



**THE DATASHEET OF
CL05A226MQ5N6J8**





SPECIFICATION (Reference sheet)

- Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor

- Samsung P/N : **CL05A226MQ5N6J8**
- Description : **CAP, 22 μ F, 6.3V, \pm 20%, X5R, 0402**

A. Samsung Part Number

CL **05** **A** **226** **M** **Q** **5** **N** **6** **J** **8**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪


① Series	Samsung Multi-layer Ceramic Capacitor		
② Size	0402 (inch code)	L: 1.00 \pm 0.20 mm	W: 0.50 \pm 0.25 mm
③ Dielectric	X5R	⑧ Inner electrode	Ni
④ Capacitance	22 μ F	Termination	Cu
⑤ Capacitance tolerance	\pm 20 %	Plating	Sn 100% (Pb Free)
⑥ Rated Voltage	6.3 V	⑨ Product	Size Control Code
⑦ Thickness	0.50 \pm 0.25 mm	⑩ Special	Size Control Code
		⑪ Packaging	Cardboard Type, 7" reel

B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	120Hz \pm 20% 0.5 \pm 0.1Vrms
Tan δ (DF)	0.15 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 \pm 2hours.
Insulation Resistance	10,000Mohm or 10Mohm \times μ F Whichever is Smaller	Rated Voltage 60~120 sec.
Appearance	No abnormal exterior appearance	Visual inspection
Withstanding Voltage	No dielectric breakdown or mechanical breakdown	250% of the rated voltage
Temperature Characteristics	X5R (From -55 $^{\circ}$ C to 85 $^{\circ}$ C, Capacitance change should be within \pm 15%)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	500g \cdot F, for 10 \pm 1 sec.
Bending Strength	Capacitance change : within \pm 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 \pm 5 $^{\circ}$ C, 3 \pm 0.3sec. (preheating : 80~120 $^{\circ}$ C for 10~30sec.)
Resistance to Soldering heat	Capacitance change : within \pm 15% Tan δ , IR : initial spec.	Solder pot : 270 \pm 5 $^{\circ}$ C, 10 \pm 1sec.

	Performance	Test condition
Vibration Test	Capacitance change : initial spec. 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 $\pm 12.5\%$ Tan δ : 0.25 max IR : 500Mohm or 1Mohm $\times \mu F$ Whichever is Smaller	With rated voltage 40 ± 2 °C, 90~95%RH, 500+12/-0 hour
High Temperature Resistance	Capacitance change : within $\pm 12.5\%$ Tan δ : 0.25 max IR : 1,000Mohm or 2Mohm $\times \mu F$ Whichever is Smaller	With 100% of the rated voltage Max. operating temperature 1000+48/-0 hour
Temperature Cycling	Capacitance change : within $\pm 15\%$ Tan δ , IR : initial spec.	1 cycle condition Min. operating temperature $\rightarrow 25$ °C \rightarrow Max. operating temperature $\rightarrow 25$ °C 5 cycles test

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

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