

规格书编号

SPEC NO :

产品规格书

SPECIFICATION

CUSTOMER 客户: _____
PRODUCT 产品: _____ CERAMIC FILTER _____
MODEL NO 型号: _____ LT10.7MA5 _____
PREPARED 编制: _____ fengyu _____ CHECKED 审核: _____ york _____
APPROVED 批准: _____ lijiating _____ DATE 日期: _____ 2008-6-28 _____

客户确认 CUSTOMER RECEIVED:		
审核 CHECKED	批准 APPROVED	日期 DATE

无锡市好达电子有限公司
Shoulder Electronics Limited

1 SCOPE

This specification shall cover the characteristics of the ceramic filter with the type LT10.7MA5.

2 PART NO.

PART NUMBER	CUSTOMER PART NO	SPECIFICATION NO
LT10.7MA5		

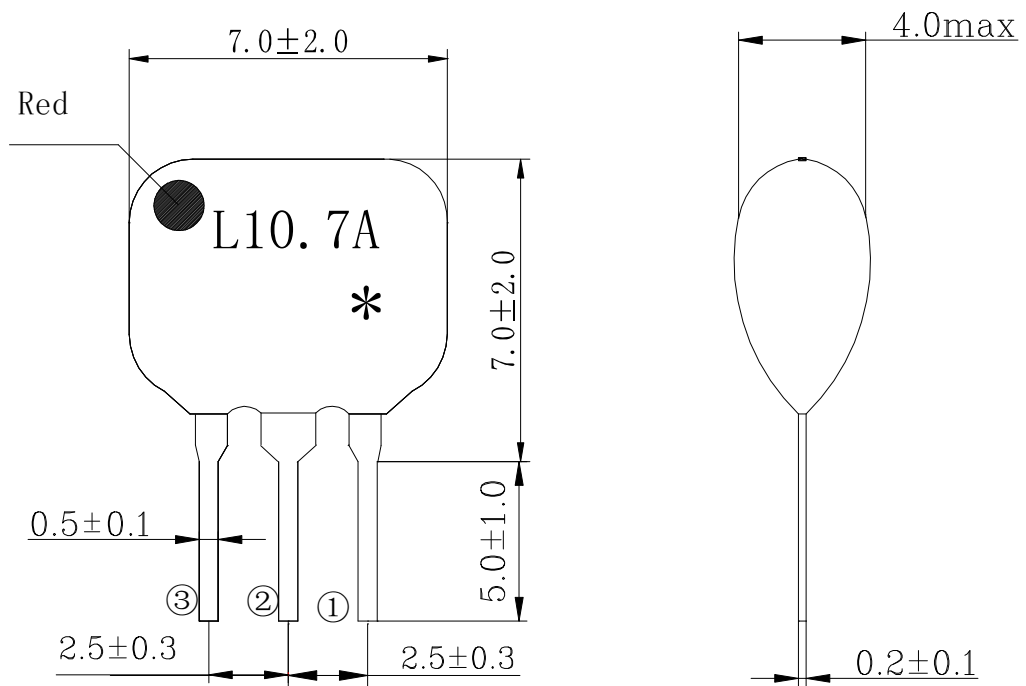
3 OUTLINE DRAWING AND DIMENSIONS

3.1 Appearance: No visible damage and dirt.

3.2 Construction: Leads are soldered on electrode and body is molded by resin.

3.3 Except the chip(ceramic element), the materials don't contain lead.

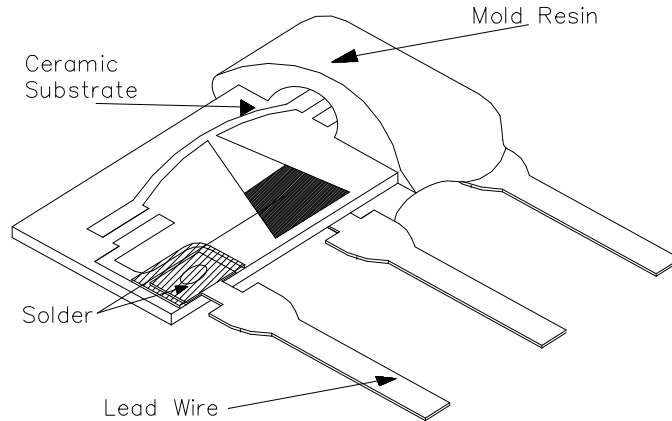
3.4 Dimensions



- ① Input
- ② Ground
- ③ Output

“*” : EIAJ Monthly Code

3.5 STRUCTURAL CHARACTERISTIC



Component	Material
Lead Wire	Solder plating copper or iron wire
Mold Resin	epoxy resin
Solder	High-melting solder
Ceramic Substrate	Lead titanate-zirconate

4 . ELECTRICAL SPECIFICATIONS AND RATING

4.1 RATING

Item	Requirements
Withstand DC Voltage	50V 1min max
Maximum applied DC voltage	10V
Operating temperature	-20℃ ~ 80℃
Temp. Coefficient of Frequency PPM/℃ max	± 50 (Center Frequency drift, -25℃~85℃)
Storage temperature range	-40℃ ~ 85℃

4.2 ELECTRICAL SPECIFICATIONS

Item	Requirements
Center Frequency fo (MHz)	10.700 ± 0.030

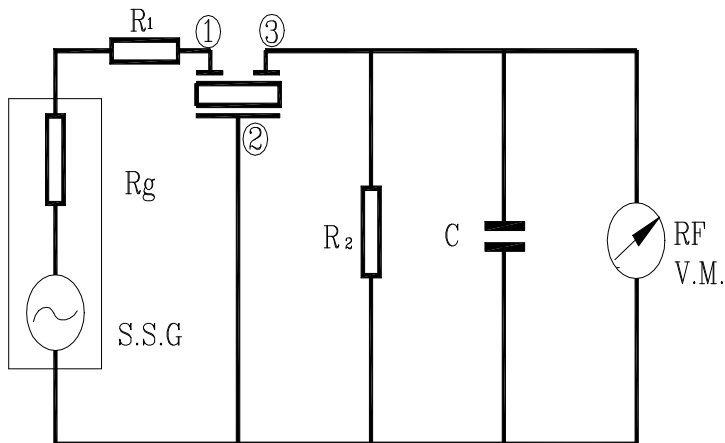
3dB Band Width (kHz)	280±50
20dB Band Width (kHz) max	650
Insertion Loss (dB) max	6.0
Ripple (within 3dB bandwidth) (dB) max	1.0
Spurious Response (dB) min	30 (9—12MHz)
Input/Output Impedance (Ω)	330

5 TEST

5.1 Test Conditions

Parts shall be measured under a condition (Temp.: 20±15°C, Humidity : 65±20% R.H.) unless the standard condition (Temp.: 25±2°C, Humidity : 65±5% R.H.) is regulated to measure.

5.2 Test Circuit



$$R_g + R_1 = R_2 = 330 \Omega$$

$$C = 10\text{pF} (\text{Including stray capacitance and input capacitance of RF voltmeter})$$

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

No.	Item	Condition of Test	Performance Requirements
6.1	Humidity	Subject the filter at 60 °C ± 2 °C and 90%-95% R.H. for 1000h, filter shall be	It shall fulfill the specifications in

		measured after being placed in natural conditions for 1h.	Table 1.															
6.2	High Temperature Exposure	Subject the filter to $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 1000h, filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill the specifications in Table 1.															
6.3	Low Temperature Exposure	Subject the filter to $-40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 1000h, filter shall be measured after being placed in natural conditions for 1h.	It shall fulfill the specifications in Table 1.															
6.4	Temperature Cycling	<p>After temperature cycling of blow table was performed 5 times, filter shall be measured after being placed in natural conditions for 1h.</p> <table border="1"> <thead> <tr> <th></th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>$-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$</td> <td>$(30 \pm 3)$ min</td> </tr> <tr> <td>2</td> <td>Room temp.</td> <td>5s</td> </tr> <tr> <td>3</td> <td>$+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$</td> <td>$(30 \pm 3)$ min</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>5 s</td> </tr> </tbody> </table>		Temperature	Time	1	$-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$	(30 ± 3) min	2	Room temp.	5s	3	$+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$	(30 ± 3) min	4	Room temp.	5 s	It shall fulfill the specifications in Table 1.
	Temperature	Time																
1	$-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$	(30 ± 3) min																
2	Room temp.	5s																
3	$+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$	(30 ± 3) min																
4	Room temp.	5 s																
6.5	Vibration	Subject the filter to vibration for 2h.each in x y and z axis with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10Hz-55Hz-10Hz and then filter shall be measured.	It shall fulfill the specifications in Table 1.															
6.6	Mechanical Shock test	Apply the half-sine shock pulses: 981m/s^2 ,6ms for 3 times in each direction of three mutually perpendicular planes.	No visible damage and it shall fulfill the specifications in Table 1.															
6.7	Drop test	Filter shall be measured after 3 times random dropping from the height of 1m on concrete floor.	No visible damage and it shall fulfill the specifications in Table 1.															

6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

(Continued from the preceding page)

No.	Item	Condition of Test	Performance Requirements
6.8	Resistance to Soldering Heat	<p>1) Lead terminals are immersed up to 2 mm from filter's body in soldering bath of $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $10\text{s} \pm 1\text{s}$ and then filter shall be measured after being placed in natural conditions for 1h.</p> <p>2) Lead terminals is directly contacted with the tip of soldering iron of $350^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for</p>	It shall fulfill the specifications in Table 1.

		5.0s \pm 0.5s and then filter shall be measured after being placed in natural conditions for 1h.	
6.9	Solderability	Lead terminals are immersed up to 2mm from filter's body in soldering bath of 250 $^{\circ}$ C \pm 5 $^{\circ}$ C for 3s \pm 0.5s.	More than 95% of the terminal surface of the filter shall be covered with fresh solder.
6.10	Terminal Strength	Force of 5N is applied to each lead in axial direction for 10s \pm 1s.	No visible damage and it shall fulfill the specifications in Table 1.
6.10.1	Terminal Pulling	When force of 5N is applied to each lead in axial direction, the lead shall folded up 90 $^{\circ}$ from the axial direction and folded back to the axial direction. The speed of folding shall be each 3s.	
6.10.2	Terminal Bending		

TABLE 1 SPECIFICATION AFTER TEST ABOUT CHARACTERISTICS

Item	Specification after test
Center Frequency drift	\pm 30kHz max
Insertion Loss drift	\pm 2dB max.
3dB Band Width drift	\pm 20kHz max.
20dB Band Width drift	\pm 30kHz max.
Spurious Response	28 dB min
Note: The limits in the above table are referenced to the initial measurements.	

7 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.

7.1 Section of package

Package is made of corrugated paper with thickness of 0.8cm.Package has 2 inner packages, each has 20 inner boxes (each box for plastic bag).

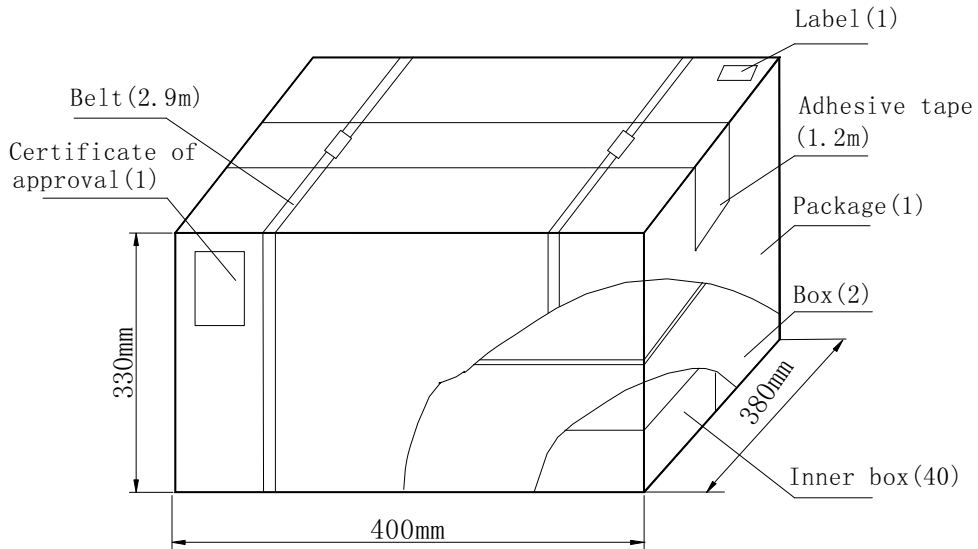
7.2 Quantity of package

Per plastic bag	500 pieces
Per inner box	3 plastic bags
Per inner package	20 inner boxes
Per package	2 inner packages

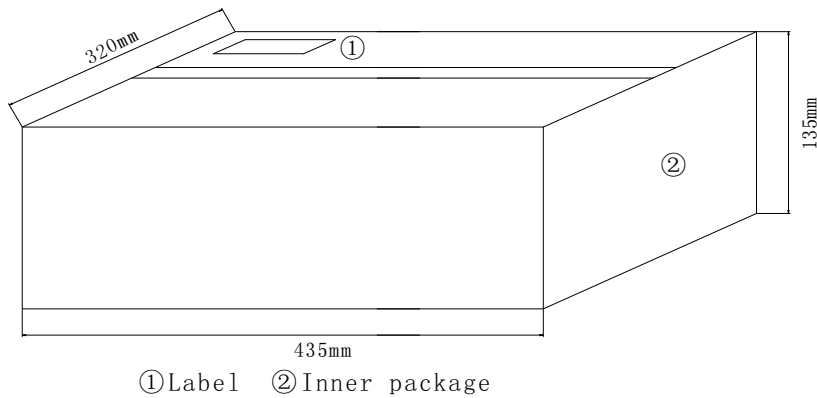
(60000 pieces of piezoelectric ceramic part)

7.3 Dimensions and Mark

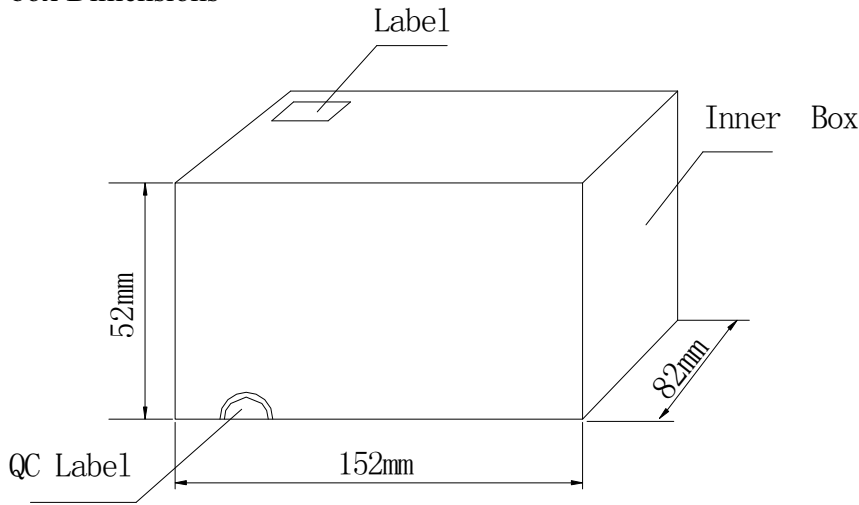
At the end of package, the warning (moisture proof, upward put) should be stick to it (see below) .



7.4 Inner package



7.5 Inner box Dimensions



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

8 EIAJ Monthly Code

2009/2011/ 2013/		/2010/ 2012 / 2014	
MONTH	CODE	MONTH	CODE
JAN	A	JAN	N
FEB	B	FEB	P
MAR	C	MAR	Q
APR	D	APR	R
MAY	E	MAY	S
JUN	F	JUN	T
JUL	G	JUL	U
AUG	H	AUG	V
SEP	J	SEP	W
OCT	K	OCT	X
NOV	L	NOV	Y
DEC	M	DEC	Z

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 This specification mentions the quality of the component as a single unit. Please insure

the component is thoroughly evaluated in your application circuit.

9.1.4 All kinds of reflow soldering must not be applied on the component.

9.1.5 Cleaning or washing of the component is not acceptable due to non sealed construction.

9.2 Notice

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

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

9.2.3 Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miss-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.