

**DETAILED SPECIFICATIONS FOR A 455 KHZ CERAMIC DISCRIMINATOR****1.0 PURPOSE**

This specification show cover the characteristics of the ceramic discriminator with 455 KHz used in various of communication equipment.

**2.0 MODEL NAME**

- 2.1 Part No. : JTBM455C34  
 2.2 Specification No. : 2.879.031  
 2.3 Customer's Part No. :  
 2.4 Customer's Specification No. :

**3.0 ABSOLUTE MAXIMUM RATINGS**

"Absolute Maximum Ratings" are those values beyond which the life of the device cannot be guaranteed. They are not meant to imply that the device can or should be operated at these limited.

No.	Parameter	Rating	Unit
3.1	Withstanding Voltage (5 seconds max)	50	VDC
3.2	Ambient Operating Temperature Range	-20 ~ +80	°C
3.3	Lead Temperature for Soldering 1/16" from Body for 10sec	260	°C
3.4	Storage Temperature Range	-40 ~ +85	°C
3.5	Maximum D.C. Voltage	6	VDC
3.6	Maximum Input Voltage	15	Vp-p
3.7	Minimum Isolation Resistance at 10V DC	100	MΩ

**4.0 ELECTRICAL CHARACTERISTICS Ta = 25°C**

No.	Parameter	Minimum	Typical	Maximum	Unit
4.1	Center Frequency	NS	455.0	NS	KHz
4.2	Recovered Audio 3dB Bandwidth	±4.0	-	-	KHz
4.3	Recovered Audio Output Voltage	45	-	85	mV
4.4	Distortion Faction	-	-	2.5	%
4.5	Measurement Conditions				
	Input Level	-	80	-	dBμ
	Frequency Deflection	-	±1.5	-	KHz
	Modulation Frequency	-	1.0	-	KHz

NS = Not Specified

**5.0 TEST CIRCUIT**

- 5.1 Measurement Condition:  
 The reference temperature shall be 25°C ± 1°C. The measurement shall be performed at the temperature range of 5°C to 35°C unless otherwise the result is doubtful.
- 5.2 Test Circuit and Equipment:  
 Oscillating frequency shall be measured by the standard test circuit as shown in Figure 2. Resonant impedance shall be measured by HP E5100A Network Analyzer.

## 6.0 PHYSICAL CHARACTERISTICS

No.	Item	Condition of Test	Requirements
6.1	Random Drop	The discriminator shall be measured after 3 times random drops from the height of 1.0M on concrete floor.	No visible damage and the measured values shall meet Table 1.
6.2	Vibration	The discriminator shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55Hz bands of vibration frequency to each of 3 perpendicular directions for 1 hour.	The measured values shall meet Table 1.
6.3	Resistance to Soldering Heat	Lead terminals are immersed up to 1.5mm from the discriminator's body in solder bath of $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$ for $3 \pm 0.5$ seconds or $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $10 \pm 1$ seconds, and then the discriminator shall be measured after being placed in natural condition for 1 hour.	The measured values shall meet Table 1.
6.4	Solderability	Lead terminals are immersed in resin for 5 seconds and then immersed in soldering bath of $250^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $3 \pm 0.5$ seconds.	95% min. lead terminals shall be wet with solder.
6.5	Terminal Strength	1. After force 10 seconds of 1.0Kg is applied to each terminal in axial direction, the discriminator shall be measured. 2. After lead terminals are fixed at 2mm from the discriminator's body, they shall be forced up to $90^{\circ}$ from their axial direction and folded back to $-90^{\circ}$ , then folded back to their axial direction. The speed of folding shall be each 3 seconds.	No visible damage and the measured values shall meet Table 1.
6.6	Washability	See Table 2.	No visible damage and the measured values shall meet Table 1.

## 7.0 ENVIRONMENTAL CHARACTERISTICS

No.	Item	Condition of Test	Requirements
7.1	High Temperature	After being placed in a chamber with $+80^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $96 \pm 4$ hours and then being placed in natural condition for 1 hour. The discriminator shall be measured.	The measured values shall meet Table 1.
7.2	Low Temperature	After being placed in a chamber with $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $96 \pm 4$ hours and then being placed in natural condition for 1 hour. The discriminator shall be measured.	The measured values shall meet Table 1.
7.3	Humidity	After being placed in a chamber with 90 to 95% R.H. at $+40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $96 \pm 4$ hours and then being placed in natural condition for 1 hour. The discriminator shall be measured.	The measured values shall meet Table 1.
7.4	Heat Shock	After being kept at room temperature, the discriminator shall be placed at temperature of $-20^{\circ}\text{C}$ for 30 minutes, then the discriminator shall be immediately placed at temperature of $80^{\circ}\text{C}$ , after 30 minutes at temperature of $80^{\circ}\text{C}$ , the discriminator shall be returned to $-20^{\circ}\text{C}$ again. After 5 times above cycles, the discriminator shall be returned to room temperature, after 1 hour in natural condition, the discriminator shall be measured.	The measured values shall meet Table 1.

TABLE 1  
MEASURING REQUIREMENTS

Measurements	Requirements	Unit
Recovered Audio 3dB Bandwidth	$\pm 3.0$ min	KHz
Recovered Audio Output Voltage	$65 \pm 25$	mV
Distortion Faction	4.0 max	%

TABLE 2  
WASHABILITY

Item	Condition	Cleaning Solvent
Ultrasonic Wash	1 minute max. in above solvent at 60°C max. (Frequency = 28KHz, Output = 20W/L)	1. Trichloroethane 2. Isopropanol 3. Tap Water Demineralizer Water
Immersion Wash	5 minutes max. in above solvent at 60°C max.	
Shower or Rinse Wash	5 minutes max. in above solvent at 60°C max.	
Drying	5 minutes max. by air blow at 80°C max.	

Notice:

1. In case of immersing in cleaning solvent, the temperature of device must be returned to room temperature after soldering.
2. Total washing time should be within 10 minutes.
3. Please insure the device is thoroughly evaluated in your application circuit.
4. The device may be damaged if it's washed with chorine, petroleum or alkali cleaning solvent.

## 8.0 OUTLINE DIMENSIONS

8.1 Appearance: No visible damage and dirt.

8.2 Dimensions: See Figure 1

8.3 Construction: Leads are soldered on electrode and body is molded by resin.

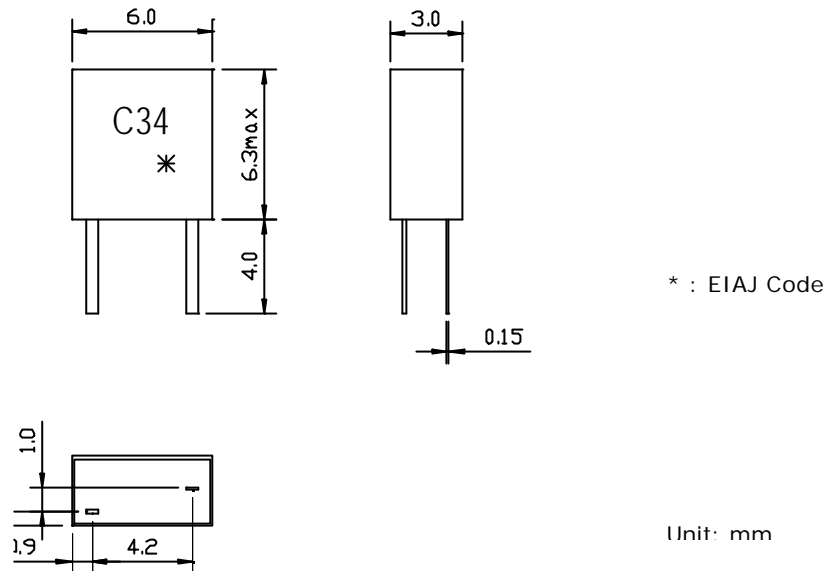
## 9.0 REVIEW OF SPECIFICATIONS

When something gets doubtful with this specification, we shall jointly work to get an agreement.

## APPENDIX: EIAJ CODE

Year\Month	1	2	3	4	5	6	7	8	9	10	11	12
2001	A	B	C	D	E	F	G	H	J	K	L	M
2002	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003	a	b	c	d	e	f	g	h	j	k	l	m
2004	n	p	q	r	s	t	u	v	w	x	y	z

**FIGURE 1**  
**OUTLINE DIMENSIONS**



**FIGURE 2**  
**TEST CIRCUIT**

