

# **MOBICON**

## **Electronic Components**

### **PRODUCT SPECIFICATION**

### **MEC**

### **Ceramic Resonator**

#### **SPECIFICATION**

This specifications is subject to change without notice.

<b>MOBICON HOLDINGS LTD.</b>		
<b>Prepared By</b>	<b>Sign.</b>	<b>Approved By</b>
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# MIEC

**PART NO. :**

**ZTB600P**

## ELECTRICAL CHARACTERISTICS

### 1. SCOPE

This specification shall cover the characteristics of the ceramic resonator with 600KHz for the clock oscillation of microprocessor etc.

2. SPECIFICATION NO :

3. FACTORY NO : ZTB600P

### 4. ELECTRICAL SPECIFICATIONS

No	Item	Requirements
4.1	Resonant Frequency	600KHz $\pm$ 2KHz
4.2	Resonant Impedance (Ro)	20 max.
4.3	Temperature Coefficient of Oscillation Frequency	$\pm$ 0.3% max (-20 to +80 )
4.4	Withstanding Voltage	100 VDC 5 sec. max
4.5	Rating Voltage (1)D.C. Voltage (2)A.C. Voltage	6 V. D.C. 15Vpp
4.6	Insulation Resistance	100M min. (at 10 VDC)
4.7	Operation Temperature	-20 to +80
4.8	Storage Temperature	-30 to +80
4.9	Aging Rate (Fosc)	$\pm$ 0.3% max (10 year)

### 5. MEASUREMENT

#### 5.1 Measurement Condition

The reference temperature shall be 25  $\pm$  2 . The measurement shall be performed at the temperature range of 5 to 35 unless otherwise the result is doubtful.

#### 5.2 Measurement Circuit and Equipment

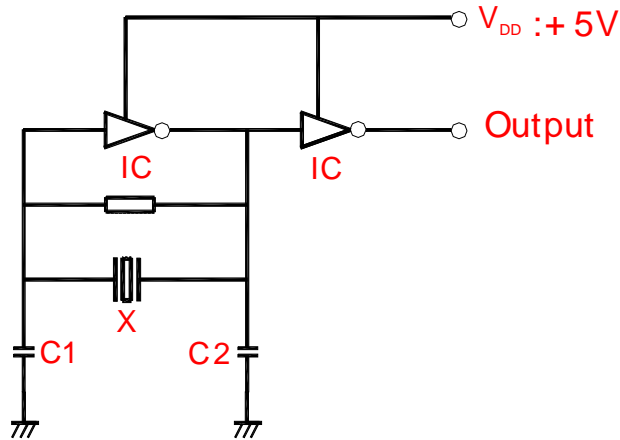
Oscillating frequency shall be measured by the standard test circuit as shown in Fig.1

Resonant impedance shall be measured by HP8751A Network Analyzer.

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## REVIEW OF SPECIFICATIONS

### 5.2 TEST CIRCUIT

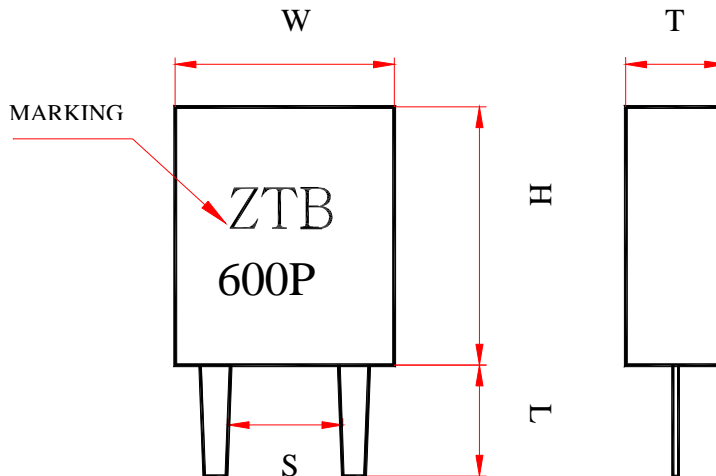


IC:1/6CD4069UBEX2  
 X: Ceramic Resonator  
 C1C2: Load Capacitance

Part Number	Load Capacitance(Pf)	
	C1	C2
ZTB190—249D	330	470
ZTB250—374D	220	470
ZTB375—429P	120	470
<b>ZTB430—509E</b>	<b>100</b>	<b>100</b>
ZTB510—699P	100	100
ZTB700—1250J	100	100

Fig 1

### 6. Dimension



Frequency Range (KHz)	Width W(mm)	Thickness T(mm)	Height H(mm)	Lead Space S(mm)	Lead Length L(mm)
500	7.0	3.5	9.0	5.0	4.0(6.0)

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## REVIEW OF SPECIFICATIONS

### 7. PHYSENVIRONMENTAL CHARACTERISTICS

No	Item	Condition of Test	Performance Requirements
7.1	Humidity	Keep the resonator at $40 \pm 2$ and 90-95% RH for 96 hours. Then release the resonator into the room condition for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
7.2	High Temperature Exposure	Subject the resonator to $80 \pm 5$ for 96 hours. Then release the resonator into the room conditions for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
7.3	Low Temperature	Subject the resonator to $-20 \pm 5$ for 96 hours. Then release the resonator into the room conditions for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
7.4	Temperature Cycling	Subject the resonator to -20 for 30 min. followed by a high temperature of 80 for 30 min. Cycling shall be repeated 5 times with a transfer time of 15 min. at the room condition. Then release the resonator into the room temperature for 1 hour prior to the measurement.	It shall fulfill the specifications in Table 1.
7.5	Vibration	Subject the resonator to vibration for 2 hours each in x.y and z axis with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10—55Hz	It shall fulfill the specifications in Table 1.
7.6	Mechanical Shock	Drop the resonator randomly onto a concrete floor from the height of 70 cm 3 times.	It shall fulfill the specifications in Table 1.
7.7	Resistance to Solder Heat	Dip the resonator terminals no closer than 2 mm into the solder bath at $260 \pm 10$ for $3 \pm 0.5$ sec.  The flammability rating for the plastic molding is 10 sec. max. at 200 --210	It shall fulfill the specifications in Table 1.
7.8	Solderability	Dip the resonator terminals no closer than 2 mm into the solder bath at $235 \pm 5$ for $3 \pm 0.5$ sec.	More than 95% of the terminal surface of the resonator shall be covered with fresh solder.

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## REVIEW OF SPECIFICATIONS

### 7. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS (Continued from the preceding page)

No	Item	Condition of Test	Performance Requirements
7.9	(1) Pulling Test	Weight along with the direction of terminals without any shock 1kg for 10 sec.	The resonator shall show no evidence of damage and shall fulfill all the initial electric characteristics.
	(2) Bending Test	Lead shall be subject to withstand against 90 degree bending at its stem. This operation shall be done towards both direction.	

TABLE 1

Item	Specification
Oscillation Frequency Change	F/Fosc 0.3% max

### 7. REVIEW OF SPECIFICATIONS

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