MULTILAYER CERAMIC CHIP CAPACITOR(MLCC)



| No | Item | Test Method | | | Specification | | |
|----|--|--|---|--|--|---------------------------------|----------------------------------|
| 15 | Capacitance Temperature Characteristic | (a) NPO The temperature coefficient is determine during the capacitance measured in step 3 as a reference. When cycling the temperature sequentially from step 1 through 5. The capacitance shall be within the specified tolerance | | | Dielectric NPO | Temperature Range -55℃ to | |
| | | for the temperature coefficient. | | | | +125℃ | |
| | | Step | Temperature(°ℂ) | | X7R | -55℃ to +125℃ | Within 15% |
| | | 1 | +25±2℃ | | | | |
| | | 2 | -55±3℃ | | | | |
| | | 3 | +2 5+2℃ | | X5R | -55℃ to +85℃ | Within 15% |
| | | 4 | +125±3℃(for NPO/X7R) +85±3℃(for X5R/Y5V/Z5U |) | | | |
| | | 5 | +25±2℃ | | Z5U | +10℃ to | Within |
| | | (b) X7R,X5R, Y5V,Z5U The ranges of capacitance change compared with the 25±2℃ value over the temperature range shall be within the specified ranges. | | | | +85℃ | +22%~-56% |
| | | | | | Y5V | -30℃ to +85℃ | Within +22%~-82% |
| 16 | Resistance to Board Bending | Mount the capacitor to the testing print wiring board. Then apply force in the direction shown in Fig.1. The bending stroke shall be more than 1mm. Pressuring is carried out at the rate of 1mm/s. After reaching the specified bending. Keeping it for 5 ± 1 seconds then measure the capacitance value. The capacitance could not be lower 5% of the initial value | | | No cracking or marking defects Unit:mm shall occur Pressurizing Fig. 1 Pressurizing jig Testing printed wiring board 16 | | |
| 17 | Chip Break Strength | Place the capacitor on an iron plate, then gradually apply a load on the center of the chip until it breaks. Tip of push-pull gauge is shown in Fig.2 | | | To load 2 kg Fig.2 | g at least. | Φ 1.0mm R 0.5mm |
| No | Item | Test Method | | | | | Specification |
| | Temperature Cycle | Mount the | | | | | |
| | | sequential | ally from step 1 to step 5,and perform 25 cycles NPO X7R X5R | | z5U Y5V | | |
| | | Step | | Temperature($^{\circ}$ C) / time(min) | | | No crack and electric failure |
| | | 1 | +25±2℃ / 3±1 | +25±2° / 3±1 | | | |
| 18 | | 2 | -55±2℃ / 30±3 | -30±2℃ / 30±3 (Z5U IS +10±2℃/X5R IS -55±2℃) | | ~ ` | |
| | | 3 | +25±2℃ / 3±1 | | ±2° / 3±1 ±3° / 30±3 | | eleculo ialiule |
| | | 4 | +125±3℃ / 30±3 | +85±3 | | | |
| | | 5 | +25±2℃ / 3±1 | +25±2 | 2°C / 3±1 | / 3±1 | |
| | | Remove and let sit for 24 \pm 2hours(NPO) or 48 \pm 4hours(X7R,X5R,Z5U,Y5V) at room temperature(25 $^{\circ}$ C),then measure. | | | | | |