

1. SCOPE

This specification shall cover the characteristics of the ceramic filter with 390KHz.

2. PART NO.: LT390AW

3. ELECTRICAL SPECIFICATIONS

3-1 Center frequency( $f_0$ )	.390KHz $\pm$ 2.0KHz max.
3-2 Band Width at 6dB	$\pm$ 25.0KHz min.(to 390KHz)
3-3 Band Width at 50dB	$\pm$ 50.0KHz max.(to 390KHz)
3-4 Stop Band Attenuation	45dB min. (at 390 $\pm$ 100KHz max.)
3-5 Ripple	2.0dB max.(at 390 $\pm$ 10.0KHz)
3-6 Insertion Loss	3.0dB max.(at the smallest loss)
3-7 Temperature Coefficient of Center Frequency	$\pm$ 50ppm/ $^{\circ}$ C max. (-20 $^{\circ}$ C to +80 $^{\circ}$ C)
3-8 Spurious Response	0.1-1.0MHz min. 25dB
3-9 Group Delay Time Deviation	max. 30 $\mu$ sec.(390 $\pm$ 4.0KHz)
3-10 Dielectric withstanding Voltage	100V.DC(1 minute)
3-11 Insulation Resistance(DC 10V)	min.100M $\Omega$
3-12 Input / Output Impedance	1.0K $\Omega$ $\pm$ 10%

Note 1) Center frequency shall be defined as the center of the band width 6dB.

Note 2) Temperature coefficient of center frequency shall be defined as the average of the center frequency shift throughout the specified temperature range.

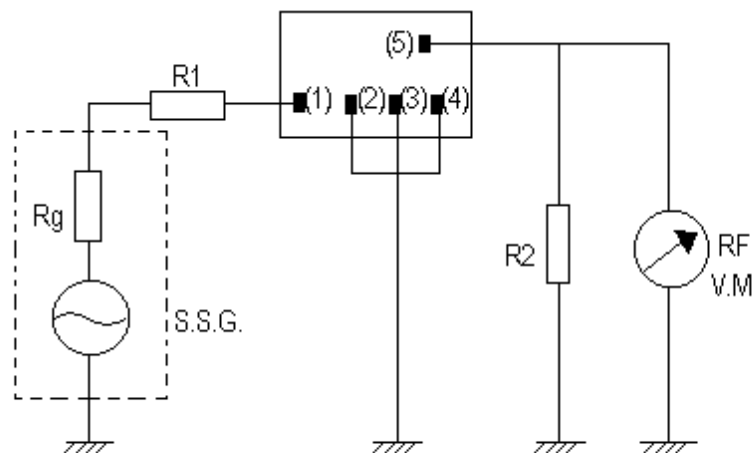
4. MEASUREMENT

4-1 Measuring Condition

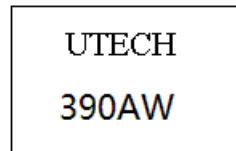
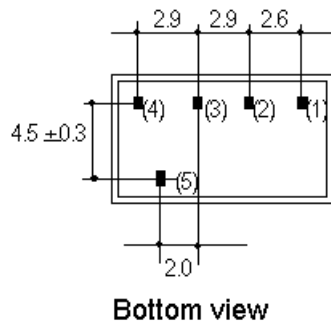
The reference temperature shall be 25 $\pm$ 2 $^{\circ}$ C. Unless the result is doubtful, the measurement shall be performed in the temperature range of 5 to 35 $^{\circ}$ C.

4-2 Measuring Circuit

$$R_g + R_1 = R_2 = \text{Input / Output Impedance}$$



(1) Input  
(2)(3)(4) Ground  
(5) Output

**5. DIMENSION (Unit : mm)**

**Logo and Marking  
(Top view)**

- (1) Input  
 (2)(3)(4) Ground  
 (5) Output

**\*Material Instruction**

	Components	Materials, Finish/Specifications
1	Terminal	Phosphor bronze/silver-plating
2	Insulation resin	Epoxy resin(black)
3	Case	PBT

**6. ENVIRONMENTAL CHARACTERISTICS**
**6-1 Humidity**

Keep the filter at  $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$  and 90 to 95% RH for minimum 8 hours. Then, release the filter into the room conditions for 1 hour prior to the measurement. It shall fulfill the electrical specifications in section 3.

**6-2 Vibration**

Subject the filter to the vibration for 1 hour each in X, Y and Z axes with the amplitude of 1.0mm at 10 to 55Hz. It shall fulfill the electrical specifications in section 3.

**6-3 Mechanical Shock**

Drop the filter randomly onto a concrete floor from the height of 30cm 3 times. It shall fulfill the electrical specifications in section 3.

**6-4 Solder Heat – Resistance**

The filters shall be assembled to the 1mm “through-hole” P.C. board and placed in a solder solution (SU 63% & PB 37%) at  $250 \pm 10^{\circ}\text{C}$  twice for duration of 3 seconds. After removal from the solder solution chamber, the filters may be cleaned with chloroform and left for more that 24 hours at the room temperature. It shall fulfill the electrical specifications in section 3.

**6-5 High Temperature Exposure**

Put subject filter to chamber at  $80 \pm 5^{\circ}\text{C}$  for  $96 \pm 4$  hours. Then, release the filter into the room condition for 1 hour prior to the measurement. It shall meet the electrical specifications in section 3.

**6-6 Low Temperature Exposure**

Put subject filter to  $-20 \pm 5^{\circ}\text{C}$  for  $96 \pm 4$  hours. Then, release the filter into

the room conditions for 1 hour prior to the measurement. It shall fulfill the electrical specifications in section 3.

#### 6-7 Temperature Cycling

Subject filter is put into low temperature of  $-40^{\circ}\text{C}$  for 30 minutes, followed by a high temperature of  $+85^{\circ}\text{C}$  for 30 minutes. Cycling shall be repeated 5 times with a time interval of 15 minutes under room conditions. Then, release the filter into the room conditions for 1 hour prior to the measurement. It shall fulfill the electrical specifications in section 3.

#### 6-8 Lead Fatigue

##### 6-8-1 Pulling Test

Weight 3Kg along to the direction of lead without a sudden shock. The filter shall show no evidence of damage and shall satisfy all the initial characteristics.

##### 6-8-2 Bending Test

Lead shall be subject to withstand against  $90^{\circ}$  bending in the direction of thickness. This operation shall be done towards both directions. The filter shall show no evidence of damage and shall satisfy all the initial electrical characteristics.