



SPECIFICATION

(Reference sheet)

· Supplier : Samsung electro-mechanics · Samsung P/N : CL21A106KOQNNNE

Product : Multi-layer Ceramic Capacitor

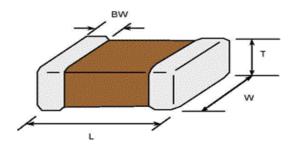
Description : CAP, 10uF, 16V, ±10%, X5R, 0805

A. Samsung Part Number

<u>CL</u> <u>21</u> <u>A</u> <u>106</u> <u>K</u> <u>O</u> <u>Q</u> <u>N</u> <u>N</u> <u>N</u> <u>E</u> ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

| 1 | Series | Samsung Multi-layer Ceramic Capacitor | | | | | |
|-----|---------------|---------------------------------------|-------------------------------|-----------------|----|-------------------------|--|
| 2 | Size | 0805 (inch code) | L: $2.00 \pm 0.15 \text{ mm}$ | | W: | 1.25 ± 0.15 mm | |
| 3 | Dielectric | X5R | 8 | Inner electrode | | Ni | |
| 4 | Capacitance | 10 uF | | Termination | | Cu | |
| (5) | Capacitance | ±10 % | | Plating | | Sn 100% (Pb Free) | |
| | tolerance | | 9 | Product | | Normal | |
| 6 | Rated Voltage | 16 V | 10 | Special | | Reserved for future use | |
| 7 | Thickness | 1.25 ± 0.15 mm | 11) | Packaging | | Embossed Type, 7" reel | |

B. Structure & Dimension



| Samsung P/N | Dimension(mm) | | | | | |
|-----------------|---------------|-------------|-------------|------------------|--|--|
| Samsung F/N | L | W | T | BW | | |
| CL21A106KOQNNNE | 2.00 ± 0.15 | 1.25 ± 0.15 | 1.25 ± 0.15 | 0.50 +0.20/-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°C+0/-10°C for 1 hour and maintained in ambient air for 24±2 hours. | | |
| 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 | X5R | | | |
| Characteristics | (From-55℃ to 85℃, Capacitance change s | hould 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°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 : 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: 0.2 max | With rated voltage 40±2°C, 90∼95%RH, 500+12/-0hrs | | |
| | IR: 500Mohm or 12.5Mohm × μF Whichever is smaller | | | |
| High Temperature Resistance | Capacitance change: within ±12.5% Tan δ: 0.2 max IR: 1,000Mohm or 25Mohm × μF Whichever is smaller | With 100% 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 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)



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.

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- ② Automotive or Transportation equipment (vehicles, trains, ships, etc)
- 3 Medical equipment
- 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.