



SPECIFICATION

(Reference sheet)

• Supplier : Samsung electro-mechanics • Samsung P/N : CL10B105KA8NNNC

• Product : Multi-layer Ceramic Capacitor • Description : CAP, 1 µF, 25V, ±10%, X7R, 0603

A. Samsung Part Number

<u>CL</u> <u>10</u> <u>B</u> <u>105</u> <u>K</u> <u>A</u> <u>8</u> <u>N</u> <u>N</u> <u>N</u> <u>C</u> 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	nner (electrode	Ν	li	
4	Capacitance	1 µF			Termi	nation	C	u	
(5)	Capacitance	±10 %			Platin	g	S	n 100%	(Pb Free)
	tolerance			(9	Produ	ct	N	lormal	
6	Rated Voltage	25 V		1	Specia	al	R	Reserved for	future use
7	Thickness	0.8 ± 0.1	mm	(1) Packa	ging	C	ardboard T	ype, 7" reel

B. Samsung Reliability Test and Judgement condition

	Performance	Test condition					
Capacitance	Within specified tolerance	1klt ±10% 1.0±0.2Vrms *A capacitor prior to measuring the capacitance is heat treated at 150 ℃+0/-10 ℃ for 1hour and maintained in					
Tan δ (DF)	0.1 max.	ambient air for 24±2 hours.					
Insulation Resistance	10,000Mohm or 100Mohm⋅ <i>μ</i> F 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						
Temperature	X7R						
Characteristics	(From -55℃ to 125℃, Capacitance change should be within ±15%)						
Adhesive Strength	No peeling shall be occur on the	500g·F, for 10±1 sec.					
of Termination	terminal electrode						
Bending Strength	Capacitance change : within ±12.5%	Bending to the limit (1mm) with 1.0mm/sec.					
Solderability	More than 75% of terminal surface	SnAg3.0Cu0.5 solder					
	is to be soldered newly	245±5℃, 3±0.3sec.					
		(preheating : 80~120 ℃ for 10~30sec.)					
Resistance to	Capacitance change: within ±7.5%	Solder pot : 270±5℃, 10±1sec.					
Soldering heat	Tan δ, IR : initial spec.						

	Performance	Test condition		
Vibration Test	Capacitance change : within ±5%	Amplitude : 1.5mm		
	Tan δ, IR : initial spec.	From 10Hz to 55Hz (return : 1min.)		
		2hours × 3 direction (x, y, z)		
Moisture	Capacitance change: within ±12.5%	With rated voltage		
Resistance	Tan δ: 0.125 max	40±2℃, 90~95%RH, 500+12/-0hrs		
	IR : 500Mohm or 12.5Mohm ⋅ μF			
	Whichever is smaller			
High Temperature	Capacitance change: within ±12.5%	With 150% of the rated voltage		
Resistance	Tan δ: 0.125 max	Max. operating temperature		
	IR : 1.000Mohm or 25Mohm ⋅ μF			
	Whichever is smaller	1000+48/-0hrs		
Temperature	Capacitance change : within ±7.5%	1 cycle condition		
Cycling	Tan δ, IR : initial spec.	Min. operating temperature → 25°C		
		→ Max. operating temperature → 25°C		
		5 cycle test		

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

C. Recommended Soldering method:

Reflow (Reflow Peak Temperature : 260+0/-5 $^{\circ}$ C, 10sec. Max)



A 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.