MV-VD230-7050G

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

MV-VD230-7050G is a Voltage Controlled Crystal Oscillator (VCXO) . This VCXO provide low phase noise and jitter performance over a wide operating temperature range, LVDS output and comes in a Hermetic Ceramic 7.0x5.0mm 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	60		200	MHz
Operating Temperature		-10/+70 -40/+85 -40/+105		°C
Stability Over Temperature		±50 ±25 ±20		ppm
Start Up Time			10	ms
Package Size		7.0 x 5.0 x 1.7		mm
Supply				
Supply Voltage (Vdd)	3.14	3.3	3.47	V
Supply Current				
≤ 170 MHz		21	33	mA
> 170 MHz		24	36	mA
Supply Voltage (Vdd)	2.38	2.5	2.63	V
Supply Current				
< 100 MHz		16	23	mA
100 MHz to 170 MHz		20	28	mA
Current, Output Disabled		2.1	5	mA
Tuning				
Absolute Pull Range		±25 ±50		ppm
Control Voltage to reach Pull Range	0		Vdd	V
Control Voltage Impedance	10			MΩ
Control Voltage Modulation BW	20	50		kHz
Output				
Output Signal		LVDS		
Output Logic Level				
Output Level - Logic High		1.43	1.60	V
Output Level - Logic Low	0.90	1.10		V
Output Load		100 Ω		
Output Rise and Fall Time		0.4	0.7	ns
Duty Cycle	45		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		-70		dBc/Hz
100 Hz offset		-104		dBc/Hz
1kHz offset		-128		dBc/Hz
10kHz offset		-146		dBc/Hz
100kHz offset		-156		dBc/Hz
1MHz offset		-156		dBc/Hz
10MHz offset		-163		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 125 MHz		0.07		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	-0.3V to +5.0V
Control Voltage	-0.3V to Vdd+0.3V
Enable/Disable Voltage	-0.3V to Vdd+0.3V
Junction Temperature	+125 °C

Maximum Ratings Notes:

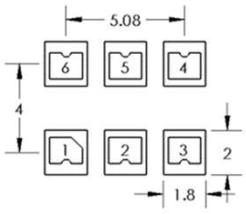
1 Stresses in excess of the absolute maximum ratings can permanently damage the device.

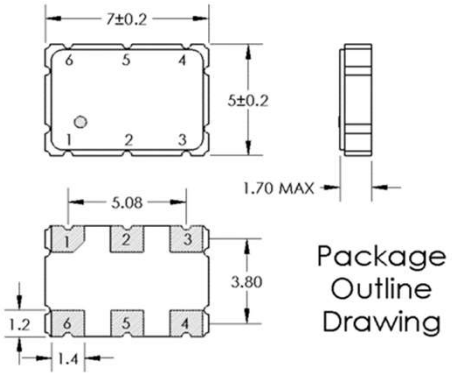
2 Exposure to absolute maximum ratings for extended periods may adversely affect device reliability.

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-VD230-7050G - x x x x x - xxMxxxxx

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VCXO, LVDS

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	E: ±25 ppm	0: No Enable Disable
D: 2.5 V	K: -40/+85 °C	E: ±25 ppm	C: ±50 ppm	H: Enable High
	L: -40/+105 °C	F: ±20 ppm		L: Enable Low

Part Number Configuration Notes:

1 2.5 V only available up to 170MHZ