# TIGER ELECTRONIC CO.,LTD

1. SCOPE

This specification shall cover the characteristics of the ceramic filter with the type LT10.7MS2.

2. PART NO.:

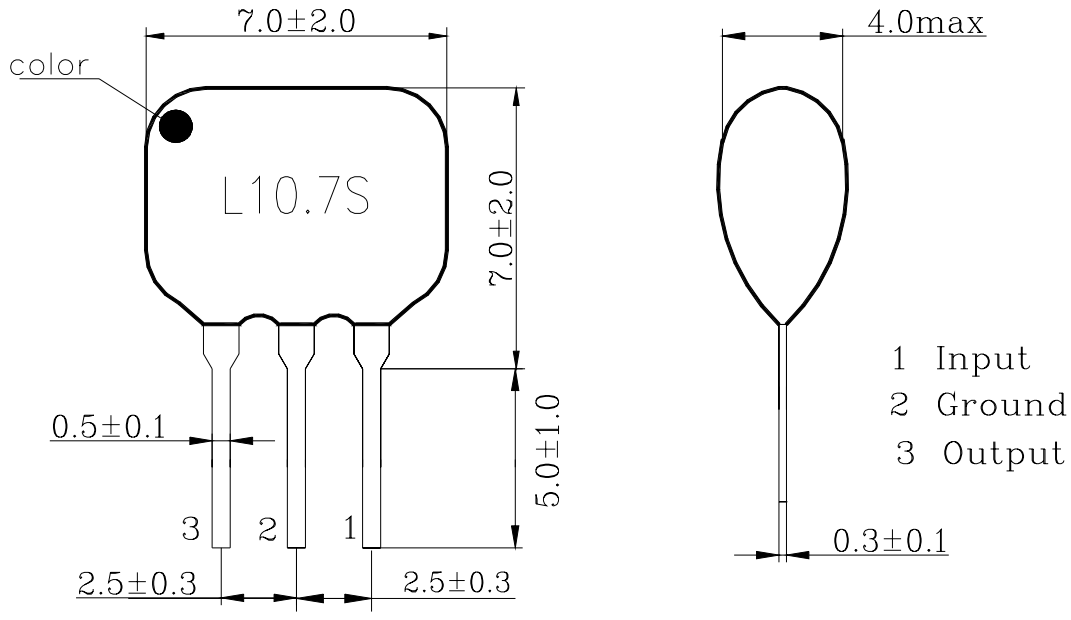
| PART NUMBER | CUSTOMER PART NO | SPECIFICATION NO |
|---|---|---|
| LT10.7MS2 | | |

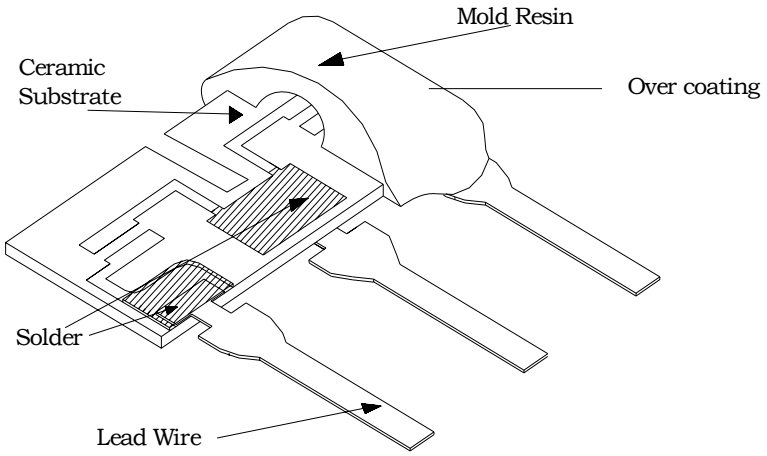
3. OUTLINE DRAWING AND STRUCTURE:

Appearance: No visible damage and dirt.

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

Dimensions:






## 3.4 STRUCTURE

| Component | Material |
|---|---|
| Lead Wore | Solder plating copper wire |
| Mold Resin | epoxy resin |
| Solder | High-melting solder (No Pb) |
| Ceramic Substrate | Lead titanate-zirconate |
| Over coating | Clear Epoxy Resin |

# 4. RATING AND ELECTRICAL SPECIFICATIONS:

## 4.1 RATING

| Items | Content |
|---|---|
| Withstand DC Voltage max | 50V 1minute |
| Applied DC voltage max | 10V |
| Operating temperature | -20℃～80℃ |
| Temp. Coefficient of Frequency (%) max | ±0.5（Center Frequency drift，-20℃~80℃） |
| Storage temperature range | -40℃～80℃ |

4.2 ELECTRICAL SPECIFICATIONS

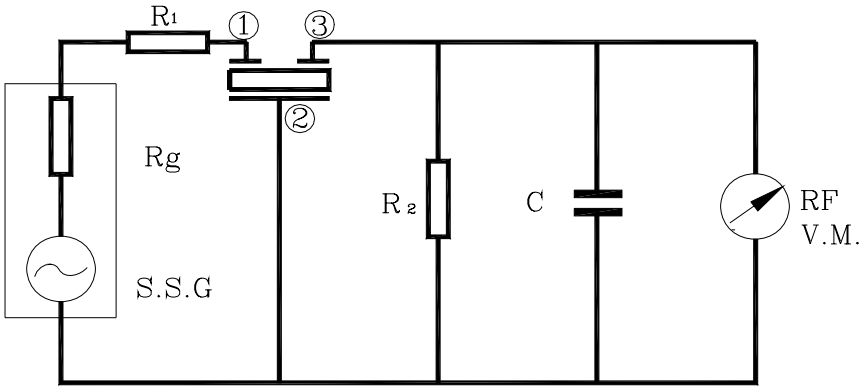
| Items | Content |
|---|---|
| Center Frequency fo (MHz) | 10.700±0.030 (Red)<br>10.670±0.030(Blue)<br>10.730±0.030(Orange) |
| 3dB Band Width (kHz) | 230±50 |
| 20dB Band Width (kHz) max | 570 |
| Insertion Loss (dB) max | 6.0 |
| Ripple (within 3dB bandwidth) % max | 1.0 |
| Spurious Response (dB) min | 40 (9 MHz ~12MHz) |
| Input/Output Impedance (Ω) | 330 |

5. MEASUREMENT:

Measurement Conditions:

Parts shall be measured under a condition ( Temp.: 20℃ ±15 ℃ ,Humidity : 65%±20% R.H.) unless the standard condition(Temp.: 25℃±3℃,Humidity : 65%±5% R.H.) is regulated to measure.

Test Circuit:




Rg+R1=R2=330Ω

C=10pF(Including stray capacitance and input capacitance of RF voltmeter)

## 6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

<table>
<tr><th>No</th><th>Item</th><th>Condition of Test</th><th>Performance Requirements</th></tr>
<tr><td>6.1</td><td>Humidity</td><td>Subject the filter at (60 ± 2) ℃ and 90%~95% R.H. for 100 hours, filter shall be measured after being placed in natural conditions for 1 hour.</td><td>It shall fulfill the specifications in Table 1.</td></tr>
<tr><td>6.2</td><td>High Temperature Exposure</td><td>Subject the filter to (85 ± 5) ℃ for 100 hours, filter shall be measured after being placed in natural conditions for 1 hour.</td><td>It shall fulfill the specifications in Table 1.</td></tr>
<tr><td>6.3</td><td>Low Temperature Exposure</td><td>Subject the filter to (–-40 ± 5) ℃ for 100 hours, filter shall be measured after being placed in natural conditions for 1 hour.</td><td>It shall fulfill the specifications in Table 1.</td></tr>
<tr><td>6.4</td><td>Thermal shock</td><td>After temperature cycling of blow table was performed 5 times, filter shall be measured after being placed in natural conditions for 1 hour.
<table>
<tr><th></th><th>Temperature</th><th>Time</th></tr>
<tr><td>1</td><td>(–40 ± 3) ℃</td><td>(30 ± 3) mins</td></tr>
<tr><td>2</td><td>Room temp.</td><td>5 S</td></tr>
<tr><td>3</td><td>(+85 ± 3) ℃</td><td>(30 ± 3) mins</td></tr>
<tr><td>4</td><td>Room temp.</td><td>5 S</td></tr>
</table></td><td>It shall fulfill the specifications in Table 1.</td></tr>
<tr><td>6.5</td><td>Vibration</td><td>Subject the filter to vibration for 2 hours 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 and then filter shall be measured.</td><td>It shall fulfill the specifications in Table 1.</td></tr>
<tr><td>6.6</td><td>Mechanical Shock test</td><td>Apply the half-sine shock pulses: 981m/s$^2$,6ms for 3 times in each direction of three mutually perpendicular planes.</td><td>No visible damage and it shall fulfill the specifications in Table 1.</td></tr>
<tr><td>6.7</td><td>Drop test</td><td>Filter shall be measured after 3 times random dropping from the height of 1m on concrete floor.</td><td>No visible damage and it shall fulfill the specifications in Table 1.</td></tr>
</table>

## 6 PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

(Continued from the preceding page)

| No | Item | Condition of Test | Performance Requirements |
|---|---|---|---|
| 6.8 | Resistance to Soldering Heat | Lead terminals are immersed up to 2 mm from filter's body in soldering bath of (+260±5)℃ for (10±1) seconds and then filter shall be measured after being placed in natural conditions for 1 hour. | It shall fulfill the specifications in Table 1. |
| 6.9 | Short time heat resistance | Store in (+160±2)℃ for 2 min and then filter shall be measured after being placed in natural conditions for 1 hour. | It shall fulfill the specifications in Table 1. |
| 6.10 | Solderability | Lead terminals are immersed up to 2mm from filter's body in soldering bath of (+250±5)℃ for (2±0.5 )seconds. | More than 95% of the terminal surface of the filter shall be covered with fresh solder. |
| 6.11<br><br>6.11.1<br><br>6.11.2 | Terminal Strength<br>Terminal Pulling<br>Terminal Bending | Force of 4.9N is applied to each lead in axial direction for (10±1) seconds.<br>When force of 4.9N is applied to each lead in axial direction, the lead shall folded up 90° from the axial direction and folded back to the axial direction. The speed of folding shall be each 3 seconds. | No visible damage and it shall fulfill the specifications in Table 1. |

Table 1

| Item | Specification after test |
|---|---|
| Center Frequency drift | ±30kHz max |
| Insertion Loss drift | ±2dB max. |
| 3dB Band Width drift | ±20kHz max. |
| 20dB Band Width drift | ±30kHz max. |
| Spurious Response | 25 dB min |

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

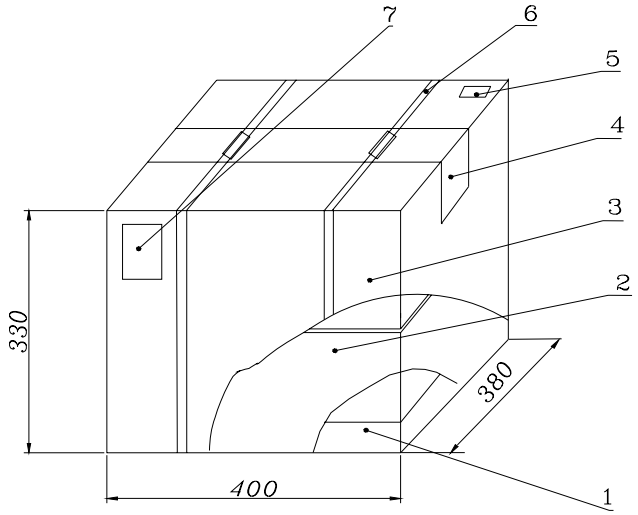
## 7 PACKAGE

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 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 | Inner Box | 40 | |
| 2 | Box | 2 | |
| 3 | Package | 1 | |
| 4 | Adhesive tape | 1.2m | |
| 5 | Label | 1 | |
| 6 | Belt | 2.9m | |
| 7 | Certificate of approval | 1 | |

7.2 Section of package

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

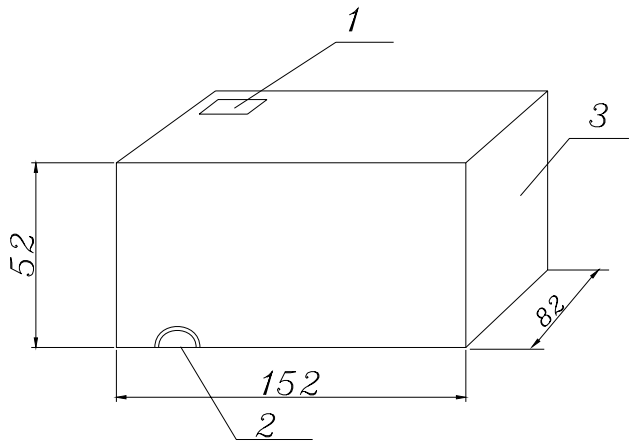
7.3Quantity of package

Per plastic bag 500 pieces

Per inner box 3 plastic bag

Per package 40 inner boxes（60000 pieces of piezoelectric ceramic part ）

7.4Inner box Dimensions




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.

## 8 OTHER

### 8.1 Caution of use

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

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

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

### 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.