



SHOULDER

SHOULDER ELECTRONICS Co., LTD SPECIFICATION FOR APPROVAL

NO 编号 : _____

CUSTOMER 客 户 : _____

PRODUCT 产 品 : _____ CERAMIC FILTER

MODEL NO 型 号 : _____ LTUC455D

PREPARED 编 制 : _____ Fengyu CHECKED 审 核 : _____ York

APPROVED 批 准 : _____ Lijiating DATE 日 期 : _____ 2007-03-09

CUSTOMER 客户确认意见 :

CHECKED 审 核 :

APPROVED 批 准 :

DATE 日 期 :

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1. THIS SPECIFICATION SHALL COVER THE CHARACTERISTICS OF CERAMIC FILTER WITH 450KHz,INTENED FOR USE IN TRANSCEIVERS,ETC.

2. PART NUMBER : LTUC455D

3. ELECTRONICAL SPECIFICATIONS

- A. CENTRE FREQUENCY (f_o) : 455KHz \pm 1.5KHz. MAX.
- B. BAND WIDTH AT 6 dB : \pm 10.0 KHz MIN.(TO 455KHz)
- C. BAND WIDTH AT 40 dB : \pm 20.0 KHz MAX.(TO 455KHz)
- D. STOP BAND ATTENUATION : 27 dB MIN.(AT $f_o \pm 100$ KHz)
- E. RIPPLE : 2.0 dB MAX.
- F. INSERTION LOSS : 6.0 dB MAX (AT THE SMALLEST LOSS)
- G. TEMPRATURE COEFFICIENT OF CENTER FRENQUENCY : \pm 50PPM/ $^{\circ}$ C Max.(-20 TO +80 $^{\circ}$ C)
- H. INPUT/OUTPUT IMPEDANCE : 1.5K Ω

NOTE : A) CENTER FREQUENCY SHALL BE DEFIED AS THE CENTRAL VALUE OF THE BAND WITH AT 6 dB

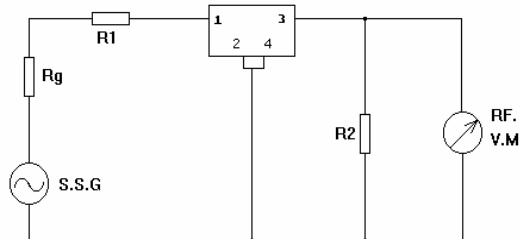
B) TEMPERATURE COEFFICIENT OF CENTER FREQUENCY SHALL BE DEFINED AS THE AVERAGE OF THE CENTRAL FREQUENCY.

4. MEASUREMENT

A. ENVIRONMENTAL CONDITION

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

B. MEASURING CIRCUIT



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

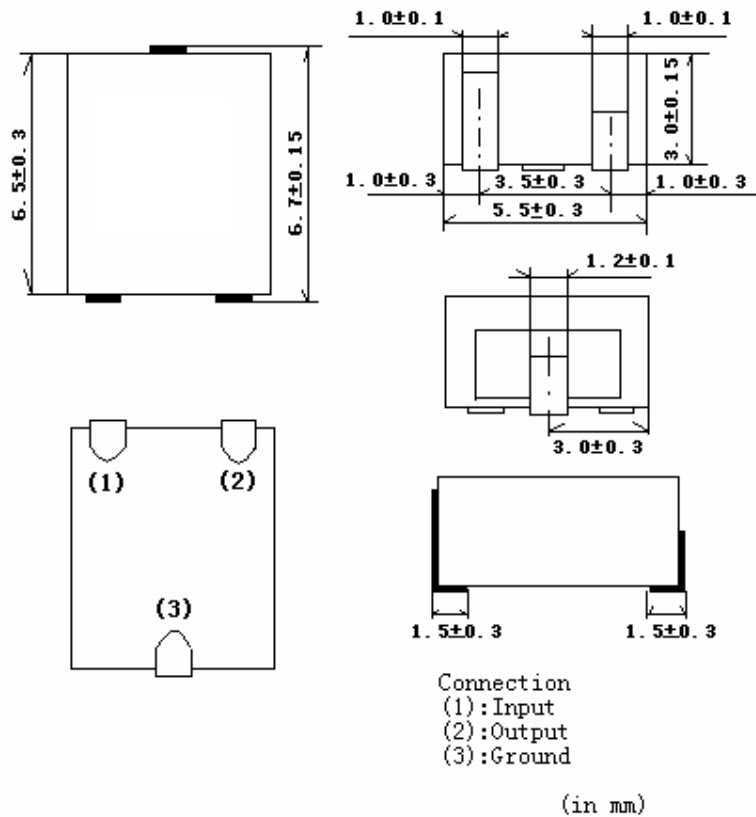
#S.S.G (STANDARD SIGNAL GENERATION)

R.F.V.M. (RADIO FREQUENCY VOLTAGE METER)

$R_g + R_1 = R_2 = 1.5 \text{ K}\Omega$

$C \leq 50 \text{ PF}$

5. DIMENSIONS(MM)



6. ENVIRONMENTAL CHARACTERISTICS

6-1 HIGH TEMPERATURE EXPOSURE

SUBJECT THE FILTER TO $+80^{\circ}\text{C}$ 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 MOISTURE

KEEP THE FILTER AT 40°C 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 TABLE 1.

6-3 LOW TEMPERATURE EXPOSURE

SUBJECT THE FILTER TO -20°C 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°C FOR 30 MINUTES. FOLLOWING BY A HIGH TEMPERATURE OF $+85^{\circ}\text{C}$ FOR 30 MINUTES. THEN RELEASE THE FILTER INTO THE ROOM CONDITIONS FOR 1 TO 2 HOURS PRIOR TO THE MEASUREMENT. 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°C ±10°C 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 FULFILL THE SPECIFICATIONS IN TABLE 1.

6-7 VIBRATION

SUBJECT THE FILTER TO THE VIBRATION FOR 1 HOUR EACH IN X,Y AND Z AXES WITH THE AMPLITUDE OF 1.5 mm 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 INITIAL CHARACTERISTICS.

6-8-2 BENDING TEST

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

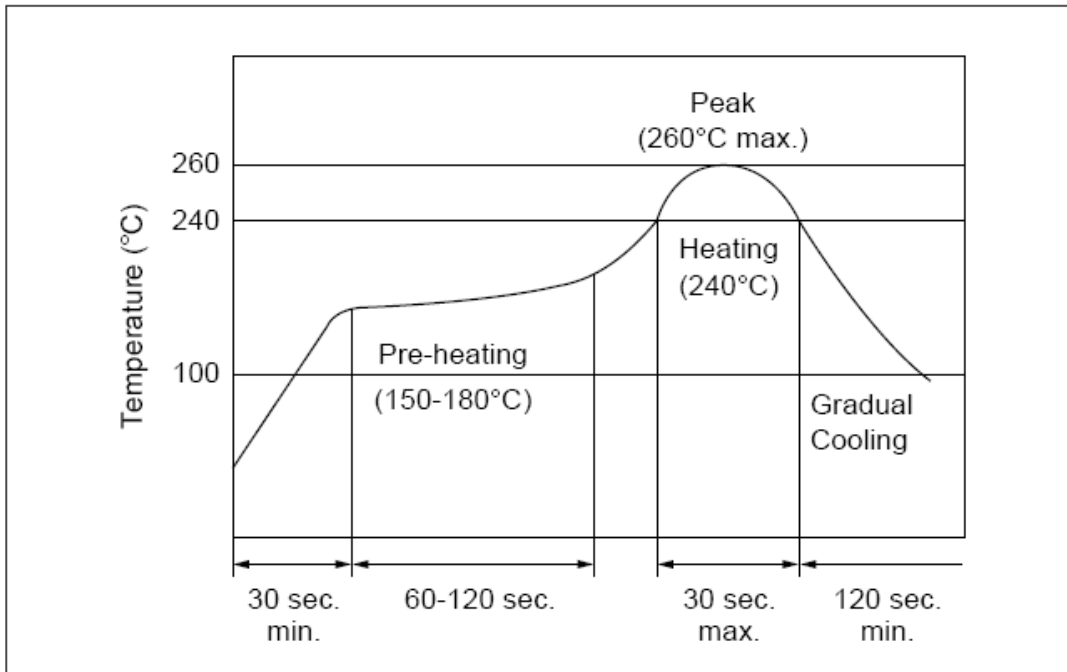
TABLE 1

ITEM	SPECIFICATION
CENTRE FREQUENCY(f_0)	455±1.5 KHz Max
BAND WIDTH(6 dB)	±10.0 KHz Min
SELECTIVITY(40dB)	±20.0 KHz Max
STOP BAND ATTENUATION	27 dB Min
RIPPLE	2.0 dB Max
INSERTION LOSS	6.0 dB Max

7 . STANDARD REFLOW SOLDERING CONDITIONS

7-1.REFLOW

FILTER IS SOLDERED TWICE WITHIN THE FOLLOWING TEMOERATURE CONDITIONS.

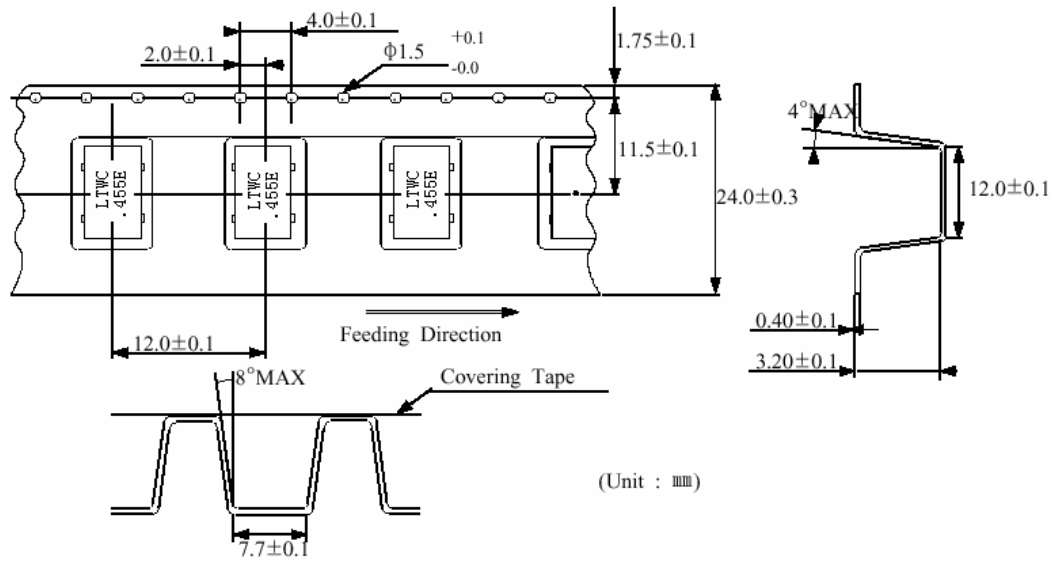


7-2.SOLDERING IRON

ELECTRODE IS DIRECTLY SOLDERED WITH THE TIP OF SOLDERING IRON
 AT $+350\pm 5^{\circ}\text{C}$
 FOR 3.0 ± 0.5 SECONDS.

8. DIMENSIONS OF CARRIER TAPE.

DIMENSIONS OF CARRIER TAPE



9. DIMENSIONS OF REEL

DIMENSIONS OF REEL

