SAMSUNG ELECTRO-MECHANICS

SPECIFICATION

- **Supplier : Samsung electro-mechanics**
- **Product : Multi-layer Ceramic Capacitor**
- **Samsung P/N : CL21B106KQQNNNE**
- **Description : CAP, 10㎌, 6.3V, ±10%, X7R, 0805**

A. Samsung Part Number

CL	21	B	106	K	Q	Q	N	N	N	E
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

①	**Series**	Samsung Multi-layer Ceramic Capacitor			
②	**Size**	0805 (inch code)	L: 2.0 ± 0.15 mm	W: 1.25 ± 0.15 mm	
③	**Dielectric**	X7R	⑧	**Inner electrode**	Ni
④	**Capacitance**	10 ㎌		**Termination**	Cu
⑤	**Capacitance tolerance**	±10 %		**Plating**	Sn 100% (Pb Free)
			⑨	**Product**	Normal
⑥	**Rated Voltage**	6.3 V	⑩	**Special**	Reserved for future use
⑦	**Thickness**	1.25 ± 0.15 mm	⑪	**Packaging**	Embossed Type, 7" reel

B. Samsung Reliablility Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1㎑±10% 1.0±0.2Vrms
Tan δ (DF)	0.1 max.	
Insulation Resistance	10,000Mohm or 100Mohm·㎌ Whichever is Smaller	Rated Voltage 60~120 sec.
Appearance	No abnormal exterior appearance	Microscope (×10)
Withstanding Voltage	No dielectric breakdown or mechanical breakdown	250% of the rated voltage
Temperature Characterisitcs	X7R (From -55℃ to 125℃, Capacitance change shoud be within ±15%)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	500g·F, for 10±1 sec.
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 Soldering heat	Capacitance change : within ±7.5% Tan δ, IR : initial spec.	Solder pot : 270±5℃, 10±1sec.

	Performance	Test condition
Vibration Test	Capacitance change : within ±5% Tan δ, IR : initial spec.	Amplitude : 1.5mm From 10㎐ to 55㎐ (return : 1min.) 2hours × 3 direction (x, y, z)
Moisture Resistance	Capacitance change : within ±12.5% Tan δ : 0.125 max IR : 12.5㏁·㎌ or Over	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 : 25㏁·㎌ or Over	With 150% of the rated voltage Max. operating temperature 1000+48/-0hrs
Temperature Cycling	Capacitance change : within ±7.5% Tan δ, IR : initial spec.	1 cycle condition Min. operating temperatur → 25℃ → Max. operating temperature → 25℃ 5 cycle test

C. Recommended Soldering method :

Reflow (Reflow Peak Temperature : 260+0/-5℃, 10sec. Max)

* For the more detail Specification, Please refer to the Samsung MLCC catalogue.

Multi Layer Ceramic Capacitor (MLCC)

1. Model : CL21B106KQQNNNE

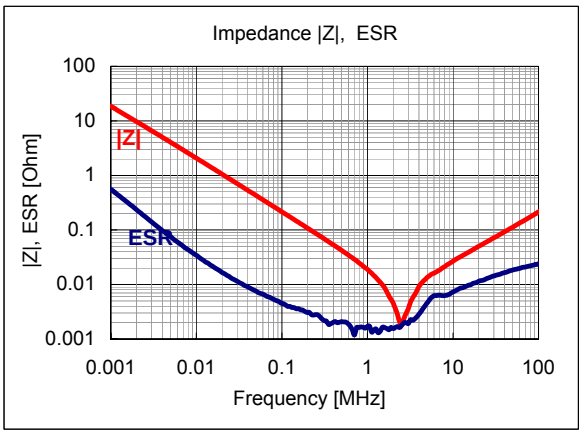
2. Description

Part no.	Size (inch(mm))	Thickness (mm)	Temperature charateristics	Capacitance value	Capacitance tolerance(%)	Voltage (V)
CL21B106KQQNNNE	0805/2012	1.25mm	X7R	10uF	± 10 %	6.3

3. Characteristics data

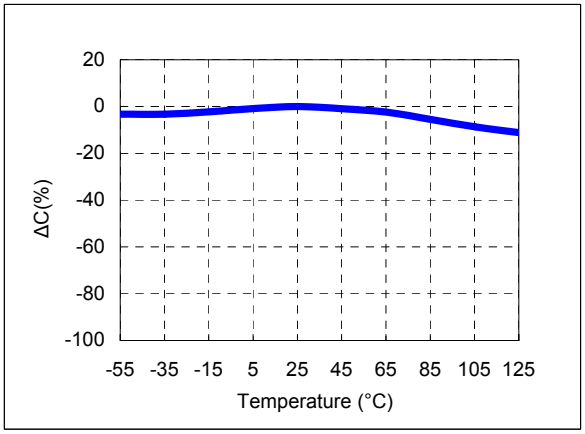
1) Frequency characteristics

Agilent E4294A, 0.5Vrms, 1KHz to 100MHz

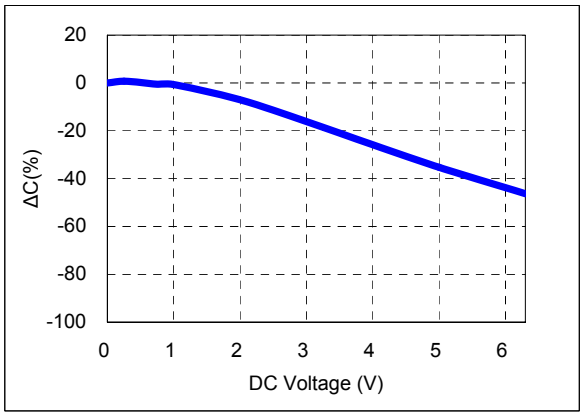


2) Temperature characteristics of capacitance(TCC)

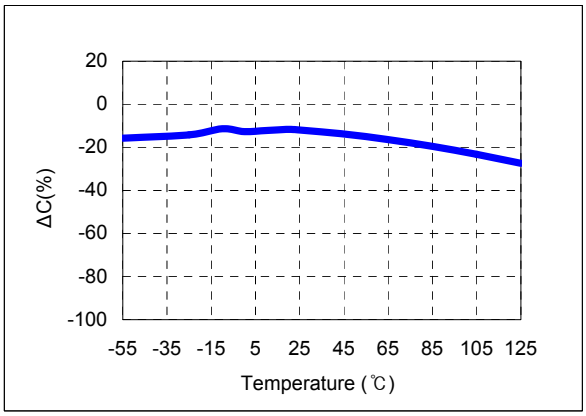
Agilent 4284A, 1kHz, 1Vrms



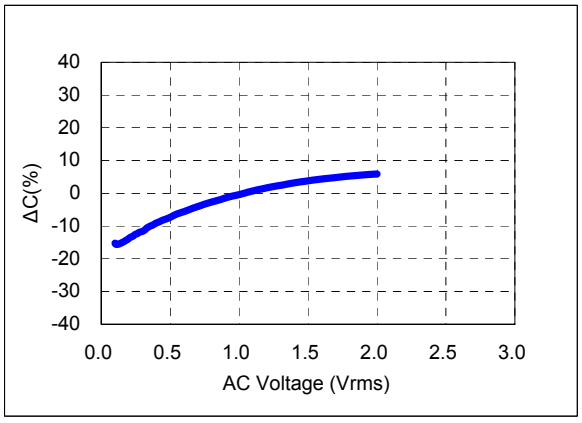
3) DC Bias characteristics (Agilent 4284A, 1kHz, 1Vrm



4) Bias TCC characteristics (Agilent 4284A, 1kHz, 1Vrms, 3.15Vdc)



5) AC voltage characteristics (Agilent 4284A, 1kHz)



6) Ripple Current