



SPECIFICATION

(Reference sheet)

- Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor
- Samsung P/N :
 Description :
- CL10C3R9CB8NNNC CAP, 3.9pF, 50V, ± 0.25pF, C0G, 0603

A. Samsung Part Number

			<u>CL</u>	<u>10</u>	<u>C</u>	<u>3R9</u>	<u>C</u>	<u>B</u>	<u>8</u>	N	<u>N</u>	N	<u>C</u>	
			1	2	3	4	5	6	1	8	9	10	1	
1	Series	Samsung	Multi-lay	er Ce	rami	с Сара	acitor							
2	Size	0603	(inch co	de)		L:	1.60	± 0.10	mm			W:	0.80 ± 0.10 mm	
3	Dielectric	C0G					8	Inner	elect	rode			Ni	
4	Capacitance	3.9	рF					Term	inatic	on			Cu	
5	Capacitance	± 0.2	5pF					Platir	ng				Sn 100%	(Pb Free)
	tolerance						9	Prod	uct				Normal	
6	Rated Voltage	50	V				10	Spec	ial				Reserved for fut	ure use
\bigcirc	Thickness	0.80 ± 0.1	0 mm				1	Pack	aging				Cardboard Type	e, 7" reel

B. Structure and dimension



Samsung P/N	Dimension(mm)								
(Lead Free)	L	W	Т	BW					
CL10C3R9CB8NNNC	1.60 ± 0.10	0.80 ± 0.10	0.80 ± 0.10	0.30 ± 0.20					

C. Samsung Reliability Test and Judgement condition

Q Insulation 10 Insulation 10 Resistance M Appearance No Withstanding No Voltage mm Temperature C0 Characteristics (F Adhesive Strength No of Termination termination Bending Strength Ca Solderability Mo Resistance to Ca Soldering heat wi	Vithin specified tolerance 478 min 0,000Mohm or 500Mohm×µF Whichever is smaller lo abnormal exterior appearance lo dielectric breakdown or nechanical breakdown 0G From -55 ℃ to 125 ℃, Capacitance change sh lo peeling shall be occur on the erminal electrode capacitance change : rithin ±5% or ±0.5pF whichever is larger	1 ^{Mb} ±10% / 0.5~5Vrms Rated Voltage 60~120 sec. Microscop (X10) 300% of the rated voltage nould be within ±30PPM/°C) 500g×F, for 10±1 sec. Bending to the limit (1mm)
Insulation10ResistanceWAppearanceNoWithstandingNoVoltagemodelTemperatureCOCharacteristics(FAdhesive StrengthNoof TerminationtelBending StrengthCaSolderabilityModelResistance toCaSoldering heatwi	0,000Mohm or 500Mohm×⊭F Whichever is smaller lo abnormal exterior appearance lo dielectric breakdown or hechanical breakdown COG From -55 ℃ to 125 ℃, Capacitance change sh lo peeling shall be occur on the erminal electrode capacitance change :	Microscop (X10) 300% of the rated voltage hould be within ±30PPM/℃) 500g×F, for 10±1 sec.
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Temperature CG Characteristics (F Adhesive Strength No of Termination tel Bending Strength Ca Solderability Ma Resistance to Ca Soldering heat wi	30G From -55°C to 125°C, Capacitance change shall be occur on the erminal electrode apacitance change :	500g×F, for 10±1 sec.
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Adhesive Strength No of Termination termination Bending Strength Ca Solderability Ma Resistance to Ca Soldering heat wi	lo peeling shall be occur on the erminal electrode capacitance change :	500g×F, for 10±1 sec.
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Bending Strength Ca Solderability Ma Solderability Ma Resistance to Ca Soldering heat wi	apacitance change :	Bending to the limit (1mm)
wi Solderability Main is Resistance to Cain Soldering heat wi		Bending to the limit (1mm)
SolderabilityMisResistance toCaSoldering heatwi	rithin ±5% or ±0.5pF whichever is larger	
Resistance to Ca Soldering heat wi		with 1.0mm/sec.
Resistance to Ca Soldering heat wi	lore than 75% of terminal surface	SnAg3.0Cu0.5 solder
Soldering heat wi	to be soldered newly	245±5℃, 3±0.3sec.
Soldering heat wi		(preheating : 80~120 ℃ for 10~30sec.)
Soldering heat wi	apacitance change :	Solder pot : 270±5℃, 10±1sec.
	vithin $\pm 2.5\%$ or ± 0.25 pF whichever is larger	
	an δ , IR : initial spec.	
	apacitance change :	Amplitude : 1.5mm
	vithin $\pm 2.5\%$ or ± 0.25 pF whichever is larger	From 10Hz to 55Hz (return : 1min.)
	an δ , IR : initial spec.	2hours ´ 3 direction (x, y, z)
	apacitance change :	With rated voltage
	vithin $\pm 7.5\%$ or ± 0.75 pF whichever is larger	40±2°C, 90~95%RH, 500+12/-0hrs
Q	-	
	R: 500Mohm or 25Mohm × μ F	
	Whichever is smaller	
High Temperature Ca	apacitance change :	With 200% of the rated voltage
	vithin $\pm 3\%$ or ± 0.3 pF whichever is larger	Max. operating temperature
Q		1000+48/-0hrs
	R: 1,000Mohm or 50Mohm × μ F	
	Whichever is smaller	
Temperature Ca	apacitance change :	1 cycle condition
•	which $\pm 2.5\%$ or $\pm 0.25 \text{ pF}$ which ever is larger	Min. operating temperature $\rightarrow 25^{\circ}$
	an δ , IR : initial spec.	\rightarrow Max. operating temperature \rightarrow 25°C

* The reliability test condition can be replaced by the corresponding accelerated test condition.

D. Recommended Soldering method :

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

Product specifications included in the specifications are effective as of March 1, 2013. Please be advised that they are standard product specifications for reference only. We may change, modify or discontinue the product specifications without notice at any time. So, you need to approve the product specifications before placing an order. Should you have any question regarding the product specifications, please contact our sales personnel or application engineers.