

Data Sheet

Customer:

Product: Multilayer Ceramic Chip Capacitor – MC Series

Part No.: MC10KTBS101106

Issued Date: 03-Jul-24

Edition: REV.A



VIKING TECH CORPORATION
光韻科技股份有限公司
No.70, Guangfu N. Rd., Hukou
Township, Hsinchu County
303, Taiwan (R.O.C)

TEL:886-3-5972931
FAX:886-3-5972935•886-3-5973494
E-mail:sales@viking.com.tw

VIKING TECH CORPORATION KAOHSIUNG BRANCH
光韻科技股份有限公司高雄分公司
No.248-3, Sin-Sheng Rd., Cian-Jhen Dist., Kaohsiung,
806, Taiwan

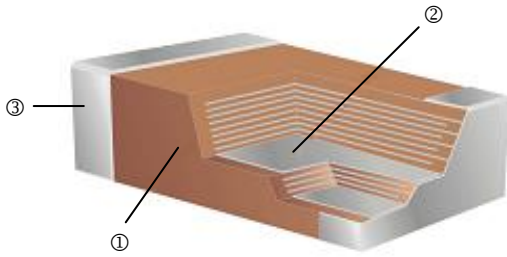
TEL:886-7-8217999
FAX:886-7-8228229
E-mail:sales@viking.com.tw

VIKING ELECTRONICS (WUXI) CO., LTD.
光韻電子(無錫)有限公司
No.22 Xixia Road, Machinery & Industry Park,
National Hi-Tech Industrial Development Zone
of Wuxi, Wuxi, Jiangsu Province, China
Zip Code:214028
TEL:86-510-85203339
FAX:86-510-85203667•86-510-85203977
E-mail:china@viking.com.tw

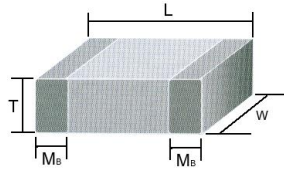
Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
03-Jul-24	03-Jul-24	03-Jul-24	03-Jul-24	
<i>Kris Chen</i>	<i>Ben Chang</i>	<i>Ben Chang</i>		

Multilayer Ceramic Chip Capacitor

Construction



①	Ceramic Material	③	Termination:
②	Inner Electrodes		



Dimensions

Unit: mm

Type	Size (Inch)	L	W	T	M _B	Packaging (7" Reel)	
						Paper tape	Plastic tape
10	1210	3.20±0.30	2.50±0.20	2.50±0.20	1.00 min	-	1K

Part Numbering

MC	10	K	T	BS	101	106
Product Type	Dimensions (LxW)	Capacitance Tolerance	Packaging	Dielectric	Voltage (VDCW)	Capacitance
MC : General; Ultra-small Middle and High Voltage	10: 1210	K: ±10%	T: Taping Reel	BS: X7S	101: 100V	106: 10uF

Environmental Characteristics

Size	1210
Dielectric	X7S
Capacitance	10uF
Capacitance tolerance	K(±10%)
Rated voltage (DC)	100V
Operating temperature	-55 to +125°C
Capacitance characteristic	-22 to 22%
Mounting Method	Reflow

Multilayer Ceramic Chip Capacitor

Environmental Characteristics

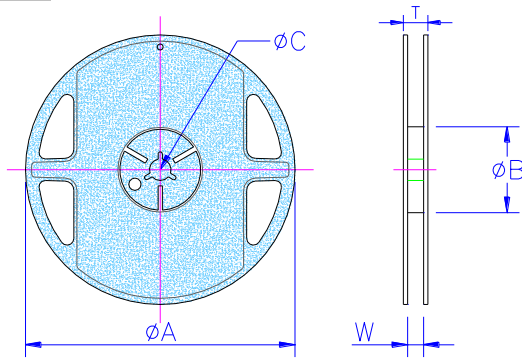
Item	Requirement	Test Method												
Rated Voltage	Shown in Rated value	The rated voltage is defined as the maximum voltage which may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V(peak to peak) or V(zero to peak), whichever is larger, should be maintained within the rated voltage range.												
Appearance	No defects or abnormalities	Visual inspection												
Dimension	Shown in Dimension	Using Measuring instrument of dimension.												
Voltage proof	No defects or abnormalities	Measurement Point Between the terminations Test Voltage 250% of the rated voltage Applied Time 1s to 5s Charge/discharge current 50mA max												
Insulation Resistance(I.R.) (Room Temperature)	More than 50Ω · F	Measurement Temperature Room Temperature Test Voltage 250% of the rated voltage Applied Time 1s to 5s Charge/discharge current 50mA max.												
Capacitance(Cap.)	Shown in Rated value	Measurement Temperature Room Temperature Measurement Frequency 1.0+/-0.1kHz Measurement Voltage 1.0+/-0.2Vrms												
Q or Dissipation Factor (D.F.)	DF ≤ 0.1	Measurement Temperature Room Temperature Measurement Frequency 1.0+/-0.1kHz Measurement Voltage 1.0+/-0.2Vrms												
Temperature Characteristics of Capacitance	No bias Shown in Rated value.	The capacitance change should be measured after 5 min at each specified temp. stage. Capacitance value as a reference is the value in "*" marked step. Measurement Voltage Less than 1.0Vrms (Refer to the individual data sheet) Pre-treatment Heat treatment: Perform a heat treatment at 150+0/-10°C for 1 hour and then let sit for 24+/-2hours at room temperature, then measure. Temperature Step <No bias> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Step</th> <th>Temp.(°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Reference Temp. ±2</td> </tr> <tr> <td>2</td> <td>Min. operating temp. ±3</td> </tr> <tr> <td>3*</td> <td>Reference Temp. ±2</td> </tr> <tr> <td>4</td> <td>Max. operating temp. ±3</td> </tr> <tr> <td>5</td> <td>Reference Temp. ±2</td> </tr> </tbody> </table>	Step	Temp.(°C)	1	Reference Temp. ±2	2	Min. operating temp. ±3	3*	Reference Temp. ±2	4	Max. operating temp. ±3	5	Reference Temp. ±2
Step	Temp.(°C)													
1	Reference Temp. ±2													
2	Min. operating temp. ±3													
3*	Reference Temp. ±2													
4	Max. operating temp. ±3													
5	Reference Temp. ±2													
Adhesive Strength of Termination	No removal of the terminations or other defect should occur.	Mounting method Solder the capacitor on the test substrate Applied Force 10N Holding Time 10±1s Applied Direction In parallel with the test substrate and vertical with the capacitor side												
Vibration	Appearance: No defects or abnormalities. Capacitance: Within the specified initial value. Q or D.F.: Within the specified initial value.	Mounting method: Solder the capacitor on the test substrate Kind of Vibration: A simple harmonic motion 10Hz to 55Hz to 10Hz Vibration Time: 1min Total amplitude: 1.5mm Vibration directions and time: This motion should be applied for a period of 2hours in each 3 mutually perpendicular directions(total of 6hours).												
Substrate Bending test	Appearance: No defects or abnormalities. Capacitance Change: Within±10%	Mounting method: Reflow solder the capacitor on the test substrate Pressurization Method: Shown in Fig.2 Flexure: 1mm Holding Time: 5+/-1s												
Solderability	95% of the terminations is to be soldered evenly and continuously	Test Method: Solder bath method Flux: Solution of rosin ethanol 25(mass)% Preheat: 80°C to 120°C · 10s to 30s Kind of Solder: Sn-3.0Ag-0.5Cu(Lead Free Solder) Test Temperature: 245+/-5°C Test Time: 2+/-0.5s												
Resistance to Soldering Heat	Appearance: No defects or abnormalities. Capacitance Change: Within±7.5% Q or D.F.: Within the specified initial value. I.R.: Within the specified initial value. Voltage proof: No defects or abnormalities	Pre-treatment: Heat treatment: Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure. Test Method: Solder bath method Kind of Solder: Sn-3.0Ag-0.5Cu(Lead Free Solder) Test Temperature: 270+/-5°C Test Time: 10+/-0.5s Preheat Temperature: 100°C to 120°C and 170°C to 200°C Preheat time: Each 1 min Post-treatment: Non treatment: Let sit for 24+/-2hours at room temperature, then measure.												
High Temperature High Humidity (Steady)	Appearance: No defects or abnormalities. Capacitance Change: Within±12.5% Q or D.F.: ≤ 0.2 I.R.: More than 12.5Ω · F	Mounting method: Solder the capacitor on the test substrate Pre-treatment: Heat treatment: Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure. Test Temperature: 40+/-2°C Test Humidity: 90%RH to 95%RH Test Time: 500+/-12h Test Voltage: Rated Voltage Charge/discharge current: 50mA max. Post-treatment: Heat treatment: Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure												

Multilayer Ceramic Chip Capacitor

Item	Requirement	Test Method															
Temperature Change Sudden	Appearance: No defects or abnormalities. Capacitance Change: Within $\pm 7.5\%$ Q or D.F.: Within the specified initial value. I.R.: Within the specified initial value. Voltage proof: No defects or abnormalities	Mounting method: Solder the capacitor on the test substrate Pre-treatment: Heat treatment: Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure. Cycles: 5cycles Temperature Cycling. <table border="1"> <thead> <tr> <th>Step</th> <th>Temp.(°C)</th> <th>Time(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating temp.+0/-3</td> <td>30\pm3</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>2-3</td> </tr> <tr> <td>3</td> <td>Max. operating temp.+3/-0</td> <td>30\pm3</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>2-3</td> </tr> </tbody> </table> Post-treatment: Non treatment: Let sit for 24+/-2hours at room temperature, then measure	Step	Temp.(°C)	Time(min)	1	Min. operating temp.+0/-3	30 \pm 3	2	Room temp	2-3	3	Max. operating temp.+3/-0	30 \pm 3	4	Room temp.	2-3
Step	Temp.(°C)	Time(min)															
1	Min. operating temp.+0/-3	30 \pm 3															
2	Room temp	2-3															
3	Max. operating temp.+3/-0	30 \pm 3															
4	Room temp.	2-3															
Durability	Appearance: No defects or abnormalities. Capacitance Change: Within $\pm 12.5\%$ Q or D.F.: ≤ 0.2 I.R.: More than 25Q · F	Mounting method: Solder the capacitor on the test substrate Pre-treatment: Heat treatment: Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure. Test Temperature: Maximum Operating Temperature +/3°C Test Time: 1000+/-12h Test Voltage: 150% of the rated voltage Charge/discharge current: 50mA max. Post-treatment: Heat treatment: Perform a heat treatment at 150+0/-10°C for 1hour and then let sit for 24+/-2hours at room temperature, then measure															

■ Packaging

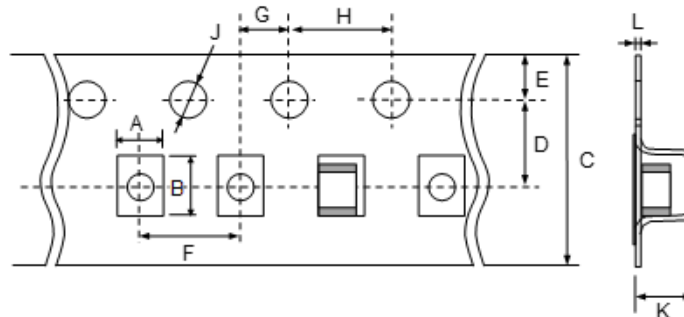
Packaging Quantity & Reel Specification



Unit: mm

Type	ΦA	ΦB	ΦC	W	T	Plastic tape
1210	180-0/+3	50 min	13.0 \pm 0.2	8.4+1.5	14.4 max	1K

Plastic Tape Size Specification



Unit: mm

Type	A	B	C	F	E	F	G	H	J	K	L
1210	2.80 ± 0.20	3.50 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 +0.1/-0	3.70 max	0.30 ± 0.10