

MV-VC220-2520D 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 2.5x2.0mm 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	30		80	MHz
Operating Temperature		-10/+70 to -40/+105		°C
Frequency Stability				
Stability Over Temperature		±50 to ±20		ppm
Start Up Time			10	ms
Package Size		2.5 x 2.0 x 1.0		mm
Supply				
Supply Voltage (Vdd)	3.14	+3.3	3.47	V
Supply Current		10	15	mA
Current, Output Disabled			10	µA
Tuning				
Absolute Pull Range		±50 to ±100		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		CMOS		
Output Logic Level				
Output Level - Logic High	Vdd-0.4			V
Output Level - Logic Low			0.4	V
Output Load		15 pF		
Output Rise and Fall Time		1.5	3.0	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: (122.88 MHz)				
10 Hz offset		-70		dBc/Hz
100 Hz offset		-101		dBc/Hz
1kHz offset		-127		dBc/Hz
10kHz offset		-146		dBc/Hz
100kHz offset		-158		dBc/Hz
1MHz offset		-162		dBc/Hz
10MHz offset		-164		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 122.88 MHz		0.05		ps

Notes:

- 1 Pull Range tested with Vc = 0.3V 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

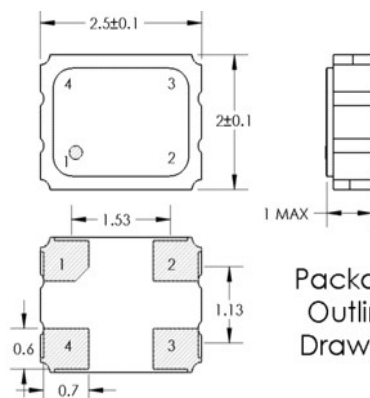
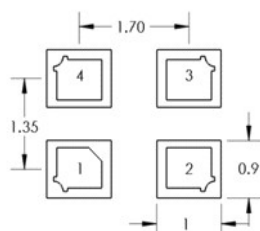
Storage Temp	-55°C to 125°C
Supply Voltage	-0.3V to +5.0V
Control Voltage	-0.3V to Vdd+0.3V
Enable/Disable Voltage	-0.3V to Vdd+0.3V
Junction Temperature	+125 °C

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	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 Nickle
Moisture Sensitivity Level	MSL 1
ESD, Human Body Model	500V
ESD, Charge Device Model	500V

Ordering Information

MV-VC220-2520D - B x x x x - xxMxxxxxx

VCXO, CMOS

2.5 x 2.0 x 1.0mm, 4 Pins

① ② ③ ④ ⑤

Frequency

① Voltage

B: 3.3 V

② Temp Range

J: -10/+70 °C

H: -20/+70 °C

K: -40/+85 °C

L: -40/+105 °C

③ Temp Stability

C: ±50 ppm

E: ±25 ppm

F: ±20 ppm

④ Absolute Pull Range ⑤ Enable

C: ±50 ppm

B: ±80 ppm

A: ±100 ppm

O: No Enable Disable

H: Enable High

L: Enable Low