 \pm 0.20 mm				⑩ Special	Reserved for future use				
					⑪ Packaging	Embossed Type, 7" reel				

B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1kHz \pm 10% 1.0 \pm 0.2Vrms
Tan δ (DF)	0.100 max.	
Insulation Resistance	10,000Mohm or 100Mohm \times μ F Whichever Is Smaller	Rated Voltage 60~120 sec.
Appearance	No abnormal exterior appearance	Microscope (x10)
Withstanding Voltage	No dielectric breakdown or mechanical breakdown	250% of the rated voltage
Temperature Characteristics	X7R (From -55 $^{\circ}$ C to 125 $^{\circ}$ C, Capacitance change should be within \pm 15%)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	500gF, for 10 \pm 1 sec.
Bending Strength	Capacitance change : within \pm 12.5%	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 \pm 5 $^{\circ}$ C, 5 \pm 0.5sec. 2) SnAg3.0Cu0.5 solder 245 \pm 5 $^{\circ}$ C, 3 \pm 0.3sec. (preheating : 80~120 $^{\circ}$ C for 10~30sec.)
Resistance to Soldering heat	Capacitance change : within \pm 7.5% Tan δ , IR : initial spec.	Solder pot : 270 \pm 5 $^{\circ}$ C, 10 \pm 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 x 3 direction (x, y, z)
Moisture Resistance	Capacitance change : within $\pm 12.5\%$ Tan δ : 0.125 max IR : 12.5M Ω ·uF or Over	With 100% of the rated voltage 40 \pm 2 $^{\circ}$ C, 90~95%RH, 500+12/-0hrs
High Temperature Resistance	Capacitance change : within $\pm 12.5\%$ Tan δ : 0.125 max IR : 25M Ω ·uF or Over	With 150% 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 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.