

MV-MS660-1409E is a Temperature Compensated Oscillator (TCXO) . This TCXO is digital temperature compensated, Clipped Sine Wave output device and comes in a FR4 base with metal cover 14.0x9.0mm package.

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	5		52	MHz
Operating Temperature		-10/+70 to -40/+85		°C
Package Size		14.0 x 9.0 x 5.3		mm
Frequency Stability				
Stability Over Temperature		±0.1 to ±0.025		ppm
Initial Accuracy (25°C ±2°C)			±0.25	ppm
Power Supply Stability (±5% Change)			±0.05	ppm
Load Stability (±10% Change)			±0.05	ppm
Aging (1st year)			±0.5	ppm
Aging (20 years)			±2.0	ppm
G-Sensitivity			0	ppb/g
Supply				
Supply Voltage (Vdd)	3.14	+3.3	3.47	V
Supply Current		65	80	mA
Tuning				
Tuning (Pull) Range		No Tuning		ppm
Output				
Output Signal		Clipped Sine Wave		
Output Level - Logic High	Vdd x 0.9			V
Output Level - Logic Low			Vdd x 0.1	V
Output Load		10KΩ 10pF		
Output Rise and Fall Time			6	ns
Duty Cycle	45		55	%
Phase Noise & Jitter				
Phase Noise: (19.2 MHz)				
1 Hz offset		-75		dBc/Hz
10 Hz offset		-105		dBc/Hz
100 Hz offset		-123		dBc/Hz
1kHz offset		-145		dBc/Hz
10kHz offset		-150		dBc/Hz
100kHz offset		-150		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 19.2 MHz		0.30		ps

Maximum Ratings

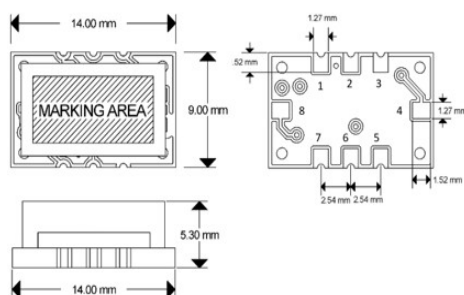
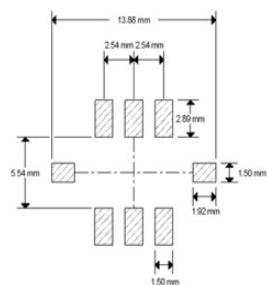
Storage Temp	-55°C to 125°C
Supply Voltage	0V to +4.0V

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	NC = Make No Connection
Pin 2	NC = Make No Connection
Pin 3	GND = Ground
Pin 4	NC = Make No Connection
Pin 5	OUT = Output
Pin 6	NC = Make No Connection
Pin 7	Vdd = Supply Voltage
Pin 8	NC = Make No Connection

Pad Layout

Package Outline Drawing
Handling and Construction

Package Construction	FR4 base with metal cover
Contact Pads	Gold over Nickle
Moisture Sensitivity Level	MSL 1
ESD, Human Body Model	500V
ESD, Charge Device Model	500V

Ordering Information
MV-MS660-1409E -
B x x x
- xxMxxxxxx

TCXO, Clipped Sine Wave

14.0 x 9.0 x 5.3mm, 8 Pins

① ② ③ ④

Frequency

① Voltage

B: 3.3 V

② Temp Range

J: -10/+70 °C

H: -20/+70 °C

K: -40/+85 °C

③ Temp Stability

U: ±0.1 ppm

④ Tuning Range

X: No Tuning