



SPECIFICATION

(Reference sheet)

- Supplier : Samsung electro-mechanics - Samsung P/N : CL10C200JB8NNNC

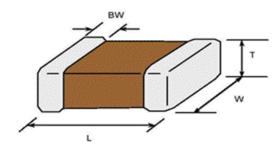
Product : Multi-layer Ceramic Capacitor
 Description : CAP, 20pF, 50V, ± 5%, C0G, 0603

A. Samsung Part Number

<u>CL</u> <u>10</u> <u>C</u> <u>200</u> <u>J</u> <u>B</u> <u>8</u> <u>N</u> <u>N</u> <u>N</u> <u>C</u> ① ② ③ ④ ⑤ ⑥ ⑦ 8 ⑨ ⑩ ⑪

| 1 | Series | Samsung Multi-layer Ceramic Capacitor | | | |
|-----|---------------|---------------------------------------|-------------------|-------------------------|--|
| 2 | Size | 0603 (inch code) | L: 1.60 ± 0.10 mm | W: 0.80 ± 0.10 mm | |
| | | | | | |
| 3 | Dielectric | C0G | 8 Inner electrode | Ni | |
| 4 | Capacitance | 20 pF | Termination | Cu | |
| (5) | Capacitance | ± 5% | Plating | Sn 100% (Pb Free) | |
| | tolerance | | Product | Normal | |
| 6 | Rated Voltage | 50 V | Special | Reserved for future use | |
| 7 | Thickness | 0.80 ± 0.10 mm | Packaging | Cardboard Type, 7" reel | |

B. Structure and dimension



| Samsung P/N | Dimension(mm) | | | | |
|-----------------|---------------|-------------|-------------|-------------|--|
| (Lead Free) | L | W | Т | BW | |
| CL10C200JB8NNNC | 1.60 ± 0.10 | 0.80 ± 0.10 | 0.80 ± 0.10 | 0.30 ± 0.20 | |

C. Samsung Reliability Test and Judgement condition

| | Performance | Test condition | | | |
|------------------------------------|--|--|--|--|--|
| Capacitance | Within specified tolerance | 1 ^{Mlz} ±10% / 0.5~5Vrms | | | |
| Q | 800 min | | | | |
| nsulation 10,000Mohm or 500Mohm×μF | | Rated Voltage 60~120 sec. | | | |
| Resistance | Whichever is smaller | | | | |
| Appearance | No abnormal exterior appearance | Microscop (X10) | | | |
| Withstanding | No dielectric breakdown or | 300% of the rated voltage | | | |
| Voltage | mechanical breakdown | | | | |
| Temperature C0G | | - | | | |
| Characteristics | From -55℃ to 125℃, Capacitance change should be within ±30PPM/℃) | | | | |
| Adhesive Strength | No peeling shall be occur on the | 500g×F, for 10±1 sec. | | | |
| of Termination | terminal electrode | | | | |
| Bending Strength | Capacitance change : | Bending to the limit (1mm) | | | |
| | within ±5% or ±0.5pF whichever is larger | 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 : | Solder pot : 270±5℃, 10±1sec. | | | |
| Soldering heat | within ±2.5% or ±0.25pF whichever is larger | | | | |
| | Tan δ, IR : initial spec. | | | | |
| Vibration Test | Capacitance change : | Amplitude : 1.5mm | | | |
| | within ±2.5% or ±0.25pF whichever is larger | From 10Hz to 55Hz (return : 1min.) | | | |
| | Tan δ, IR : initial spec. | 2hours ´ 3 direction (x, y, z) | | | |
| Moisture | Capacitance change : | With rated voltage | | | |
| Resistance | within ±7.5% or ±0.75pF whichever is larger | 40±2℃, 90~95%RH, 500+12/-0hrs | | | |
| | Q: 166.67 min | | | | |
| | IR : 500Mohm or 25Mohm × μ F | | | | |
| | Whichever is smaller | | | | |
| High Temperature | Capacitance change : | With 200% of the rated voltage | | | |
| Resistance | within ±3% or ±0.3pF whichever is larger | Max. operating temperature | | | |
| | Q: 325 min | 1000+48/-0hrs | | | |
| | IR: 1,000Mohm or 50Mohm × μ F | | | | |
| | Whichever is smaller | | | | |
| Temperature | Capacitance change : | 1 cycle condition | | | |
| Cycling | within ±2.5% or ±0.25pF whichever is larger | Min. operating temperature \rightarrow 25 $^{\circ}$ C | | | |
| | Tan δ, IR : initial spec. | \rightarrow Max. operating temperature \rightarrow 25 $^{\circ}$ C | | | |
| | | | | | |
| | | | | | |
| | | 5 cycle test | | | |

^{*} 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.

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- 2 Automotive or Transportation equipment (vehicles, trains, ships, etc)
- 3 Medical equipment
- 4 Military equipment
- ⑤ Disaster prevention/crime prevention equipment
- 6 Power plant control equipment
- Atomic energy-related equipment
- Undersea equipment
- Traffic signal equipment
- Data-processing equipment
- ## Electric heating apparatus, burning equipment
- Safety equipment
- ® Any other applications with the same as or similar complexity or reliability to the applications