SHOULDER

SPEC NO :

SPECIFICATION

CUSTOMER	
PRODUCT	CERAMIC DISCRIMINATOR
MODEL NO	CDBM455C3
PREPARED	LEO CHECKED YORK
APPROVED	LIUMING DATE 2012-12-13

CUSTOMER RECEIVED:		
CHECKED	APPROVED	DATE

Shoulder Electronics Limited

History Record

Date	Spec No	Part No	Customer No	Modify Content	Remark

1. APPLICATION

This specification is applied to ceramic discriminator : CDBM455C3 used for quadrature detection with IC : SONY CXA1184.

2. SPECIFICATION No.: QJ/A5•15•0605

Anti-Resonant Frequency (Fa) : 455KHz±1.5KHz

ΔF(Fa-Fr) : 46.0KHz±5.0KHz max.

Fr : Resonant Frequency

Resonant Resistance : 70Ω max.

Capacitance(within 1 KHz) : 550PF±20%

Test instrument of impedance will be impedance analyzer type no.4192A from YHP.

3. DIMENSIONS : (mm)

Material List

Case	Polybutylen terephtalate
Terminal	Phosphor bronze Ag Clad
Base Sealing	Epoxy resin

4. MAXIMUM RATINGS

4.1 Withstanding Voltage (Between each terminal) D.C. 5OV. 1 minute

4.2 Insulation Resistance (Between each terminal) 100 MΩ min. at D.C. 100V

4.3 Input signal level 5dB (50Ω Termination)

4.4 Operating Temperature Range - 20℃ to + 80 ℃

4.5 Storage Temperature Range 25 ±5℃

5. ELECTRICAL CHARACTERISTICS (0℃ to + 40 ℃)

	Item	Requirements
5-1	Receiver Audio 3dB Bandwidth (from 455KHz)	±4.0 KHz min.
5-2	Receiver Audio Output Voltage (at 455KHz)	40 ± 20 mV
5-3	Distortion (at 455 KHz)	3.0% max.
5-4	Withstanding Voltage	50V D.C. for 1 minute

5-5 Test Method

Input signal Condition Input level : 80dB

Frequency Deviation : ±4.0KHz

Modulation Frequency : 1 KHz

1) Receiver Audio 3dB Bandwidth Input the above signal and sweep the carrier frequency around 455 KHz and find out the maximum audio output frequency. Then sweep the carrier frequency again and find two frequencies which are observed -3dB attenuation points from the maximum point .

Higher frequency point is called (f1) and lower called (f2), (f1-455KHz)is defined as upper 3dB bandwidth and (455Khz-f2) defined as lower 3 dB bandwidth.

2) Receiver Audio Output Voltage — Receiver audio output voltage shall be measured when carrier frequency is adjusted to 455KHz.

3) Distortion — Carrier frequency is adjusted to 455Khz. And then ,distortion shall be measured with 1 kHz modulation frequency.

6. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

	Test Item	Condition of Test	Requirements
6-1	Lead Strength Lead Pulling Lead Bending	After force 1.0Kg is applied to each lead in axial direction. filter shall be measured. When force of 0.5Kg is applied to each lead in axial direction the lead shall be folded up to 90 from the axial direction and folded back to the axial direction .	No mechanical damage and the measured values shall meet item 5.
6-2	Vibration	Filter shall be measured after being applied vibration of amplitude of 1.5mm with 600 to 3,300 r.p.m. band of vibration frequency to each of 3 perpendicular directions for 2 hour .	The measured values shall meet Table 1.
6-3	Random Drop	Filter shall be measured after 3 times random dropping from the height of 30cm on concrete floor	
6-4	Temperature Characteristics	Filter shall be measured within -20℃ to +80℃ temperature range.	
6-5	Humidity	Filter shall be measured after being placed in a chamber with 90 to 95% R. H. at 40±2℃ for 100 hours and then being placed in natural condition for 2 hour.	
6-6	Resistance to Soldering Heat	Lead terminals are immersed up to 1.5mm from filter's body in soldering bath of 260±10℃ for 5±0.5 seconds and then filter shall be measured after being placed in natural condition for 2 hour.	
6-7	Life Test High Temperature	Filter shall be measured after being placed in chamber with 80℃ for 100 hours and then being placed in natural condition for 2 hour.	
6-8	Life Test Low	Filter shall be measured after being placed in a chamber with -20℃ for 100 hours and then	

	Temperature	being placed in natural condition for 2 hours.	
6-9	Thermal Shock	After temperature cycling of -20℃ 30 minutes to +80℃ 30 minutes was performed 5 times. Filter shall be returned to room temperature. And filter shall be measured after being placed in natural condition for 2 hours.	

Item	Requirements
Receiver Audio 3dB Bandwidth (from 455KHz)	±3.0 KHz min.
Receiver Audio Output Voltage (at 455KHz)	40±25 mV
Distortion (at 455KHz)	4.0 % max.
Withstanding Voltage	50V D. C. for 1 minute.

Table 1.