



SPECIFICATION

- · Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor
- · Samsung P/N :
- CL03A103KP3NNNH

(Reference sheet)

- · Description :
- CAP, 10nF, 10V, ±10%, X5R, 0201

A. Samsung Part Number

		CL ①	<u>03</u> ②	<u>А</u> З	<u>103</u> ④	<u>K</u> 5	<u>P</u> 6	<u>3</u> ⑦	<u>N</u> 8	<u>N</u> 9	<u>N</u> 10	<u>н</u> Ш
1	Series	Samsung Multi-layer Ceramic Capacitor										
2	Size	0201 (inch co	ode)		L:	0.60	± 0.03	mm			W:	0.30 ± 0.03 mm
3	Dielectric	X5R				8	Inner	elect	rode			Ni
4	Capacitance	10 nF					Term	inatic	n			Cu
5	Capacitance	±10 %					Platir	ng				Sn 100% (Pb Free)
	tolerance					9	Prod	uct				Normal
6	Rated Voltage	10 V				10	Spec	ial				Reserved for future use
\bigcirc	Thickness	0.30 ± 0.03 mm				1	Pack	aging				Cardboard Type, 7" reel

B. Structure & Dimension



Samsung P/N	Dimension(mm)								
Samsung F/N	L	W	Т	BW					
CL03A103KP3NNNH	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	0.15 ± 0.05					

C. Samsung Reliablility Test and Judgement Condition

Tan δ (DF) 0.05 max. treated at 150 °C +0/-10 °C for 1 hour and mambient air for 24±2 hours. Insulation 10,000Mohm or 100Mohm×μF Rated Voltage 60~120 sec. Resistance Whichever is smaller Rated Voltage 60~120 sec. Appearance No abnormal exterior appearance Microscope (×10) Withstanding No dielectric breakdown or 250% of the rated voltage Voltage mechanical breakdown 250% of the rated voltage Characteristics (From-55°C to 85°C, Capacitance change should be within ±15%) Adhesive Strength No peeling shall be occur on the 200g f, for 10±1 sec. of Termination terminal electrode 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 Soldering Heat Tan δ, IR : initial spec. Solder pot : 270±5°C, 10±1sec. Solder pot : 270±5°C, 10±1sec. Soldering Heat Tan δ, IR : initial spec. Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) Vibration Test Capacitance change : within ±5% Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) Moisture Capacitance change : within ±12.5% With rated voltage <td></td>					
Resistance Whichever is smaller Appearance No abnormal exterior appearance Microscope (×10) Withstanding No dielectric breakdown or 250% of the rated voltage Voltage mechanical breakdown 250% of the rated voltage Temperature XSR Characteristics (From-55 °C to 85 °C, Capacitance change should be within ±15%) Adhesive Strength No peeling shall be occur on the terminal electrode 200g·f, for 10±1 sec. Of Termination terminal electrode 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 Resistance to Capacitance change : within ±7.5% Solder pot : 270±5°C, 10±1sec. Soldering Heat Tan δ, IR : initial spec. Amplitude : 1.5mm Vibration Test Capacitance change : within ±5% Amplitude : 1.5mm Tan δ, IR : initial spec. With rated voltage 40±2°C, 90~95%RH, 500+12/-0hrs	*A capacitor prior to measuring the capacitance is heat treated at $150^{\circ}C+0/-10^{\circ}C$ for 1 hour and maintained in ambient air for 24±2 hours.				
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Resistance Tan δ : 0.075 max 40±2°C, 90~95%RH, 500+12/-0hrs					
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IR : 500Mohm or 25Mohm × μ F					
Whichever is smaller					
High Temperature Capacitance change : within ±12.5% With 200% of the rated voltage					
Resistance Tan δ: 0.075 max Max. operating temperature	Max. operating temperature				
IR : 1,000Mohm or 50Mohm × <i>μ</i> ^F 1000+48/-0hrs					
Whichever is smaller					
Temperature Capacitance change : within ±7.5% 1 cycle condition					
	25° C				
\rightarrow Max. operating temperature \rightarrow	25 ℃				
5 cycle test	5 cycle test				

X 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.