

MV-TC650-7050W is a Temperature Compensated Crystal Oscillator (TCXO) . This TCXO is analog temperature compensated, CMOS output device 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	13		52	MHz
Operating Temperature		-10/+70 to -40/+85		°C
Frequency Stability				
Stability Over Temperature		±2.0 to ±0.28		ppm
Initial Accuracy (25°C ±2°C)			±1.0	ppm
Power Supply Stability (±5% Change)			±0.1	ppm
Load Stability (±10% Change)			±0.1	ppm
Aging @ 25 °C (1st year)			±0.5	ppm
Aging @ 25 °C (20 year) - Stratum 3			±3.0	ppm
Holdover Stability: +25 °C, 24 hrs (after 48 hrs)			±0.01	ppm
Holdover Stability: +25 °C, 24 hrs (after 10 days)			±0.04	ppm
Start Up Time			2	ms
Package Size		7.0 x 5.0 x 1.5		mm
Supply				
Supply Voltage (Vdd)		+2.8 to +5.0		V
Supply Current				
10 MHz to < 26 MHz			6	mA
26 MHz to < 40 MHz			8	mA
40 MHz to < 50 MHz			10	mA
Tuning				
Tuning (Pull) Range		±5 to ±12		ppm
Tuning Slope		Positive		
Control Voltage to reach Pull Range		1.65±1.65 (@3.3), 2.5±2 (@5.0)		V
Control Voltage Impedance	100			KΩ
Output				
Output Signal		CMOS		
Output Level	Vdd x 0.9			V
Output Level - Logic Low			Vdd x 0.1	V
Output Load		15 pF		
Output Rise and Fall Time			8	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: (32 MHz)				
1 Hz offset		-58		dBc/Hz
10 Hz offset		-86		dBc/Hz
100 Hz offset		-110		dBc/Hz
1kHz offset		-135		dBc/Hz
10kHz offset		-143		dBc/Hz
100kHz offset		-152		dBc/Hz

Notes:

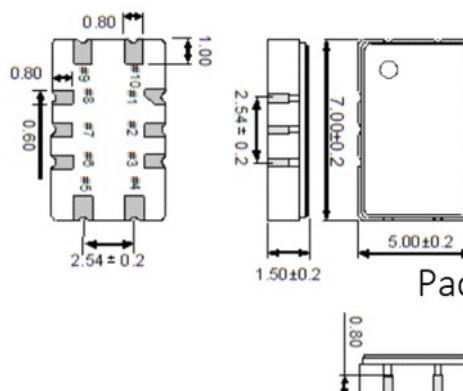
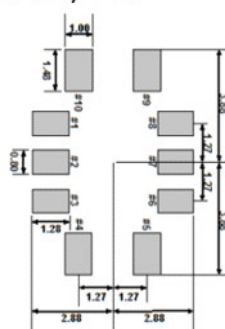
- 1 Rise and Fall times measured from 10% to 90% of a full output swing

Storage Temp	-55°C to 125°C
Supply Voltage	0V to +5.5V
Control Voltage	0V to Vdd
Junction Temperature	+125 °C

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.

Pin #	Function
Pin 4	GND = Ground
Pin 5	OUT = Output
Pin 8	E/D = Enable / Disable
Pin 9	Vdd = Supply Voltage
Pin 10	Vc = Control Voltage or NC
All Others	NC = Make No Connection

- 1 E/D pin: HIGH or "open" = Specified frequency output.
- 2 E/D pin: LOW = Output is high impedance.



Package Outline Drawing

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-TC650-7050W - x x x x H - xxMxxxxxx

TCXO, CMOS

7.0 x 5.0 x 1.5mm, 10 Pins

① ② ③ ④ ⑤

Frequency

① Voltage

A: 5.0 V
B: 3.3 V
H: 3.0 V
C: 2.8 V

② Temp Range

J: -10/+70 °C
H: -20/+70 °C
K: -40/+85 °C
P: -30/+85 °C

③ Temp Stability

N: ±2.0 ppm
P: ±1.5 ppm
Q: ±1.0 ppm
R: ±0.5 ppm
S: ±0.28 ppm

④ Tuning Range

X: No Tuning
L: ±5 ppm
K: ±8 ppm
J: ±10 ppm
H: ±12 ppm

⑤ Enable

H: Enable High