



SPECIFICATION

• Supplier : Samsung electro-mechanics • Samsung P/N : CL31B105KCHSNNE

• Product : Multi-layer Ceramic Capacitor • Description : CAP, 1 µF, 100V, ±10%, X7R, 1206

A. Samsung Part Number

<u>CL</u> <u>31</u> <u>B</u> <u>105</u> <u>K</u> <u>C</u> <u>H</u> <u>S</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 | 1206 (inch code) | L: 3.2 ± 0.2 mm | W: 1.6 ± 0.2 mm |
| ③ Dielectric | X7R | 8 Inner electrode | Ni |
| Capacitance | 1 | Termination | Cu/Ag-Epoxy |
| ⑤ Capacitance | ±10 % | Plating | Sn 100% (Pb Free) |
| tolerance | | Product | Normal |
| 6 Rated Voltage | 100 V | Special | Reserved for future use |
| ① Thickness | 1.6 ± 0.2 mm | ① Packaging | Embossed Type, 7" reel |

B. Samsung Reliablility Test and Judgement condition

| | Performance | Test condition | |
|-------------------|--|--------------------------------------|--|
| Capacitance | Within specified tolerance | 1klb±10% 1.0±0.2Vrms | |
| Tan δ (DF) | 0.025 max. | | |
| Insulation | 10,000Mohm or 500Mohm⋅μF | Rated Voltage 60~120 sec. | |
| Resistance | Whichever is Smaller | | |
| Appearance | No abnormal exterior appearance | Microscope (×10) | |
| Withstanding | No dielectric breakdown or | 200% of the rated voltage | |
| Voltage | mechanical breakdown | | |
| Temperature | X7R | | |
| Characterisitcs | (From -55 ℃ to 125 ℃, Capacitance change shoud 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℃, 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. | | |

| | Performance | Test condition |
|------------------|-----------------------------------|-------------------------------------|
| Vibration Test | Capacitance change: within ±5% | Amplitude : 1.5mm |
| | Tan δ, IR : initial spec. | From 10Hz to 55Hz (return : 1min.) |
| | | 2hours × 3 direction (x, y, z) |
| Moisture | Capacitance change: within ±12.5% | With rated voltage |
| Resistance | Tan δ : 0.05 max | 40±2℃, 90~95%RH, 500+12/-0hrs |
| | IR : 500Mohm or 25Mohm · μF | |
| | Whichever is Smaller | |
| High Temperature | Capacitance change: within ±12.5% | With 200% of the rated voltage |
| Resistance | Tan δ : 0.05 max | Max. operating temperature |
| | IR: 1000Mohm or 50Mohm · μF | |
| | Whichever is Smaller | 1000+48/-0hrs |
| Temperature | Capacitance change: within ±7.5% | 1 cycle condition |
| Cycling | Tan δ, IR : initial spec. | Min. operating temperature → 25°C |
| | | → Max. operating temperature → 25°C |
| | | |
| | | 5 cycle test |

C. Recommended Soldering method :

Reflow (Reflow Peak Temperature : 260+0/-5 $^{\circ}$ C , 10sec. Max)

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