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Samsung Electro-Mechanics America, Inc.
CL10C331FB8NNNC

For any questions, you can email us directly:
sales@integrated-circuit.com

SAMSUNG ELECTRO-MECHANICS

# SPECIFICATION

- **Supplier : Samsung electro-mechanics**
- **Product : Multi-layer Ceramic Capacitor**
- **Part Number : CL10C331FB8NNNC**
- **Description : CAP, 330pF, 50V, ±1%, C0G, 0603**

## A. Samsung Part Number

| CL | 10 | C | 331 | F | B | 8 | N | N | N | C |
|---|---|---|---|---|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

| | | | | | |
|---|---|---|---|---|---|
| ① | **Series** | Samsung Multi-layer Ceramic Capacitor | | | |
| ② | **Size** | 0603 (inch code) | L: 1.6 ± 0.1 mm | W: 0.8 ± 0.1 | mm |
| ③ | **Dielectric** | C0G | ⑧ **Inner electrode** | Ni | |
| ④ | **Capacitance** | 330 pF | **Termination** | Cu | |
| ⑤ | **Capacitance tolerance** | ±1 % | **Plating** | Sn 100% | (Pb Free) |
| | | | ⑨ **Product** | Normal | |
| ⑥ | **Rated Voltage** | 50 V | ⑩ **Special** | Reserved for future use | |
| ⑦ | **Thickness** | 0.8 ± 0.1 mm | ⑪ **Packaging** | Cardboard Type, 7" reel | |

## B. Samsung Reliablility Test and Judgement condition

| | Performance | Test condition |
|---|---|---|
| **Capacitance** | Within specified tolerance | 1㎒±10% 0.5~5Vrms |
| **Q** | 1000 min | |
| **Insulation Resistance** | 10,000Mohm or 500Mohm·㎌ Whichever is Smaller | Rated Voltage 60~120 sec. |
| **Appearance** | No abnormal exterior appearance | Microscope (×10) |
| **Withstanding Voltage** | No dielectric breakdown or mechanical breakdown | 300% of the rated voltage |
| **Temperature Characterisitcs** | C0G (From -55℃ to 125℃, Capacitance change shoud be within ±30PPM/℃) | |
| **Adhesive Strength of Termination** | No peeling shall be occur on the terminal electrode | 500g·F, for 10±1 sec. |
| **Bending Strength** | Capacitance change : within ±5% or ±0.5pF whichever is larger | Bending to the limit (1mm) with 1.0mm/sec. |
| **Solderability** | More than 75% of terminal surface is to be soldered newly | 1) Sn63Pb37 solder 235±5℃, 5±0.5sec. 2) SnAg3.0Cu0.5 solder 245±5℃, 3±0.3sec. (preheating : 80~120℃ for 10~30sec.) |
| **Resistance to Soldering heat** | Capacitance change : within ±2.5% or ±0.25pF whichever is larger Tan δ, IR : initial spec. | Solder pot : 270±5℃, 10±1sec. |

| | Performance | Test condition |
|---|---|---|
| **Vibration Test** | Capacitance change :<br>within ±2.5% or ±0.25pF whichever is larger<br>Tan δ, IR : initial spec. | Amplitude : 1.5mm<br>From 10Hz to 55Hz (return : 1min.)<br>2hours × 3 direction (x, y, z) |
| **Humidity** | Capacitance change :<br>within ±5% or ±0.5pF whichever is larger<br>Q: 350 min<br>IR : 1000Mohm or 50Mohm · μF<br>Whichever is Smaller | 40±2℃, 90~95%RH, 500+12/-0hrs |
| **Moisture Resistance** | Capacitance change :<br>within ±7.5% or ±0.75pF whichever is larger<br>Q : 200 min<br>IR : 500Mohm or 25Mohm · μF<br>Whichever is Smaller | With rated voltage<br>40±2℃, 90~95%RH, 500+12/-0hrs |
| **High Temperature Resistance** | Capacitance change :<br>within ±3% or ±0.3pF whichever is larger<br>Q : 350 min<br>IR : 1000Mohm or 50Mohm · μF<br>Whichever is Smaller | With 200% of the rated voltage<br>Max. operating temperature<br>1000+48/-0hrs |
| **Temperature Cycling** | Capacitance change :<br>within ±2.5% or ±0.25pF whichever is larger<br>Tan δ, IR : initial spec. | 1 cycle condition<br>Min. operating temperatur → 25℃<br>→ Max. operating temperature → 25℃<br>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.