



SPECIFICATION (Reference sheet)

• Supplier : Samsung electro-mechanics • Samsung P/N : CL31C6R8CBCNNND

• Product : Multi-layer Ceramic Capacitor • Description : CAP, 6.8pF, 50V, ± 0.25pF, C0G, 1206

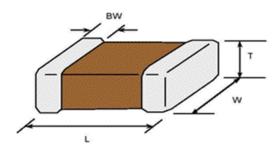
A. Samsung Part Number

 CL
 31
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| 1 | Series | Samsung Multi-layer Ceramic Capacitor | | |
|---|---------------|---------------------------------------|-------------------|--------------------------|
| 2 | Size | 1206 (inch code) | L: 3.20 ± 0.15 mm | W: 1.60 ± 0.15 mm |
| 3 | Dielectric | COG | Inner electrode | Ni |
| 4 | Capacitance | 6.8 pF | Termination | Cu |
| ⑤ | Capacitance | ± 0.25pF | Plating | Sn 100% (Pb Free) |
| | tolerance | | Product | Normal |
| 6 | Rated Voltage | 50 V | Special | Reserved for future use |
| 7 | Thickness | 0.85 ± 0.15 mm | ① Packaging | Cardboard Type, 13" reel |

B. Structure and dimension



| Samsung P/N | Dimension(mm) | | | | |
|-----------------|---------------|-------------|-------------|-------------|--|
| Samsung F/N | L | W | Т | BW | |
| CL31C6R8CBCNNND | 3.20 ± 0.15 | 1.60 ± 0.15 | 0.85 ± 0.15 | 0.50 ± 0.30 | |

C. Samsung Reliability Test and Judgement condition

| | Judgement | Test condition | | | |
|---|---|---------------------------------------|--|--|--|
| Capacitance | Within specified tolerance | 1 ^{MHz} ±10% / 0.5~5Vrms | | | |
| Q | 536 min | | | | |
| nsulation 10,000Mohm or 500Mohm x μ F | | Rated Voltage 60~120 sec. | | | |
| Resistance | Whichever is smaller | | | | |
| Appearance | No abnormal exterior appearance | Microscope (X10) | | | |
| Withstanding | No dielectric breakdown or | 300% of the rated voltage | | | |
| Voltage | mechanical breakdown | | | | |
| emperature 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: 122.67 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: 268.00 min | 1,000+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 → 25 °C | | | |
| | Tan δ, IR : initial spec. | → Max. operating temperature → 25°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±5 °C, 30sec.)



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.

- Disclaimer & Limitation of Use and Application -

The products listed in this Specification sheet are **NOT** designed and manufactured for any use and applications set forth below.

Please note that any misuse of the products deviating from products specifications or information provided in this Spec sheet may cause serious property damages or personal injury.

We will **NOT** be liable for any damages resulting from any misuse of the products, specifically including using the products for high reliability applications as listed below.

If you have any questions regarding this 'Limitation of Use and Application', you should first contact our sales personnel or application engineers.

- ① Aerospace/Aviation equipment
- 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.