



SPECIFICATION

(Reference sheet)

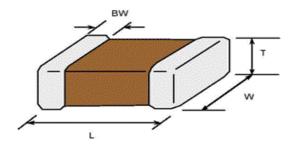
· Supplier : Samsung electro-mechanics · Samsung P/N: CL10B474KA8NNNC

· Product : Multi-layer Ceramic Capacitor · Description : CAP, 470nF, 25V, ±10%, X7R, 0603

A. Samsung Part Number

1	Series	Samsung Multi-layer Ceramic Capacitor					
2	Size	0603 (inch code)	L: 1.60	± 0.10 mm	W:	0.80 ± 0.10 mm	
3	Dielectric	X7R	8	Inner electrode		Ni	
4	Capacitance	470 nF		Termination		Cu	
(5)	Capacitance	±10 %		Plating		Sn 100% (Pb Free)	
	tolerance		9	Product		Normal	
6	Rated Voltage	25 V	10	Special		Reserved for future use	
7	Thickness	0.80 ± 0.10 mm	11)	Packaging		Cardboard Type, 7" reel	

B. Structure & Dimension



Samoung D/N	Dimension(mm)					
Samsung P/N	L	W	Т	BW		
CL10B474KA8NNNC	1.60 ± 0.10	0.80 ± 0.10	0.80 ± 0.10	0.30 ± 0.20		

C. Samsung Reliablility Test and Judgement Condition

Tan δ (DF) 0.1 max.		1KHz ±10% / 1.0±0.2Vrms *A capacitor prior to measuring the capacitance is heat treated at 150 ℃ +0/-10 ℃ for 1 hour and maintained in ambient air for 24±2 hours.		
		treated at 150 ℃+0/-10 ℃ for 1 hour and maintained in		
Inculation 10 000Mohr				
Insulation 10,000Mohm or 100Mohm× <i>µ</i> F		Rated Voltage 60~120 sec.		
Resistance Whichever i	s smaller			
Appearance No abnorma	exterior appearance	Microscope (×10)		
Withstanding No dielectric	breakdown or	250% of the rated voltage		
Voltage mechanical breakdown				
Temperature X7R		•		
Characteristics (From-55 ℃ 1	o 125℃, Capacitance chan	ge should be within ±15%)		
Adhesive Strength No peeling shall be occur on the		500g·f, for 10±1 sec.		
of Termination terminal elec	trode			
Bending Strength Capacitance	change: within ±12.5%	Bending to the limit (1mm)		
		with 1.0mm/sec.		
Solderability More than 75	5% of terminal surface	SnAg3.0Cu0.5 solder		
is to be solde	ered newly	245±5°C, 3±0.3sec.		
		(preheating : 80~120°C for 10~30sec.)		
Resistance to Capacitance	change: within ±7.5%	Solder pot : 270±5°C, 10±1sec.		
Soldering Heat Tan δ, IR : ir				
Vibration Test Capacitance Tan δ, IR : ir	•	Amplitude: 1.5mm From 10Hz to 55Hz (return: 1min.) 2hours × 3 direction (x, y, z)		
Moisture Capacitance	change: within ±12.5%	With rated voltage		
Resistance Tan δ: 0.12	5 max	40±2°C, 90~95%RH, 500+12/-0hrs		
	ohm or 12.5Mohm × μ F never is smaller			
High Temperature Capacitance	change: within ±12.5%	With 150% of the rated voltage		
Resistance Tan δ: 0.12	5 max	Max. operating temperature		
	Mohm or 25Mohm × <i>μ</i> F never is smaller	1000+48/-0hrs		
Temperature Capacitance	change: within ±7.5%	1 cycle condition		
Cycling Tan δ, IR : ir	itial spec.	Min. operating temperature → 25°C		
		→ Max. operating temperature → 25°C		
		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 $^{\circ}$ 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.

Disclaimer & Limitation of Use and Application

The products listed in this Specification sheet are **NOT** designed and manufactured for any use and applications set forth below.

Please note that any misuse of the products deviating from products specifications or information provided in this Spec sheet may cause serious property damages or personal injury.

We will **NOT** be liable for any damages resulting from any misuse of the products, specifically including using the products for high reliability applications as listed below.

If you have any questions regarding this 'Limitation of Use and Application', you should first contact our sales personnel or application engineers.

- ① Aerospace/Aviation equipment
- 2 Automotive or Transportation equipment (vehicles, trains, ships, etc)
- 3 Medical equipment
- 4 Military equipment
- ⑤ Disaster prevention/crime prevention equipment
- 6 Power plant control equipment
- Atomic energy-related equipment
- Undersea equipment
- Traffic signal equipment
- Data-processing equipment
- ## Electric heating apparatus, burning equipment
- Safety equipment
- ® Any other applications with the same as or similar complexity or reliability to the applications