

MV-TS651-2016V is a Temperature Compensated Crystal Oscillator (TCXO) . This TCXO is analog temperature compensated, Clipped Sine Wave output device and comes in a hermetic ceramic 2.0x1.6mm package. This device contains an internal voltage regulator resulting in excellent power supply rejection ratio.

The device is qualified to meet the JEDEC standard for Pb-Free assembly and compliant to the RoHS directive.

Electrical Performance

Parameter	Min	Typ	Max	Units
General				
Output Frequency	13		52	MHz
Operating Temperature	-10/+70 -20/+70 -40/+85 -30/+85			°C
Frequency Stability				
Stability Over Temperature	±2.0 ±1.5 ±1.0 ±0.5			ppm
Initial Accuracy (25°C ±2°C)				ppm
Power Supply Stability (±5% Change)				ppm
Load Stability (±10% Change)				ppm
Aging (1st year)				ppm/year
Start Up Time				ms
Package Size	2.0 x 1.6 x 0.85			mm
Supply				
Supply Voltage (Vdd)	3.3 2.8 1.8			V
Supply Current				mA
Tuning				
Tuning (Pull) Range	±5 ±8 ±10 ±12 ±15			ppm
Tuning Slope	Positive			
Control Voltage to reach Pull Range	0.9±0.6 (@1.8), 1.4±1 (@2.8), 1.65±1 (@3.3)			V
Control Voltage Impedance	500			KΩ
Output				
Output Signal	Clipped Sine Wave			
Output Level	0.8			V
Output Load	10KΩ 10pF			
Duty Cycle	45			%
Phase Noise & Jitter				
Phase Noise: (32 MHz)				
1 Hz offset				-58
10 Hz offset				-86
100 Hz offset				-110
1kHz offset				-135
10kHz offset				-143
100kHz offset				-152
1MHz offset				-153
Jitter				
RMS Jitter: (12kHz - 20MHz) - 32 MHz				0.15
				ps

Notes:

- 1 Rise and Fall times measured from 10% to 90% of a full output swing

Maximum Ratings

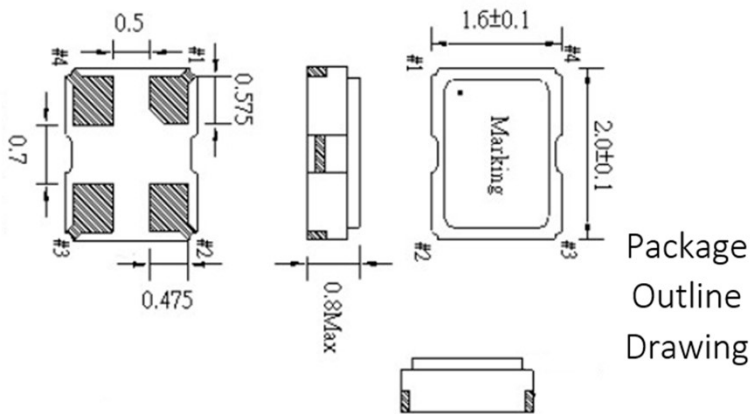
Storage Temp	-55°C to 125°C
Supply Voltage	0V to +5.5V
Control Voltage	0V to Vdd
Junction Temperature	+125 °C

Maximum Ratings Notes:

- 1 Stresses in excess of the absolute maximum ratings can permanently damage the device.
- 2 Exposure to absolute maximum ratings for extended periods may adversely affect device reliability.

Package Information



Pin #	Function
Pin 1	Vc = Control Voltage or NC
Pin 2	GND = Ground
Pin 3	OUT = Output
Pin 4	Vdd = Supply Voltage



Handling and Construction


Package Construction	hermetic ceramic
Contact Pads	Gold over Nickle
Moisture Sensitivity Level	MSL 1
ESD, Human Body Model	500V
ESD, Charge Device Model	500V

Ordering Information
MV-TS651-2016V -

TCXO, Clipped Sine Wave 
 2.0 x 1.6 x 0.85mm, 4 Pins 

X X X X

① ② ③ ④

- xxMxxxxxx
 Frequency

① Voltage

B: 3.3 V
 C: 2.8 V
 E: 1.8 V

② Temp Range

J: -10/+70 °C
 H: -20/+70 °C
 K: -40/+85 °C
 P: -30/+85 °C

③ Temp Stability

N: ±2.0 ppm
 P: ±1.5 ppm
 Q: ±1.0 ppm
 R: ±0.5 ppm

④ Tuning Range

X: No Tuning
 L: ±5 ppm
 K: ±8 ppm
 J: ±10 ppm
 H: ±12 ppm
 G: ±15 ppm