

REV.	ECO	REVISIONS		DATE	APPROVED
		DESCRIPTION			
-		Initial Release		10/9/2003	RW

## SPECIFICATIONS

Part Number (XX.X denotes freq. in MHz)	Frequency Tolerance at 25°C	Frequency Stability at -20°C to +80°C	Aging in 10 years	Operating temperature	Res. Imp. (Ω) max.
<b>AWSZT-XX.XMWS</b> 8.00 MHz - 13.0 MHz	± 0.5%	± 0.3%	± 0.3%	-20° to +80°C	25
<b>AWSZT-XX.XMWD</b> 8.00 MHz - 13.0 MHz	± 0.5%	± 0.3% ± 0.5% (-40C to 85C)	± 0.3%	-40° to +85°C	25
<b>AWSZT-XX.XMWA</b> 8.00 MHz - 13.0 MHz	± 0.5%	± 0.3% ± 0.7% (-40C to 125C)	± 0.3%	-40° to +125°C	25

Storage temperature: -40°C to +125°C  
Insulation resistance: 500Mohms min. at 10Vdc

### OPTIONS AND PART IDENTIFICATION (Left blank if standard)

**AWSZT - XX.XXMWY** - Packaging

XX.XX: Frequency in MHz

Y: S, D, or A

Packaging option:

**T for Tape and Reel (4,000pcs/reel)**

### ENVIRONMENTAL AND MECHANICAL CHARACTERISTICS

Temperature Cycling: Subject the resonator to -40°C±2°C for 30 min. followed by +85°C±2°C.Cycling for 5 times.

1 hour stabilization at room temp prior to measurement.

High Temperature: Subject the resonator at 85°C ± 2 °C for 100 hours, release to room temp. 1 hour prior to measurement.

Low Temperature: Subject the resonator at -40°C for 100 hours, release to room temp. 1 hour prior to measurement.

Humidity: Subject the resonator to 60 ± 2°C at 90-95%RH for 100hours, release the resonator into the room condition for 1 hour prior to measurement.

Drop test: Drop onto concrete floor from the height of 1 meter 3 times.No visible damage.

Solder Heat Resistance: Reflow:Preheat 140°C ~160°C for 1 min.max.temp. 230°C ± 5°C and

above 200°C for 20s max. then in natural condition for 1 hour before measurement.

Washability: Ultrasonic wash 1 minute at 60°C in TCE,IPA and DI water (Frequency 28kHz,Output 20W/L)

Vibration: Apply the resonator to vibration for 2 hours in X,Y, Z axes with 1.5 mm amplitude.Vibration should

be varied uniformly between the limits,returned to 10Hz in 1 min.

Terminal strength:1kg pulling force along direction of leads for 10±1s, shall be subjected to

withstand against 90° bending in the direction of thickness.No visible damage.

Solderability: Dip the leads into the solution of 25% rosin and etchl alcohol then into solder bath

(60/40 Sn/Pb) for 2 ± 0.5 s at 235°C.Then release the resonator into the room condition for 1 hour

prior to measurement. 95% min. lead terminals shall be wet with solder.

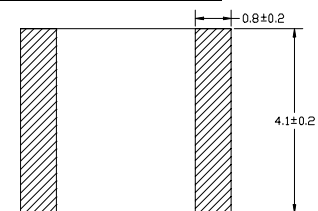
PCB bend strength: After soldered on the PCB, press it by up to 1mm for 5s, 5times repeatedly

Table 1

ITEM	Specification
Oscillation Frequency Change	± 0.3 % max.
Capacitance Change	± 20% max.

All specifications subject to change without notice.

## OUTLINE DRAWING



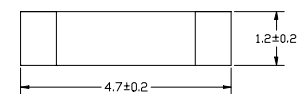
MARKING:

**X.XXZY**

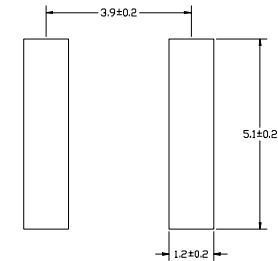
X.XX Frequency

Z month code

Y year code

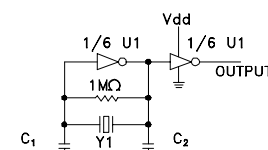


### Recommended Land Pattern



Dimensions: mm

### TEST CIRCUIT



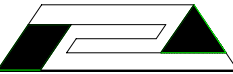
U1: 74HCU04

Y1: RESONATOR

C<sub>1</sub> C<sub>2</sub>: 15pF ± 20% (20M ~ 25.99M)

10pF ± 20% (26M ~ 50M)

TOLERANCES: UNLESS OTHERWISE SPECIFIED: .XXX: ± 0.005 .XX: ± 0.01 .X: ± 0.10		ANGLE: ± 1°
APPROVALS	DATE	
DRAWN	LD	10/9/2003
PROD. MGR.	RD	10/9/2003
ENGR. MGR.	RD	10/9/2003
QUALITY	RW	10/9/2003
PURCH.	CB	10/9/2003

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		<b>AWSZT[ ] MW SERIES</b>	
TITLE		HIGH FREQUENCY MHz SMD WASHABLE, CERAMIC RESONATORS	
DWG. NO.	REV.	SIZE	SHEET
<b>451616</b>	-	A	1 of 1