

## SPECIFICATION OF CERAMIC DISCRIMINATOR

### 1. Application

This specification is applicable to ceramic discriminator CDB450C7 use for quadrature detection with ICMC3357.

### 2. Electrical Characteristics

- 2-1) Nominal center frequency : 450 KHz
- 2-2) Demodulated 3dB Bandwidth :  $\pm 4.0$  kHz. (from 450 kHz)
- 2-3) Demodulated Output :  $340 \pm 60$  mV. (at 450 kHz)
- 2-4) Demodulated Distortion Factor : 2.5% Max.
- 2-4) Withstand Voltage: D.C. 50V for 1 minute.

### 3. Test Method

#### Input signal condition

- Input level : 80dB  $\mu$
- Frequency Deviation :  $\pm 1.5$  kHz
- Modulation Frequency : 1.0 kHz

#### 3-1) Demodulated 3dB Bandwidth

Input the above signal and sweep the carrier around 450 kHz, and find Out the maximum audio output frequency. Then sweep the carrier frequency again and find two frequencies, which are observed  $-3$ dB attenuation points from the maximum point.

Higher frequency point is called (f1) and lower called (f2). (F1-450KHz) is defined as upper 3dB bandwidth and (450KHz-f2) defined as lower 3dB bandwidth.

#### 3-2) Demodulate Output

Demodulated output shall be measured when carrier frequency is adjusted to 450KHz.

#### 3-3) Demodulated Distortion Factor

Carrier frequency is adjusted to 450KHz.

And distortion shall be measured with 1 kHz modulation frequency.

### 4. Environmental Test

#### 4-1) Temperature Characteristics

At the temperature range of  $25 \pm 5^\circ\text{C}$ , the discriminators shall meet the electrical properties in item 2-1~2-4, and at  $-20 \sim +80^\circ\text{C}$  the Anti-resonant frequency shall not vary more than  $\pm 2.0$  kHz.

#### 4-2) Vibration

The discriminators shall suffer no mechanical damage and meet the 2-1~2-4 electrical Characteristics after being vibrated with a sine wave motion having an amplitude of 1.0 mm from 10 to 55KHz per 1 minute, applied for 30 minutes in three different directions (x,y,z).

#### 4-3) Humidity

The discriminators shall be placed in a humidity chamber at 90~95% relative humidity and  $40 \sim 45^\circ\text{C}$  for a period of minimum 8 hours. The discriminators shall be left for the period of more than 24 hours at the room

temperature after its removal from the humidity chamber. The discriminators shall meet the

2-1~2-4 electrical characteristics and the appearance of discriminators is to be normal.

4-4) Dropped Shock

The discriminators shall suffer no mechanical damage and meet the 2-1~2-4 electrical characteristics outlined on this specification after being dropped 3 times to concrete floor from the 30 cm height.

4-5) Solder ability

The terminal surface shall be covered over 3/4 by the solder after dipped the leads into  $230 \pm 5^\circ\text{C}$  solder pot containing (Sn 63% Pb 37%) molten alloy for  $3 \pm 1$  seconds.

4-6) Soldering Heat-Resistance

The discriminators shall be assembled to the 1 mm “through-hole” P.C. bored and placed in solder solution (Sn63% Pb37%) at  $250 \pm 10^\circ\text{C}$  for duration of  $3 \pm 1$  seconds. After removal from the solder solution chamber, the discriminators may be cleaned with chloroethene and left for more then 24 hours at the room temperature. The discriminators shall meet the 2-1~2-4 electrical characteristics are to be normal.

4-7) Lead Strength

The discriminators shall suffer no mechanical damage and meet the 2-1~2-4 electrical characteristics outlined on this specification after static load of 1.0 kg for 1 minute is applied in the direction of the insertion side.

4-8) Temperature

The discriminators shall be held at each cycle consist of three temperature levels( $-20,+25,+80^\circ\text{C}$ ) for a period of each 30 minute and repeated 3 cycles. After the test the discriminators may be left for more than 24 hours at the room temperature. The discriminators shall meet the 2-1~2-4 electrical characteristics outlined on this specification and the appearance of discriminators is to be normal.

5. Appearance

5-1) Appearance and dimension may conform to Fig.1

5-2) Identification

The following shall be permanently and legibly marked.

6. Dimensions (unit mm)

