

SPECIFICATION

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

- Samsung P/N : **CL03C3R8CA3GNNH**
- Description : **CAP, 3.8pF, 25V, ±0.25pF, C0G, 0201**

A. Samsung Part Number

CL 03 C 3R8 C A 3 G N N H
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Series	Samsung Multi-layer Ceramic Capacitor						
② Size	0201	(inch code)	L:	0.6 ± 0.03	mm	W:	0.3 ± 0.03 mm
③ Dielectric	C0G			⑧ Inner electrode	Cu		
④ Capacitance	3.8 pF			Termination	Cu		
⑤ Capacitance tolerance	±0.25 pF			Plating	Sn 100% (Pb Free)		
⑥ Rated Voltage	25 V			⑨ Product	Normal		
⑦ Thickness	0.3 ± 0.03 mm			⑩ Special	Reserved for future use		
				⑪ Packaging	Cardboard Type, 7" reel		

B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1MHz±10% 0.5~5Vrms
Q	476 min	
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	300% of the rated voltage
Temperature Characterisitcs	C0G (From -55℃ to 125℃, Capacitance change should be within ±30PPM/℃)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	200g·F, for 10±1 sec.
Bending Strength	Capacitance change : within ±5% or ±0.5pF whichever is larger	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% or ±0.25pF whichever is larger Tan δ, IR : initial spec.	Solder pot : 270±5℃, 10±1sec.

	Performance	Test condition
Vibration Test	Capacitance change : within $\pm 2.5\%$ or $\pm 0.25\text{pF}$ whichever is larger 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 $\pm 7.5\%$ or $\pm 0.75\text{pF}$ whichever is larger Q : 112.67 min 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 $\pm 3\%$ or $\pm 0.3\text{pF}$ whichever is larger Q : 238 min 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 $\pm 2.5\%$ or $\pm 0.25\text{pF}$ whichever is larger 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 : $260 \pm 0/-5^\circ\text{C}$, 10sec. Max)

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