



## **SPECIFICATION**

• Supplier : Samsung electro-mechanics • Samsung P/N : CL10B124KO8NNNC

• Product : Multi-layer Ceramic Capacitor • Description : CAP, 120nF, 16V, ±10%, X7R, 0603

## A. Samsung Part Number

<u>CL</u> <u>10</u> <u>B</u> <u>124</u> <u>K</u> <u>O</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 c	ode)	L: 1	.6 ±	± 0.1	mm	W:	0.8 ± 0.1	mm
3	Dielectric	X7R		(	8) I	Inner e	lectrode	N	li	
4	Capacitance	<b>120</b> nF			7	Termin	ation	С	u	
5	Capacitance	±10 %			F	Plating	ſ	S	n 100%	(Pb Free)
	tolerance			(	9 F	Produc	:t	N	lormal	
6	Rated Voltage	16 V		(	0 5	Specia	I	R	Reserved for	future use
7	Thickness	$0.8 \pm 0.1$	mm	(1	(f)	Packag	ging	С	ardboard T	ype, 7" reel

## **B. Samsung Reliablility Test and Judgement condition**

	Performance	Test condition				
Capacitance	Within specified tolerance	1kHz±10% 1.0±0.2Vrms				
Tan δ (DF)	0.035 max.					
Insulation	10,000Mohm or 100Mohm⋅µF	Rated Voltage 60~120 sec.				
Resistance	Whichever is Smaller					
Appearance	No abnormal exterior appearance	Microscope (×10)				
Withstanding	No dielectric breakdown or	250% of the rated voltage				
Voltage	mechanical breakdown					
Temperature	X7R					
Characterisitcs	(From -55 $^{\circ}$ C to 125 $^{\circ}$ C, Capacitance change shoud 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 : 0.05 max	40±2℃, 90~95%RH, 500+12/-0hrs			
	IR: 500Mohm or 25Mohm ⋅ μF				
	Whichever is Smaller				
High Temperature	Capacitance change : within ±12.5%	With 200% of the rated voltage			
Resistance	Tan δ : 0.05 max	Max. operating temperature			
	IR: 1000Mohm or 50Mohm · μF				
	Whichever is Smaller	1000+48/-0hrs			
Temperature	Capacitance change : within ±7.5%	1 cycle condition			
Cycling	Tan δ, IR : initial spec.	Min. operating temperatur  25 ℃			
		→ Max. operating temperature → 25°C			
		5 cycle test			

## C. Recommended Soldering method :

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

<sup>\*</sup> For the more detail Specification, Please refer to the Samsung MLCC catalogue.