MV-VC511-7050G

Voltage Controlled Crystal Oscillator (VCXO)
7.0 x 5.0mm - CMOS

MV-VC511-7050G is a Voltage Controlled Crystal Oscillator (VCXO) . This VCXO provide low phase noise and jitter performance over a wide operating temperature range, CMOS output and comes in a hermetic ceramic 7.0x5.0mm 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	10		250	MHz
Operating Temperature		-10/+70 to -40/+85		°C
Frequency Stability				
Stability Over Temperature		±50 to ±25		ppm
Start Up Time			5	ms
Package Size		7.0 x 5.0 x 1.7		mm
Supply				
Supply Voltage (Vdd)		+2.5 to +3.3		V
Supply Current		24		mA
Current, Output Disabled		16		mA
Tuning				
Absolute Pull Range		±50		ppm
Control Voltage to reach Pull Range		1.25V±1.25V (2.5V), 1.65V±1.35V(3.3V)		V
Output				
Output Signal		CMOS		
Output Logic Level				
Output Level - Logic High	Vdd x 0.9			V
Output Level - Logic Low			Vdd x 0.1	V
Output Load		15 pF		
Output Rise and Fall Time			0.600	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: (125 MHz)				
10 Hz offset		-62		dBc/Hz
100 Hz offset		-96		dBc/Hz
1kHz offset		-111		dBc/Hz
10kHz offset		-123		dBc/Hz
100kHz offset		-127		dBc/Hz
1MHz offset		-138		dBc/Hz
10MHz offset		-155		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 125 MHz		0.6		ps

Notes:

1. Pull Range tested with Vc = 0V to 3.0V
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 125°C
Supply Voltage	4.2
Enable/Disable Voltage	-0.5 to Vdd +0.5
Junction Temperature	+125 °C

Maximum Ratings Notes:

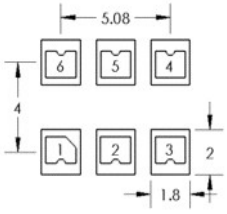
1 Stresses in excess of the absolute maximum ratings can permanently damage the device.

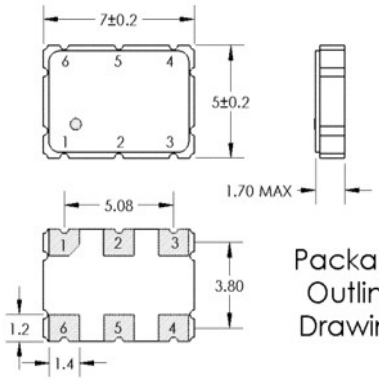
2 Exposure to absolute maximum ratings for extended periods may adversely affect device reliability.

Package Information

Pin #	Function
Pin 1	Vc = Control Voltage or NC
Pin 2	E/D = Enable / Disable
Pin 3	GND = Ground
Pin 4	OUT = Output
Pin 5	C-OUT = Complimentary Output
Pin 6	Vdd = Supply Voltage

Pad Layout





Package Outline Drawing

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-VC511-7050G - x x x C H - xxxMxxxx

① ② ③ ④ ⑤

VCXO, CMOS

7.0 x 5.0 x 1.7mm, 6 Pins

Frequency

① Voltage	② Temp Range	③ Temp Stability	④ Absolute Pull Range	⑤ Enable
B: 3.3 V	J: -10/+70 °C	C: ±50 ppm	C: ±50 ppm	H: Enable High
D: 2.5 V	H: -20/+70 °C	E: ±25 ppm		
	K: -40/+85 °C			