

MV-XD165-2520E is a Crystal Oscillator (XO) . This XO provides low jitter performance, LVDS output and comes in a hermetic ceramic 2.5x2.0mm 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	100		156	MHz
Operating Temperature		-10/+70 to -40/+105		°C
Package Size		2.5 x 2.0 x 1		mm
Frequency Stability				
Stability Over Temperature		±100 to ±20		ppm
Start Up Time			10	ms
Supply				
Supply Voltage (Vdd)		+1.8 to +3.3		V
Supply Current		16	24	mA
Current, Output Disabled			10	µA
Output				
Output Signal		LVDS		
Output Logic Level				
Output Level - Logic High		1.43	1.6	V
Output Level - Logic Low	0.9	1.1		V
Output Load		100 Ω		
Output Rise and Fall Time			0.5	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: (156.25 MHz)				
10 Hz offset		-76		dBc/Hz
100 Hz offset		-106		dBc/Hz
1kHz offset		-134		dBc/Hz
10kHz offset		-149		dBc/Hz
100kHz offset		-154		dBc/Hz
1MHz offset		-160		dBc/Hz
10MHz offset		-163		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 156.25 MHz		0.047		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 125°C
Supply Voltage	-0.3V to +4.0V
Enable/Disable Voltage	-0.5V to Vdd+0.5V
Junction Temperature	+150 °C

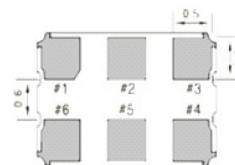
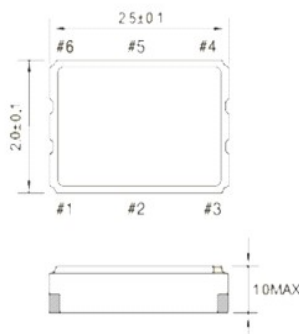
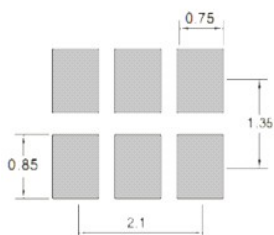
Maximum Ratings Notes:

- 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	NC = Make No Connection
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 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-XD165-2520E - x x x 1 - xxxMxxxx

XO, LVDS

2.5 x 2.0 x 1mm, 6 Pins

① ② ③ ④

Frequency

① Voltage

B: 3.3 V

D: 2.5 V

E: 1.8 V

② Temp Range

J: -10/+70 °C

H: -20/+70 °C

K: -40/+85 °C

L: -40/+105 °C

③ Temp Stability

A: ±100 ppm

C: ±50 ppm

E: ±25 ppm

F: ±20 ppm

④ Enable

1: Enable on Pin 1