



SPECIFICATION

- · Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor
- · Samsung P/N:
- CL32A106KAULNNE

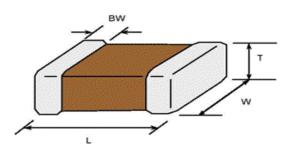
(Reference sheet)

- · Description :
- CAP, 10uF, 25V, ±10%, X5R, 1210

A. Samsung Part Number

			<u>CL</u> ①	<u>32</u> ②	<u>▲</u> ③	<u>106</u> ④	<u>K</u> 5	<mark>4</mark> 6	<u>U</u> ⑦	<u>L</u> ⑧	<u>N</u> 9	<u>N</u> 10	<u>Е</u> 11)	
1	Series	Samsung Multi-layer Ceramic Capacitor												
2	Size	1210 (i	inch co	ode)	L: 3.20 ± 0.30 mm W: 2.50 ± 0.20 mm				nm					
							8	Thick	ness	divis	sion		Low profile	
3	Dielectric	X5R						Inner	elect	rode			Ni	
4	Capacitance	10 u	ıF					Term	inatic	n			Cu	
5	Capacitance	±10 %	6					Platir	ıg				Sn 100%	(Pb Free)
	tolerance						9	Prod	uct				Normal	
6	Rated Voltage	25 V	/			10 Special				Reserved for future use				
\bigcirc	Thickness	1.80 ± 0	.20 mm				1 Packaging Eml		Embossed Type, 7" reel					

B. Structure & Dimension



Sameuna P/N	Dimension(mm)								
Samsung P/N	L	W	Т	BW					
CL32A106KAULNNE	3.20 ± 0.30	2.50 ± 0.20	1.80 ± 0.20	0.60 ±0 .30					

C. Samsung Reliablility Test and Judgement Condition

	Judgement	Test condition
Capacitance	Within specified tolerance	1 ^{kHz} ±10% / 1.0±0.2Vrms
Tan δ (DF)	0.1 max.	*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.
Insulation	10,000Mohm or 100Mohm× <i>µ</i> F	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	X5R	
Characteristics	(From-55℃ to 85℃, 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 is to be soldered newly	SnAg3.0Cu0.5 solder 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.	
Vibration Test	Capacitance change : within $\pm 5\%$ Tan δ , IR : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours × 3 direction (x, y, z)
Moisture Resistance	Capacitance change : within ±12.5% Tan δ : 0.125 max IR : 500Mohm or 12.5Mohm × μ ^F Whichever is smaller	With rated voltage 40±2℃, 90~95%RH, 500+12/-0hrs
High Temperature Resistance	Capacitance change : within ±12.5% Tan δ : 0.125 max IR : 1,000Mohm or 25Mohm × μF Whichever is smaller	With 150% of the rated voltage Max. operating temperature 1000+48/-0hrs
Temperature Cycling	Capacitance change : within $\pm 0\%$ Tan δ , IR : initial spec.	1 cycle condition 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°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.

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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.

- Aerospace/Aviation equipment
- ② Automotive or Transportation equipment (vehicles, trains, ships, etc)
- 3 Medical equipment
- *④ Military equipment*
- *5* Disaster prevention/crime prevention equipment
- *ⓐ* Any other applications with the same as or similar complexity or reliability to the applications set forth above.