

### 1. SCOPE

This specification shall cover the characteristics of the ceramic fliter with the type LTCV10.7MS2. The LTCA10.7MS2 filters are small, high performance and very thin (1.5mm) chip devices consisting of 2 ceramic elements for communication equipment. They are designed on MgTiO<sub>3</sub> ceramic cap package.

### 2. PART NO.:

PART NUMBER	CUSTOMER PART NO	SPECIFICATION NO
LTCV10.7MS2		

### 3. OUTLINE DRAWING AND DIMENSIONS:

Appearance: No visible damage and dirt.

Dimensions: According to Figure 1.

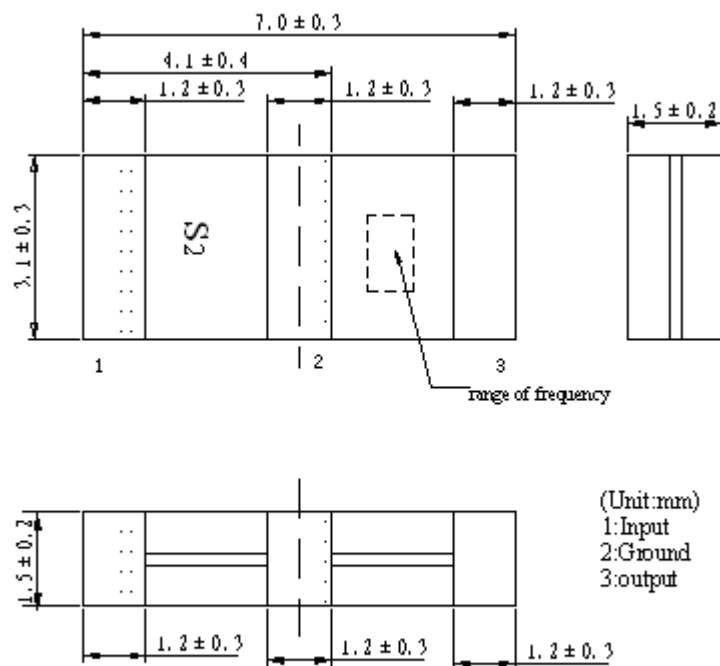
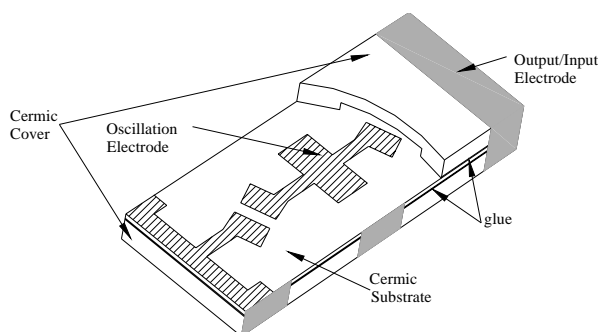


Figure 1.

#### 4. STRUCTURE



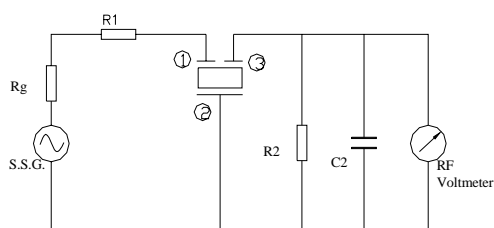
#### 5. ELECTRICAL SPECIFICATIONS:

No.	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
5.2	3dB Bandwidth(kHz)	230 ± 50
5.3	20dB Bandwidth(kHz) max	510
5.4	Insertion Loss (dB)	3.5 ± 2.0 (at minimum loss point)
5.5	Ripple (dB) max	1.0 (within 3dB Bandwidth)
5.6	Spurious Response (dB) min	35 (9MHz-12MHz)
5.7	Input/Output Impedance( $\Omega$ )	330
5.8	Withstanding Voltage	50V DC 1 min
5.9	Insulation Resistance (M $\Omega$ ) min	100 (DC 10V)
5.10	Operating temperature range( $^{\circ}$ C)	-25 ~ +85
5.11	Storage temperature range( $^{\circ}$ C)	-40 ~ +85

#### 6. MEASUREMENT:

Measurement Conditions: Parts shall be measured under a condition ( Temp.: 20±15  $^{\circ}$ C ,Humidity : 65±20% R.H.) unless the standard condition(Temp.: 25±3  $^{\circ}$ C ,Humidity : 65±5% R.H.) is regulated to measure.

##### Test Circuit:



$R_1=280 \Omega \pm 5\%$ ,  $R_2=330 \Omega \pm 5\%$ ,  $R_g=50 \Omega$  ①:Input  
 $C_2=10 \text{ Pf}$  (Including stray capacitance and capacitance of RF Voltmeter) ②:Ground  
 S.S.G.:Output Voltmeter ③:Output

## 7. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

NO.	Item	Condition of Test	Performance Requirement	
7.1	Low Temp Storage	Stored in $-40 \pm 3^{\circ}\text{C}$ for 96 hours, and left at room temp. for 1 hour before measurement.	Meet Table 1	
7.2	High Temp Storage	Stored in $85 \pm 2^{\circ}\text{C}$ for 96 hours, and left at room temp. for 1 hour before measurement.	Meet Table 1	
7.3	Humidity	Stored at $40 \pm 2^{\circ}\text{C}$ , in 90~95%R.H. for 96 hours, and left at room temp. for 1 hour before measurement.。	Meet Table 1	
7.4	Thermal Shock	After temp. cycling of $-40^{\circ}\text{C}$ (30 minutes) to $+85^{\circ}\text{C}$ (30 minutes) was performed 5 times, filter shall be measured after being placed in natural condition for 1 hour .	Meet Table 1	
7.5	Soldering Test	Passed through the reflow oven under the following condition for 2 times, and left at room temp. for 24 hours before measurement.	Meet Table 1	
7.6	Solderability	Dipped in $235 \pm 5^{\circ}\text{C}$ solder bath for $3 \pm 0.5$ seconds with rosin flux.	The terminals shall be at least 95% covered by solder	
		Temp. at the surface of the substrate		Time
		Preheat $150 \pm 5^{\circ}\text{C}$		$60 \pm 10$ sec
		Peak $235 \pm 5^{\circ}\text{C}$		$10 \pm 3$ sec
7.7	Drop test	Free drop to the wood plate from the height of 70 cm for 3 times.	Meet Table 1	
7.8	Vibration	Apply the vibration of sweep frequency 10 to 55Hz/minutes, amplitude 1.5mm, duration 2 hours in each direction of 3 planes.	Meet Table 1	
7.9	Board Bending	Mount on a glass-epoxy board( width=50 mm, thickness=1.6mm),then bend it to 1mm displacement(velocity 1mm/sec) and keep it for 5 seconds.	Mechanical damage such as break shall not occur	

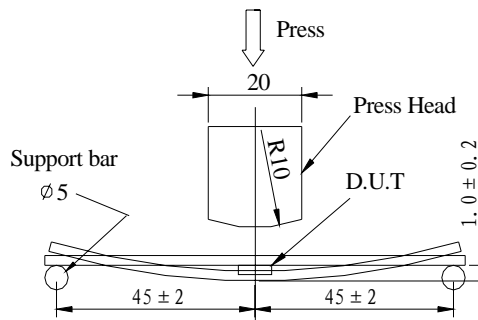


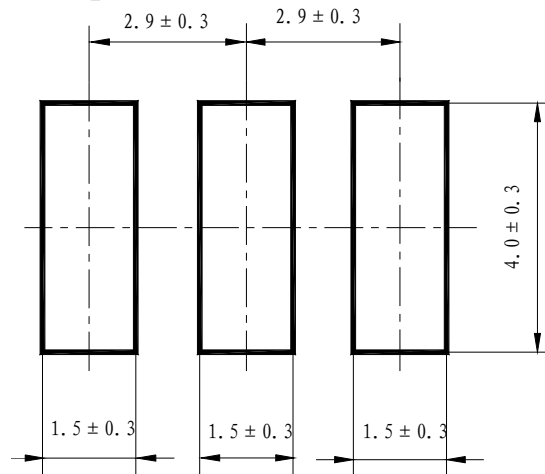
TABLE 1

Item	Specification
Insertion Loss Drift (dB) max	$\pm 2$
3dB Bandwidth Drift (kHz) max	$\pm 25$
20dB Bandwidth Drift (kHz) max	$\pm 60$

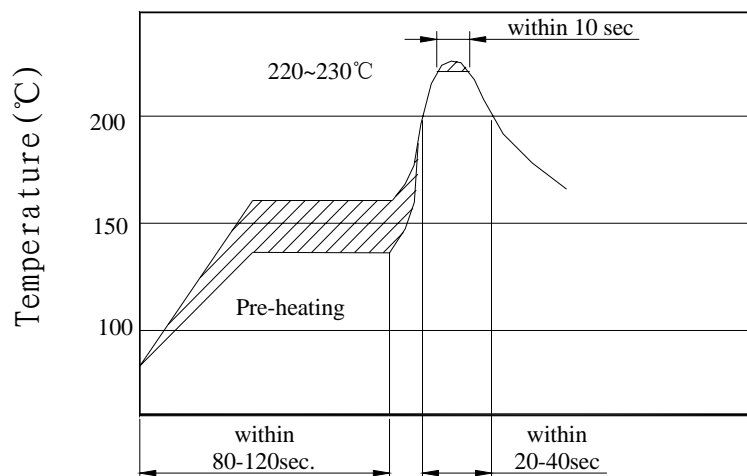
Note: The limits in the above table are referenced to the initial measurements.

### 8. RECOMMENDED LAND PATTERN AND REFLOW SOLDERING STANDARD CONDITIONS

#### Recommended land pattern



#### Recommended reflow soldering standard conditions



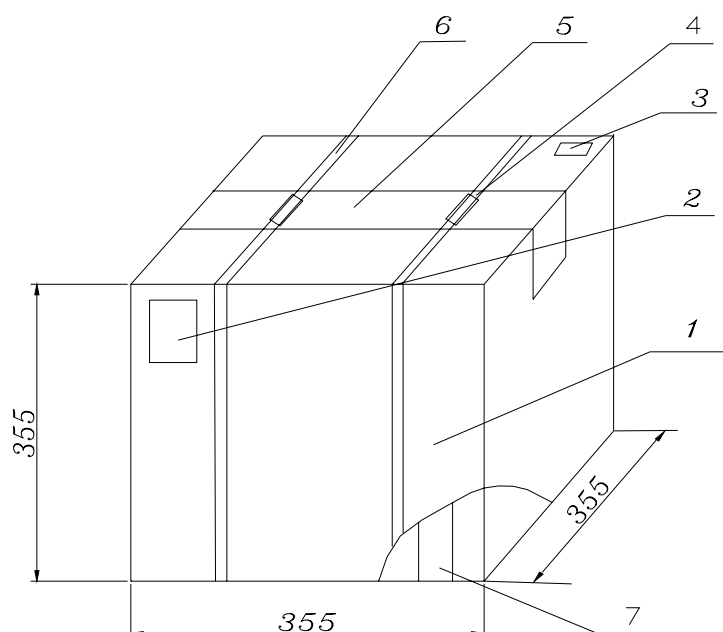
## 9. PACKAGE

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.

### Dimensions and Mark

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

Dimensions and Mark (see below)



NO.	Name	Quantity	Notes
1	Package	1	
2	Certificate of approval	1	
3	Label	1	
4	Tying	2	
5	Adhesive tape	1.2m	
6	Belt	2.9m	
7	Inner Box	10	



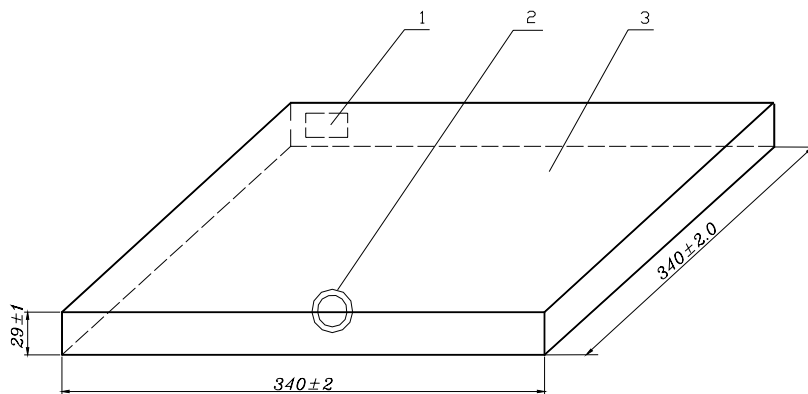
### Section of package

Package is made of corrugated paper with thickness of 0.8cm. Package has 10 inner boxes, each box has 1 reels, every reel is vacuum packed for plastic bag (at 300 Torr of vacuum rate).

### Quantity of package

- Per plastic reel      4000 pieces of piezoelectric ceramic part
- Per inner box        1 reels
- Per package         10 inner boxes ( 40000 pieces of piezoelectric ceramic part )

### Inner Packing Dimensions



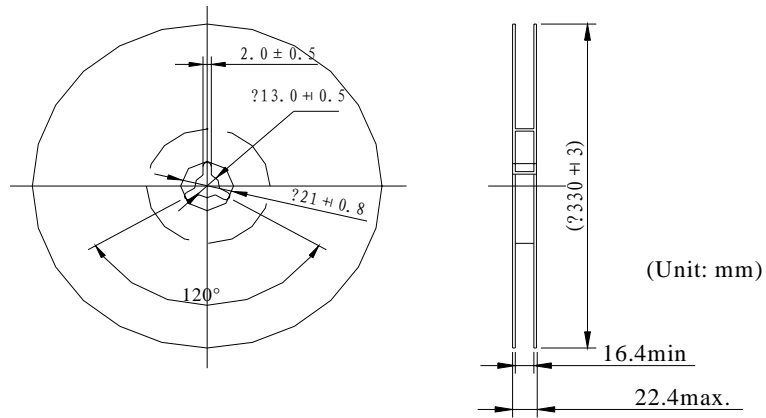
1.UNIT: mm

1	Label
2	QC Label
3	Inner Box

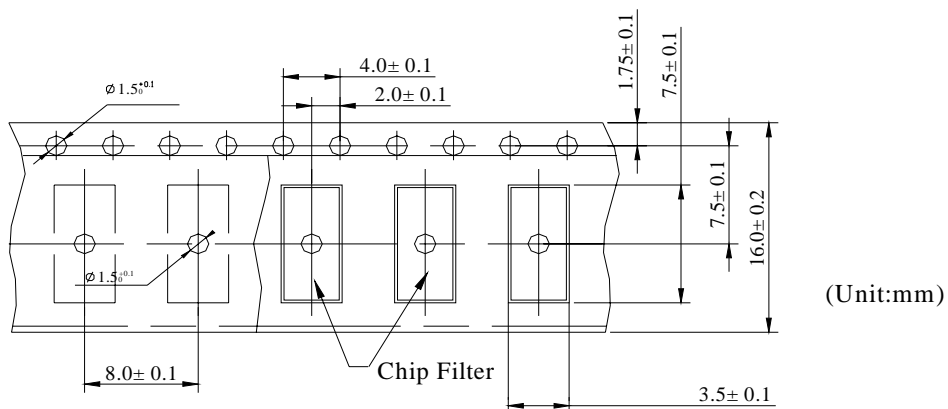
Pars shall be packaged in box with hold down tape upside. Part No., quantity and lot No.



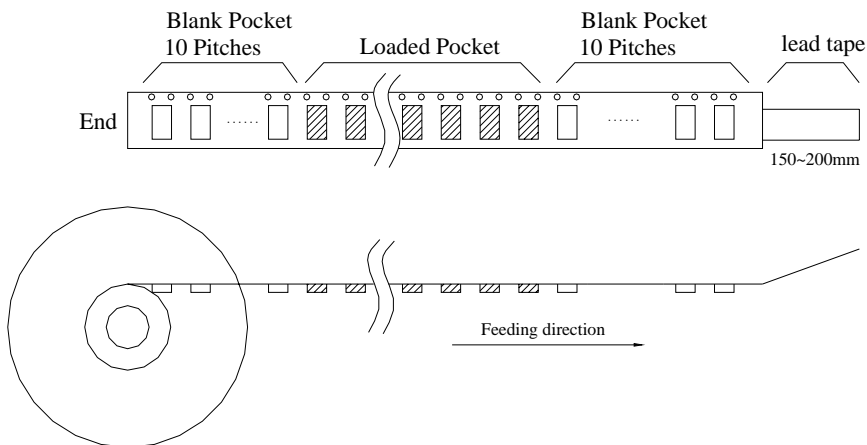
### Reel



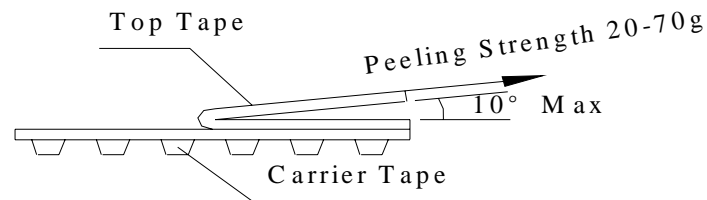
### Taping Dimensions



### Tape Characteristics



## Test Condition Of Peeling Strength



## 10 OTHER

### 10.1 Caution of use

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

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

10.1.3 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.

### 10.2 Notice

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

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

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