Ceramic Resonator

DIP type, ZTB series

ZTB Series

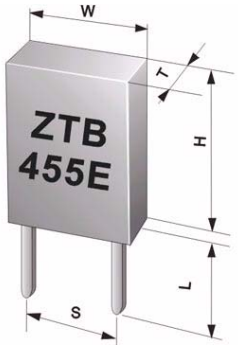
& Feature:

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

& Electrical Specifications

Part Number	Frequency Accuracy	Resonant Impedance(Ω)	Stability in Temperature (-20~+80℃)(%)	Aging For Ten Years (%)	Load Capacitance(pF)	
					C1	C2
ZTB190~249	±1kHz	≤20	±0.3	±0.3	330	470
ZTB250~374	±1kHz	≤20	±0.3	±0.3	220	470
ZTB375~429	±2kHz	≤20	±0.3	±0.3	120	470
ZTB430~509	±2kHz	≤20	±0.3	±0.3	100	100
ZTB510~699	±2kHz	≤30	±0.3	±0.3	100	100
ZTB700~999	±0.5%	≤70	±0.3	±0.3	100	100
ZTB1000~1250	±0.5%	≤100	±0.3	±0.3	100	100

& Dimension:



Frequency Range(kHz)	Width(mm)	Thickness(mm)	Height(mm)	Lead Space(mm)	Lead Length(mm)
190~249	13.5	3.8	14.7	10.0	8.0
250~374	11.0	3.8	12.2	7.7	7.0
375~400	7.9	3.6	9.3	5.0	7.7
401~699	7.0	3.5	9.0	5.0	4.0(6.0)
700~1250	5.2	2.8	6.8	2.5	3.5(5.0)
1000J	5.1	2.3	6.3	2.5	4.0

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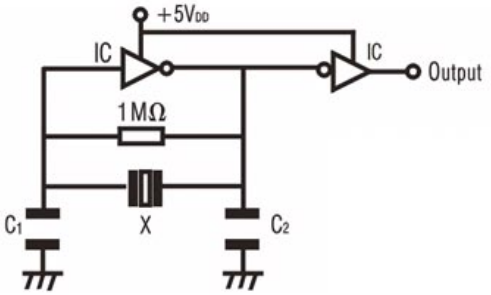
&Test Circuit



IC: 1/6TC4069UBP
X: Ceramic Resonator
C1C2: Load capacitance

&Physical and Environmental Characteristics

No	Item	Condition of Test	Performance Requirements
7.1	Humidity	Keep the resonator at 40 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 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 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 teh amplitude of 1.5mm,the frequency shall be varied uniformly between teh limits of 10--5Hz	It shall fulfill the specifications in Table 1.
7.6	Mechanical Shock	Drop the resonator randomly onto a concrete floor from the height of 70cm 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 10℃ for 3 0.5 sec.	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 5℃ for 3 0.5 sec.	More than 95% of the terminal surface of the resonator shall be covered with fresh solder.
7.9	Lead Fatigue (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.	