



1 SCOPE

This specification shall cover the characteristics of the ceramic fliter with the type LTCV10.7MJ. The LTCV10.7MJ filters are small, high performance and very thin (1.5mm) chip devices consisting of 2 ceramic elements for communication equipment. They are designed on MgTiO₃ ceramic cap package.

2 PART NO.

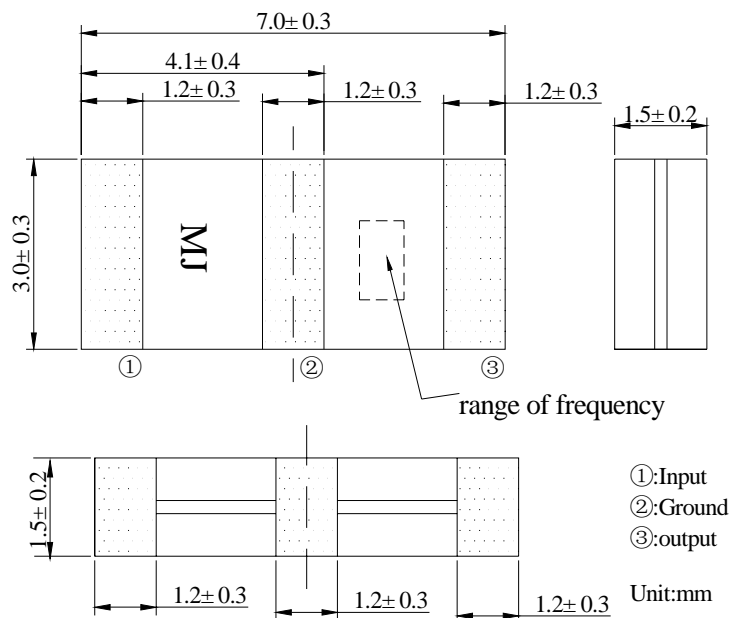
PART NUMBER	CUSTOMER PART NO.	SPECIFICATION NO.
LTCV10.7MJ		

3 OUTLINE DRAWING

3.1 Appearance

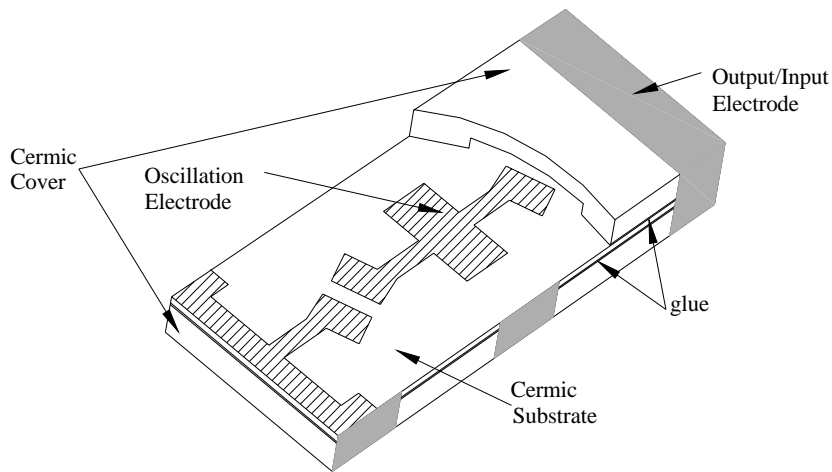
No visible damage and dirt.

3.2 Dimensions



DRAWING 1

3.3 STRUCTURE



4 ELECTRICAL SPECIFICATIONS

TABLE 1

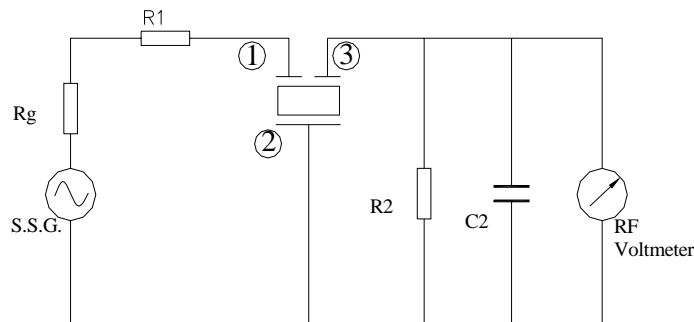
Items	Requirements
Center Frequency(f_0)(MHz) The center point of 3dB band width is defined as the center frequency and identified by the letters:A,B,C,D or E.	A: 10.700 ± 0.030 B: 10.670 ± 0.030 C: 10.730 ± 0.030 D: 10.640 ± 0.030 E: 10.760 ± 0.030
3dB Bandwidth(kHz)	150 ± 40
20dB Bandwidth(kHz) max	380
Insertion Loss (dB) max	5.5 ± 2.0
Ripple (dB) max	1.0 (within 3dB Bandwidth)
Spurious Response (dB) min	35 (9MHz-12MHz)
Input/Output Impedance(Ω)	330
Withstanding Voltage	50V DC 1 min
Insulation Resistance (M Ω) min	100 (DC 10V)
Operating temperature range($^{\circ}\text{C}$)	$-25\sim +85$
Storage temperature range($^{\circ}\text{C}$)	$-40\sim +85$

5 TEST

5.1 Test Conditions

Parts shall be tested under a condition (Temperature: $+20^{\circ}\text{C} \pm 15^{\circ}\text{C}$, Humidity: $65\% \pm 20\%$ R.H.) unless the standard condition (Temperature: $+25^{\circ}\text{C} \pm 3^{\circ}\text{C}$, Humidity: $65\% \pm 5\%$ R.H.) is regulated to test.

5.2 Test Circuit:



$R1=280\ \Omega (1 \pm 5\%)$, $R2=330\ \Omega (1 \pm 5\%)$, $Rg=50\ \Omega$ ①: Input
 $C2=10\ \text{PF}$ (Including stray capacitance and capacitance of RF Voltmeter) ②: Ground
 S.S.G: Output Voltmeter ③: Output

DRAWING 2

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

TABLE 2

No	Item	Condition of Test	Performance Requirements
2.1	Humidity	Stored at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, in 90% ~ 95% R.H. for 96h, and left at room temp. for 1h before measurement.	It shall fulfill the specifications in Table 3.
2.2	High Temperature Exposure	Stored in $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 96h, and left at room temp. for 1h before measurement.	It shall fulfill the specifications in Table 3.
2.3	Low Temperature Exposure	Stored in $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for 96h, and left at room temp. for 1h before measurement.	It shall fulfill the specifications in Table 3.
2.4	Temperature Cycling	After temp. cycling of -40°C (30 min) to $+85^{\circ}\text{C}$ (30 min) was performed 5 times, filter shall be measured after being placed in natural condition for 1h.	
2.5	Soldering Test	Passed through the reflow oven under the following condition for 2 times, and left at room temp. for 24h before measurement.	

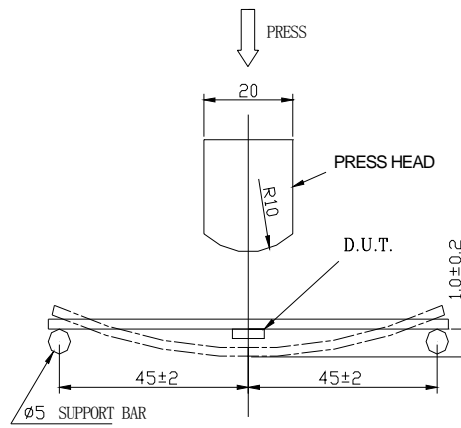
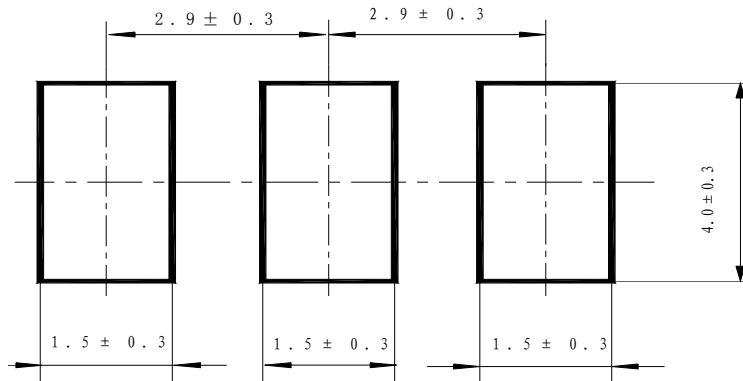
2.6	Solderability	Dipped in $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$ solder bath for $3\text{s} \pm 0.5\text{s}$ with rosin flux.		The terminals shall be at least 95% covered by solder
		Temperature at the surface of the substrate	Time	
		Preheat $150^{\circ}\text{C} \pm 5^{\circ}\text{C}$	$60\text{s} \pm 10\text{s}$	
		Peak $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$	$10\text{s} \pm 3\text{s}$	
2.7	Drop test	Free drop to the wood plate from the height of 70 cm for 3 times.		It shall fulfill the specifications in Table 3.
2.8	Vibration	Apply the vibration of sweep frequency 10 to 55Hz/minutes, amplitude 1.5mm, duration 2h in each direction of 3 planes.		It shall fulfill the specifications in Table 3.
2.9	Board Bending	Mount a glass-epoxy board (Width=40mm, thickness=1.6mm), then bend it to 1mm displacement and keep it for 5s. (See the following figure)		Mechanical damage such as breaks shall not occur.
		 <p>The diagram illustrates the board bending test setup. A glass-epoxy board (D.U.T.) is supported by two $\phi 5$ support bars. The distance between the support bars is 45 ± 2 mm. A press head with a radius of $R10$ and a width of 20 mm is applied to the top surface of the board. A downward force labeled 'PRESS' is applied to the press head. The displacement of the board at the center is 1.0 ± 0.2 mm.</p>		

TABLE 3 SPECIFICATION AFTER TEST ABOUT CHARACTERISTICS

No.	Item	Specification after test
3.1	Insertion Loss Drift (dB) max	± 2
3.2	3dB Bandwidth Drift (kHz) max	± 25
	20dB Bandwidth Drift (kHz) max	± 60
Note : The limits in the above table are referenced to the initial measurements.		

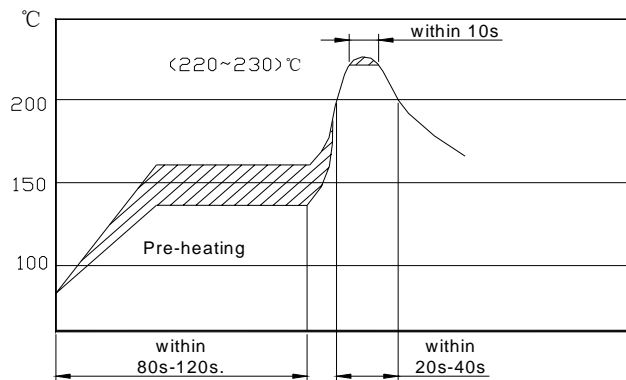
7 RECOMMENDED LAND PATTERN AND REFLOW SOLDERING STANDARD CONDITIONS

7.1 Recommended land pattern



DRAWING 4

7.2 Recommended reflow soldering standard conditions



DRAWING 5

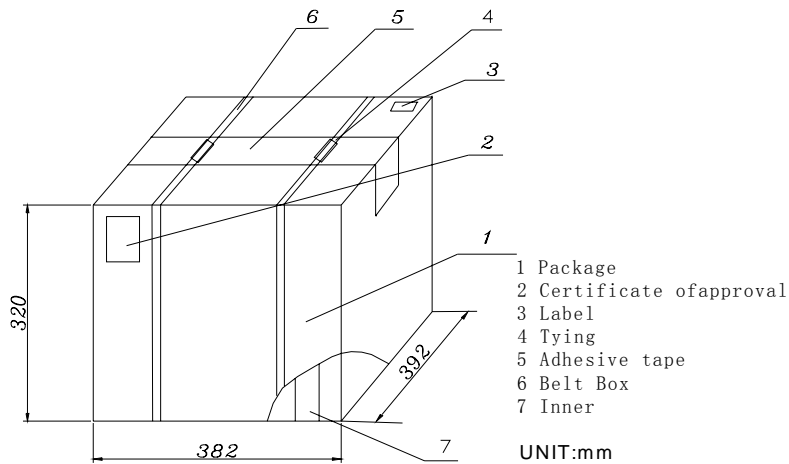
8 PACKAGE

To protect the products in storage and transportation, it is necessary to pack them (outer and inner package). On paper pack, the following requirements are requested.

8.1 Dimensions and Mark

At the end of package, the warning (moisture proof, upward put) should be stick to it.

Dimensions and Mark (see below)



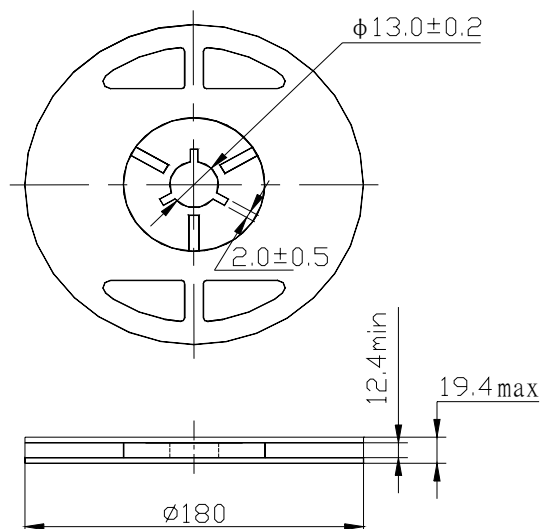
8.2 Section of package

Package is made of corrugated paper with thickness of 0.8cm. Package has 12 inner boxes, each box has 5 reels (each reel for plastic bag).

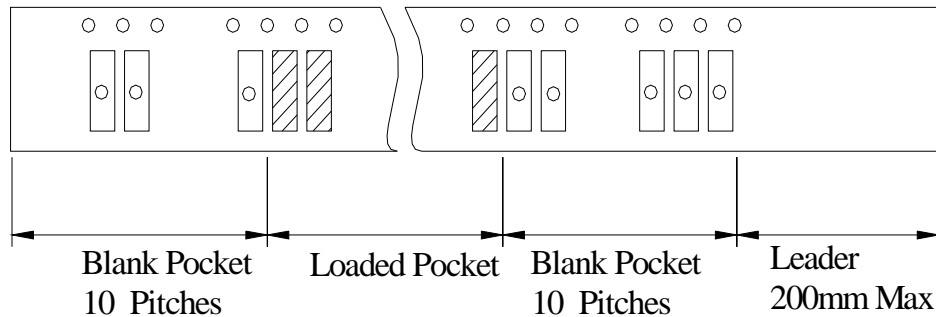
8.3 Quantity of package

Per plastic reel	1000 pieces of piezoelectric ceramic part
Per inner box	5 reels
Per package	12 inner boxes
(60000 pieces of piezoelectric ceramic part)	

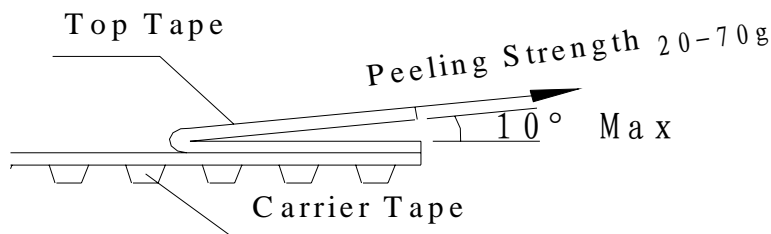
8.4 Reel



8.5 Packing Method Sketch Map



8.6 Test Condition Of Peeling Strength



9 OTHER

9.1 Caution of use

9.1.1 Do not use this product with bend. Please don't apply excess mechanical stress to the component and terminals at soldering.

9.1.2 The component may be damaged when an excess stress will be applied.

9.1.3 Conformal coating of the component is acceptable, However the resin materials, curing temperature and other process conditions should be evaluated to conform stable electrical characteristics are maintained.

9.2 Notice

9.2.1 This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit.

9.2.2 Please return one of this specification after your signature of acceptance.

9.2.3 When something gets doubtful with this specifications, we shall jointly work to get an agreement.

SHENZHEN LUGUANG ELECTRONIC TECHNOLOGY CO.,LTD.