

1 SCOPE

This specification shall cover the characteristics of the ceramic filter with the type LTCV10.7MA19. The LTCV10.7MA19 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.

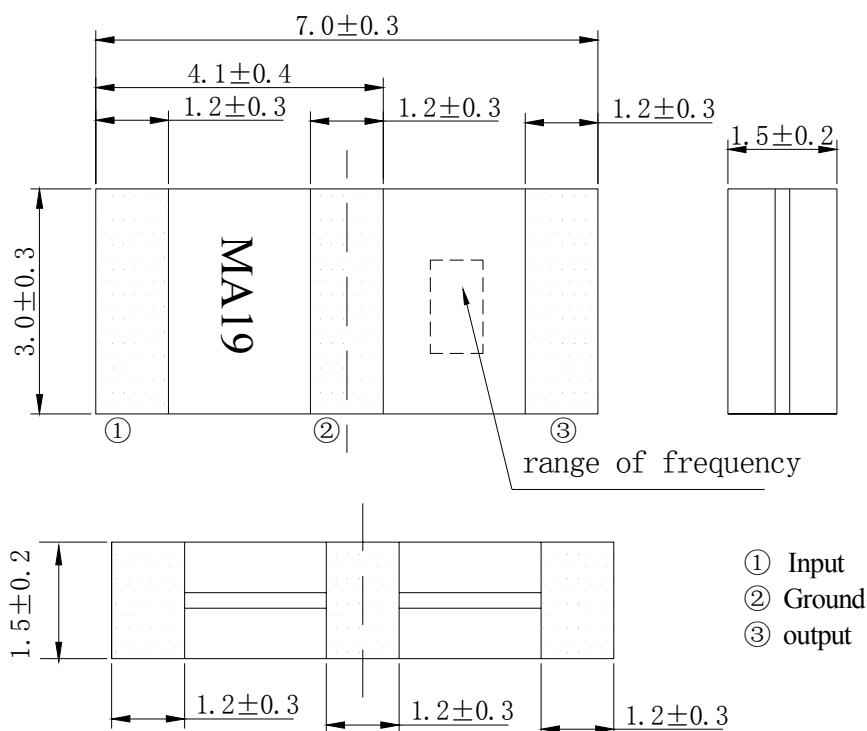
PART NUMBER	CUSTOMER PART NO	SPECIFICATION NO
LTCV10.7MA19		

3 OUTLINE DRAWING AND DIMENSIONS:

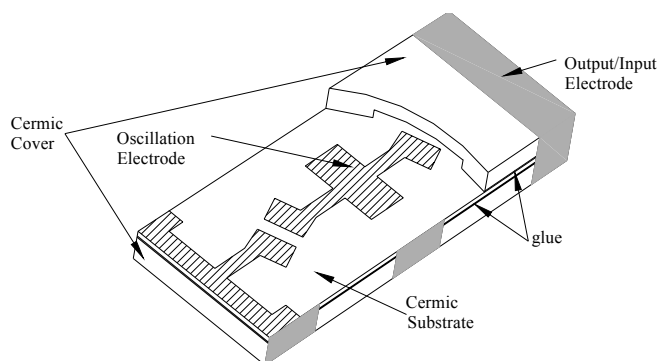
3.1 Appearance: No visible damage and dirt.

3.2 Except the chip(ceramic element, ceramic base, capacitance slice), the materials don't contain lead.

3.3 Dimensions: According to Figure 1.



3.4 STRUCTURE



4 RATING AND ELECTRICAL SPECIFICATIONS:

4.1 RATING

Items	Content
Withstanding Voltage (V)	50 (DC, 1min)
Insulation Resistance R_i , ($M\Omega$) min.	100 (100V, 1min)
Operating Temperature Range ($^{\circ}C$)	-20~+80
Storage Temperature Range ($^{\circ}C$)	-40~+85

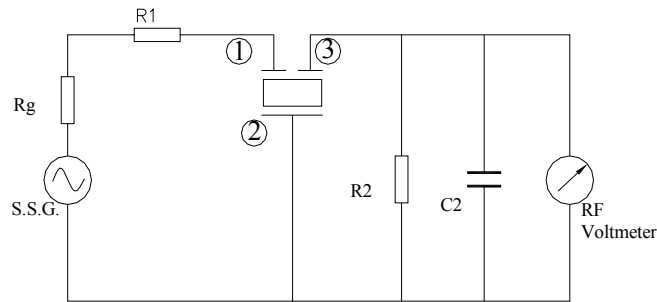
4.2 ELECTRICAL SPECIFICATIONS

Items	Content
Center Frequency f_n (MHz)	10.700
3dB Bandwidth(kHz)	$f_n \pm 175$
20dB Bandwidth(kHz) max	950
Insertion Loss (dB)	3.0 ± 2.0 (at minimum loss point)
Ripple (dB) max	3.0 (within 3dB Bandwidth)
Spurious Response (dB) min	20 (5MHz-15MHz)
Input/Output Impedance(Ω)	470

5 MEASUREMENT

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

5.2 Test Circuit



$R1+Rg = R2=4700\Omega\pm 5\%$, $Rg=50\Omega$ ①:Input
 $C2=10\text{ pF}$ (Including stray capacitance and capacitance of RF Voltmeter) ②:Ground
 S.S.G.:Output Voltmeter ③:Output

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No.	Item	Condition of Test	Performance Requirement	
6.1	Low Temp Storage	Stored in $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for 96h, and left at room temp. for 1h before measurement.	Meet Table 1	
6.2	High Temp Storage	Stored in $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 96h, and left at room temp. for 1h before measurement.	Meet Table 1	
6.3	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. .	Meet Table 1	
6.4	Thermal Shock	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 .	Meet Table 1	
6.5	Soldering Test	Passed through the reflow oven under the following condition for 2 times, and left at room temp. for 24h before measurement.	Meet Table 1	
		Temp. 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 $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$		$10\text{s} \pm 3\text{s}$

(To be continued)

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

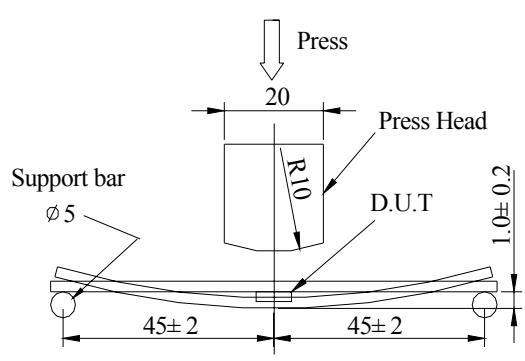
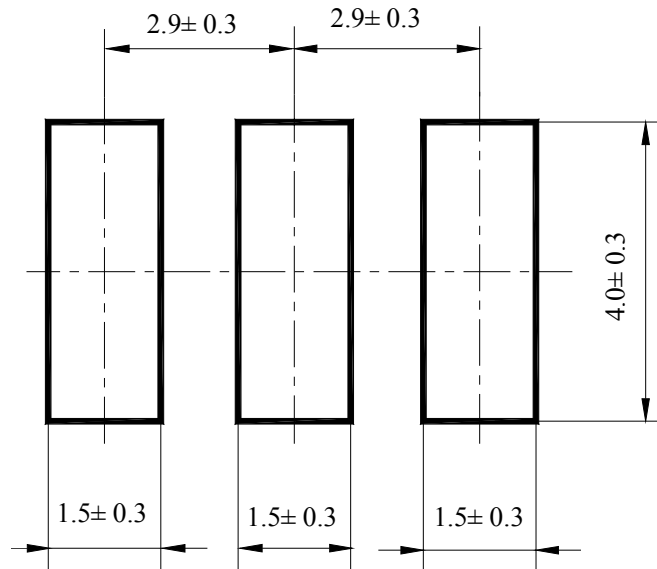
6.6	Solderability	Dipped in $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$ solder bath for $3\text{s} \pm 0.5\text{s}$ with rosin flux.	The terminals shall be at least 95% covered by solder
6.7	Drop test	Free drop to the wood plate from the height of 70 cm for 3 times.	Meet Table 1
6.8	Vibration	Apply the vibration of sweep frequency 10 to 55Hz/minutes, amplitude 1.5mm, duration 2h in each direction of 3 planes.	Meet Table 1
6.9	Board Bending	<p>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 5s.</p> 	Mechanical damage such as break shall not occur

TABLE 1

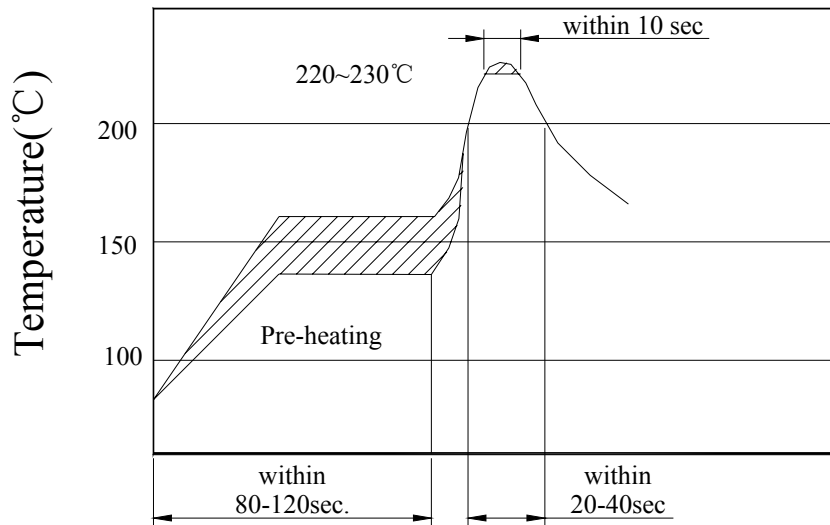
Item	Specification
Insertion Loss Drift (dB) max	± 2
3dB Bandwidth Drift (kHz) max	± 25
20dB Bandwidth Drift (kHz) max	± 60
Note: The limits in the above table are referenced to the initial measurements.	

7 RECOMMENDED LAND PATTERN AND REFLOW SOLDERING
STANDARD CONDITIONS

7.1 Recommended land pattern



7.2 Recommended reflow soldering standard conditions



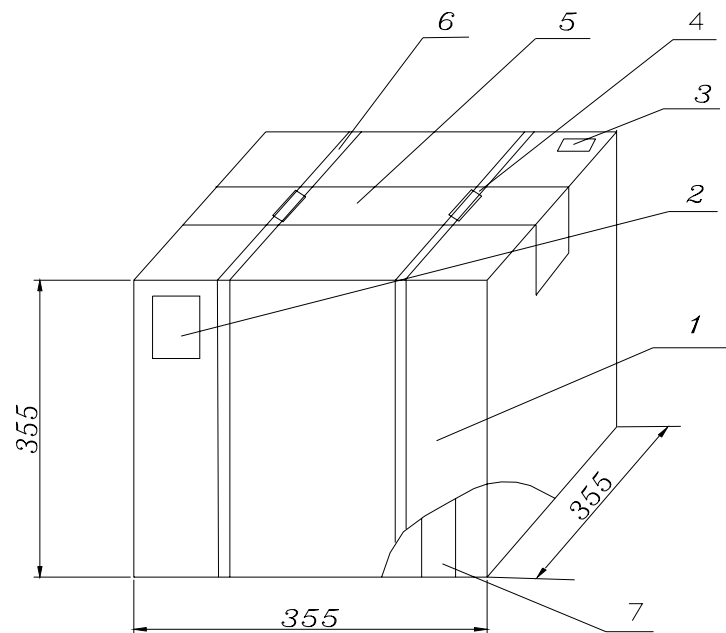
8 PACKAGE

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)



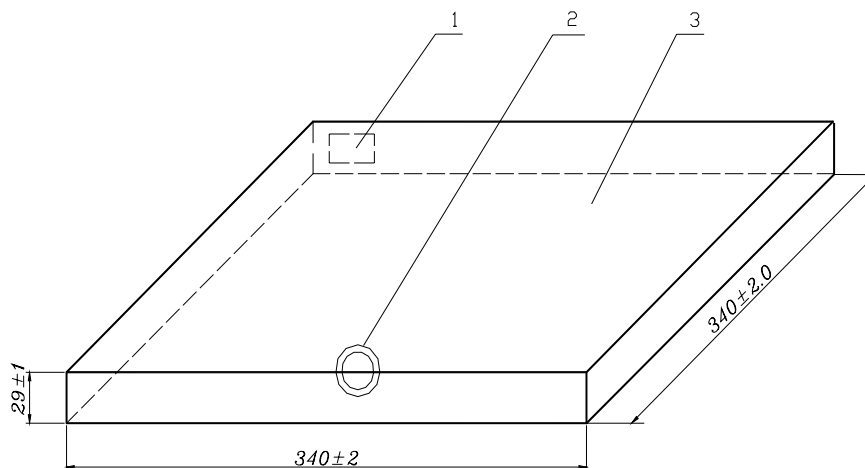
NO.	Name	Quantity	Notes
1	Package	1	
2	Certificate of approval	1	
3	Label	1	
4	Tying	2	
5	Adhesive tape	1.2m	
6	Belt	2.9m	
7	Inner Box	10	

8.2 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).

8.3 Quantity of package

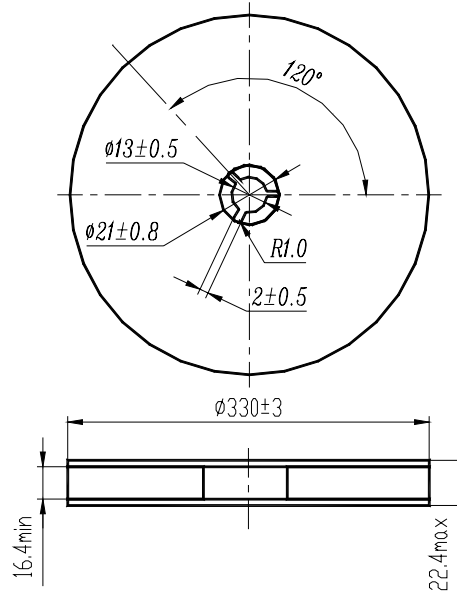
Per plastic reel	4000 pieces of piezoelectric ceramic part
Per inner box	1 reels
Per package	10 inner boxes (40000 pieces of piezoelectric ceramic part)

8.4 Inner Packing Dimensions


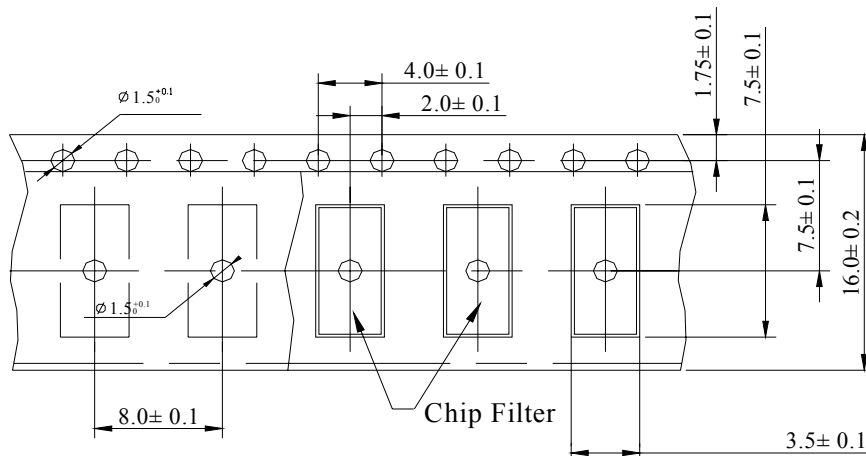
1	Label
2	QC Label
3	Inner Box

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

8.5 Reel

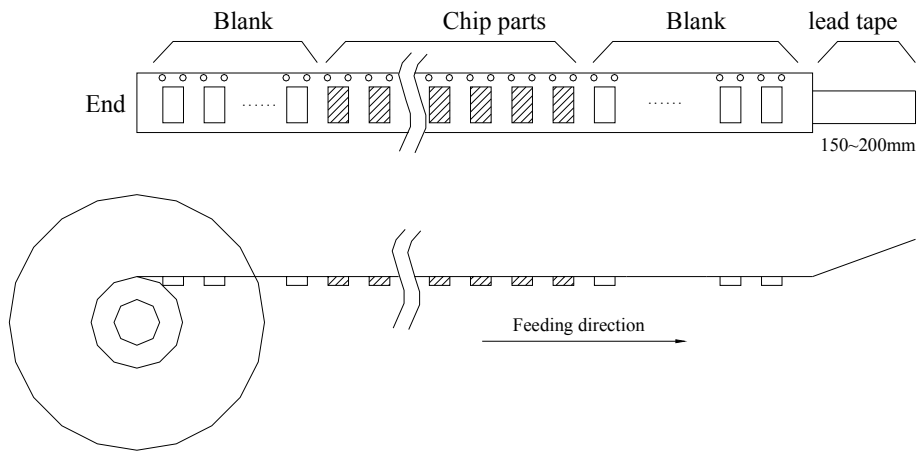


8.6 Taping Dimensions

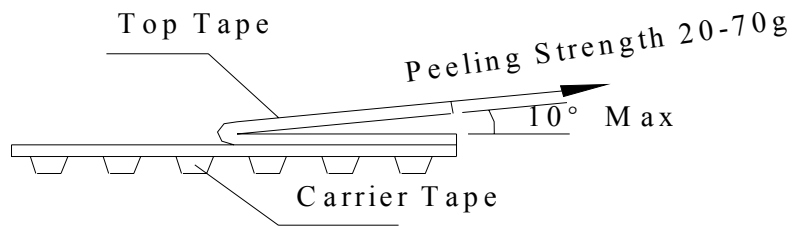


(Unit:mm)

8.7 Tape Characteristics



8.8 Test Condition Of Peeling Strength



8 OTHER

8.1 Caution of use

8.1.1 Do not clean or wash the component for it is not hermetically sealed.

8.1.2 Don't be close to fire

8.1.3 Don't apply excess mechanical stress to the component.

8.1.4 Don't bend terminals of the component

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

8.2 Notice

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

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