

Approved by:

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SPECIFICATION

PRODUCT: CERAMIC FILTER

MODEL: LTUC455B



SHOULDER ELECTRONICS LIMITE

1. THIS SPECIFICATION SHALL COVER THE CHARACTERISTICS OF SMD TYPE CERAMIC FILTER WITH 455KHz , INTENDED FOR USE IN TRANSCEIVERS, ETC.

2. PART NUMBER: **LTUC455B**

3. ELECTRICAL SPECIFICATIONS

- A. CENTRE FREQUENCY(f_0) : 455KHz \pm 2.0KHz. Max.
- B. BAND WIDTH AT 6dB : \pm 15.0KHzMin(TO 455KHz)
- C. BAND WIDTH AT 40dB : \pm 30 KHzMin(TO 455KHz)
- D. STOP BAND ATTENUATION : 27dBMin(AT $f_0 \pm$ 100KHz)
- E: RIPPLE : 2.0dBMax. (AT $f_0 \pm$ 12.0KHz)
- F: INSERTION LOSS : 4.0dBMax. (AT THE SMALLEST LOSS)
- G: TEMPERATURE COEFFICIENT OF CENTER FREQUENCY : \pm 5 PM/ MAX. (-20 TO +80)
- H: INPUT/OUTPUT IMPEDANCE : 1.5K

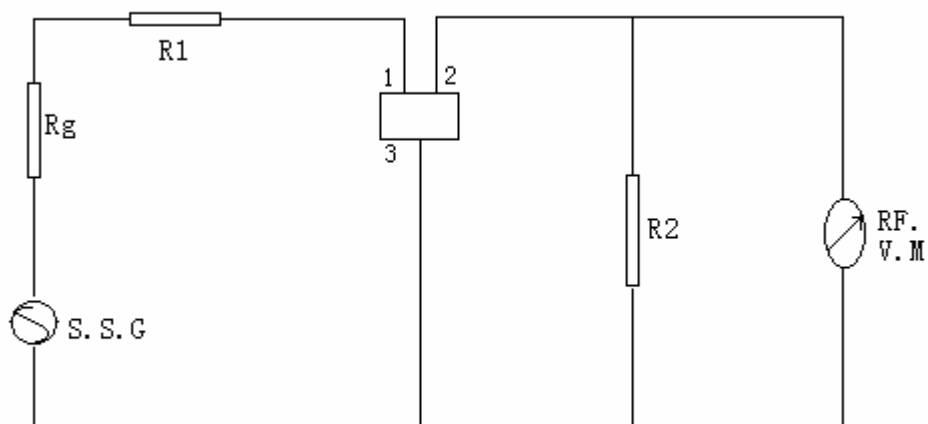
NOTE : A) CENTER FREQUENCY SHALL BE DEFINED AS THE CENTRAL VALUE OF THE BAND WITH AT 6dB
 B) TEMPERATURE COEFFICIENT OF CENTER FREQUENCY SHALL BE DEFINED AS THE AVERAGE OF THE CENTRAL FREQUENCY .

4. MEASUREMENT

A. ENVIRONMENTAL CONDITION

MEASUREMENT SHALL BE CARRIED OUT AT THE REFERENCE TEMPERATURE OF 25 \pm 2 . IT SHALL BE POSSIBLY DONE AT 5 TO 35 UNLESS IT IS QUESTIONABLE.

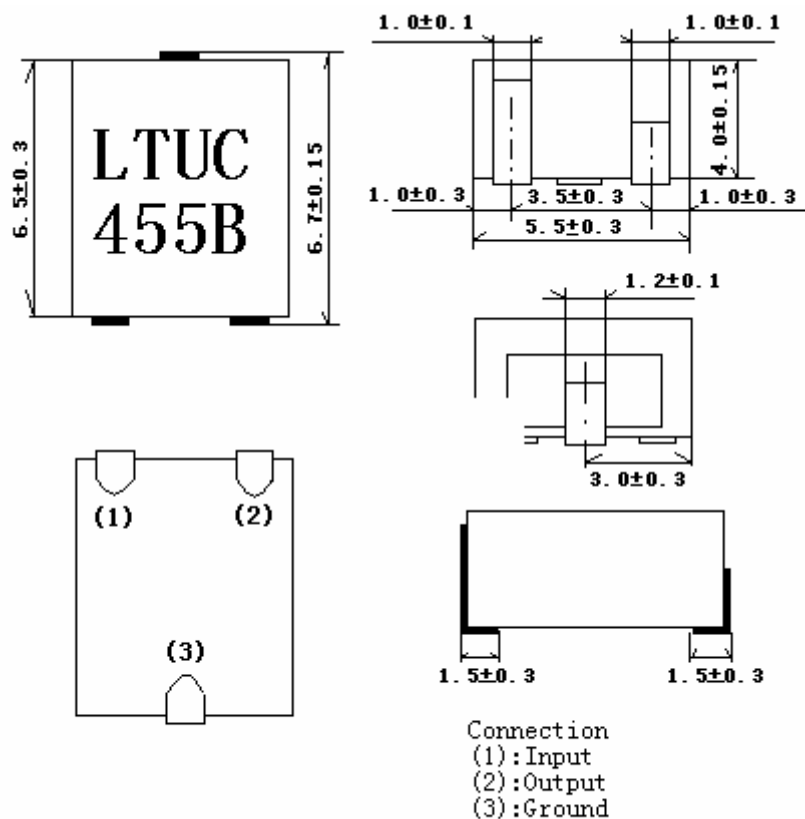
B. MEASURING CIRCUIT



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

- #S. S. G (STANDARD SIGNAL GENERATION)
- R. F. V. M. (RADIO FREQUENCY VOLTAGE METER)
- $R_g + R_1 = R_2 = 1.5K$
- $C \leq 50$ PF

5. DIMENSIONS(mm)



(in mm)

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6. ENVIRONMENTAL CHARACTERISTICS

6-1 HIGH TEMPERATURE EXPOSURE

SUBJECT THE FILTER TO +80 FOR 96 HOURS. THEN RELEASE THE FILTER INTO THE ROOM CONDITIONS FOR 1 TO 2 HOURS PRIOR TO THE MEASUREMENT. IT SHALL FULFILL THE SPECIFICATIONS IN TABLE 1.

6-2 MOISURE

KEEP THE FILTER AT 40 AND 95 RH FOR 96 HOURS. THEN RELEASE THE FILTER INTO THE ROOM CONDITIONS FOR 1 TO 2 HOURS PRIOR TO THE MEASUREMENT. IT SHALL FULFILL THE SPECIFICATIONS IN TABLES 1.

6-3 LOW TEMPERATURE EXPOSURE

SUBJECT THE FILTER TO -20 FOR 96 HOURS. THEN RELEASE THE FILTER INTO THE ROOM CONDITIONS FOR 1 TO 2 HOURS PRIOR TO THE MEASUREMENT. IT SHALL FULFILL THE SPECIFICATIONS IN TABLE 1.

6-4 TEMPERATURE CYCLING

SUBJECT THE FILTER TO A LOW TEMPERATURE OF -55 FOR 30 MINUTES. FOLLOWING BY A HIGH TEMPERATURE OF +85 FOR 30 MINUTES. THEN RELEASE THE FILTER INTO

THE ROOM CONDITIONS FOR 1 TO 2 HOURS PRIOR TO THE MESUREMENT. IT SHALL MEET THE SPECIFICATIONS IN TABLE 1.

6-5 RESISTANCE TO SOLDER HEAT

DIP THE FILTER TERMINALS NO CLOSER THAN 1.5mm INTO THE SOLDER BATH AT 270 ± 10 FOR 10 ± 1 SEC. THEN RELEASE THE FILTER INTO THE ROOM CONDITIONS FOR 1 TO 2 HOURS. THE FILTER SHALL MEET THE SPECIFICATIONS IN TABLE 1

6-6 MECHANICAL SHOCK

DROP THE FILTER RANDOMLY ONTO THE CONCRETE FLOOR FROM THE HEIGHT OF 30cm 3 TIMES. THE FILTER SHALL FUFILL THE SPECIFICATIONS IN TABLE 1.

6-7 VIBATION

SUBJECT THE FILTER TO THE VIBRATION FOR 1 HOUR EACH IN X,Y AND ZAXES WITH THE AMPLITUDE OF 1.5mm AT 10 TO 55 Hz. THE FILTER SHALL FULFILL THE SPECIFICATIONS IN TABLE 1.

6-8 LEAD FATIGUE

6-8-1 PULLING TEST

WEIGHT ALONG WITH THE DIRECTION OF LEAD WITHOUT AN SHOCK 3 KG. THE FILTER SHALL SATISFY ALL THE INITIALL CHARACTRISTICS.

6-8-2 BENDING TEST

LEAD SHALLBE SUBJECT TO WITHSTAND AGAINST 90 BENDING IN THE DERECTION OF THICKNESS. THIS OPERATION SHALL BE DONE TOWARD BOTH DIRECTION. THE FILTER SHALL SHOW NO EVIDENCE OF DAMAGE AND SHALL SATISFY ALL THE INITIAL ELECTRICAL CHARACTERISTICS.

TABLE 1

ITEM	SPECIFICATION
CENTRE FREQUENCY(f_0)	455 ± 2.0 Khz Max
BAND WIDTH(6dB)	± 15.0 KHz Min
SELECTIVITY(40dB)	± 30 Khz Max
STOP BAND ATTENUATION	27dBMin($f_0 \pm 100$ Khz)
RIPPLE	2.0dBMax
INSERTION LOSS	4.0dBMax