

MV-XC250-2016W is a Crystal Oscillator (XO) . This XO provides low jitter performance, CMOS output 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	1		80	MHz
Operating Temperature		-10/+70 to -55/+125		°C
Frequency Stability				
Stability Over Temperature		±100 to ±20		ppm
Start Up Time			10	ms
Package Size		2.0 x 1.6 x 0.7		mm
Supply				
Supply Voltage (Vdd)		+1.8 to +3.3		V
Supply Current				
≤ 40 MHz (@3.3V)		4	8	mA
> 40 MHz (@3.3V)		7	10	mA
Supply Voltage (Vdd)				V
Supply Current				
≤ 40 MHz (@2.5V)		4	5	mA
> 40 MHz (@2.5V)		5	7	mA
Supply Voltage (Vdd)				
Supply Current				
≤ 40 MHz (@1.8V)		3	4	mA
> 40 MHz (@1.8V)		5	6	mA
Current, Output Disabled			20	µA
Output				
Output Signal		CMOS		
Output Logic Level				
Output Level - Logic High	Vdd-0.4		Vdd	V
Output Level - Logic Low			0.4	V
Output Load		15 pF		
Output Rise and Fall Time		2.0	6.0	ns
Duty Cycle	45	50	55	%
Enable / Disable				
Output Enable / Disable				
Output Enabled	Vdd x 0.7			V
Output Disabled			Vdd x 0.3	V
Phase Noise & Jitter				
Phase Noise: (24 MHz)				
10 Hz offset		-85		dBc/Hz
100 Hz offset		-121		dBc/Hz
1kHz offset		-142		dBc/Hz
10kHz offset		-158		dBc/Hz
100kHz offset		-161		dBc/Hz
1MHz offset		-161		dBc/Hz
10MHz offset		-162		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 24 MHz		0.17		ps

Notes:

- 1 Stability includes initial accuracy, operating temperature, supply voltage, shock and vibration (not under operation) and aging
- 2 Rise and Fall times measured from 20% to 80% of a full output swing
- 3 Power Supply pin should be filtered. e.g. 0.1µF or 0.01 µF Capacitor for optimal performance.
- 4 The Output is Enabled if the Enable/Disable is left open.

Maximum Ratings

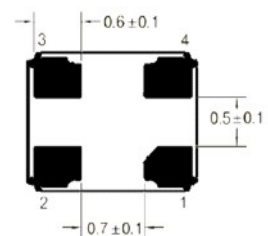
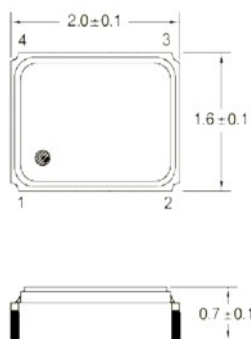
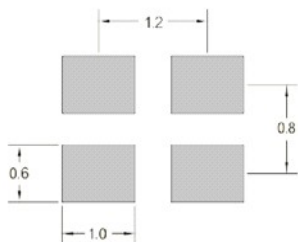
Storage Temp	-55°C to 150°C
Supply Voltage	-0.3V to +4.0V
Enable/Disable Voltage	-0.3V to Vdd+0.3V
Junction Temperature	+150 °C

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	E/D = Enable / Disable or NC
Pin 2	GND = Ground
Pin 3	OUT = Output
Pin 4	Vdd = Supply Voltage

Pad Layout

Package Outline Drawing
Handling and Construction

Package Construction	hermetic ceramic
Contact Pads	Gold over Nickel
Pad Metal Thickness	Gold (0.3µm min - 1.0µm max) over Nickel
Moisture Sensitivity Level	MSL 1
ESD, Human Body Model	1500V
ESD, Charge Device Model	1000V

Ordering Information

MV-XC250-2016W - x x x x - xxMxxxxx

XO, CMOS
① ② ③ ④
Frequency
 2.0 x 1.6 x 0.7mm, 4 Pins

① Voltage

B: 3.3 V
 H: 3.0 V
 C: 2.8 V
 D: 2.5 V
 E: 1.8 V

② Temp Range

J: -10/+70 °C
 H: -20/+70 °C
 K: -40/+85 °C
 N: -55/+125 °C

③ Temp Stability

A: ±100 ppm
 C: ±50 ppm
 E: ±25 ppm
 F: ±20 ppm

④ Other

H: Enable High
 T: Tri-State