

MV-TC641-1196X is a Temperature Compensated Crystal Oscillator (TCXO) . This TCXO is analog temperature compensated, CMOS output device and comes in a FR4 base with metal cover 11.4x9.6mm 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	1.0		250	MHz
Operating Temperature		-10/+70 to -40/+85		°C
Package Size		11.4 x 9.6 x 1.85		mm
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)			±0.2	ppm
Load Stability (±10% Change)			±0.1	ppm
Aging / year (after 30 days of operation)			±1.0	ppm/year
Supply				
Supply Voltage (Vdd)		+3.3 to +5.0		V
Supply Current				
@ 40 MHz			30	mA
@ 250 MHz			50	mA
Tuning				
Tuning (Pull) Range		±5 to ±15		ppm
Tuning Slope		Positive		
Control Voltage to reach Pull Range		2.5±2.0 (@5.0), 1.65±1.5 (@3.3)		V
Linearity		< 10		%
Control Voltage Impedance	10			KΩ
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			5	ns
Duty Cycle	40		60	%
Phase Noise & Jitter				
Phase Noise: (20 MHz)				
10 Hz offset		-80		dBc/Hz
100 Hz offset		-120		dBc/Hz
1kHz offset		-135		dBc/Hz
10kHz offset		-140		dBc/Hz
100kHz offset		-145		dBc/Hz
1MHz offset		-150		dBc/Hz
Jitter				
RMS Jitter: (12kHz - 20MHz) - 20 MHz		0.1		ps

Notes:

- 1 SMD oscillators must be on the top side of the PCB during the reflow process.

Maximum Ratings

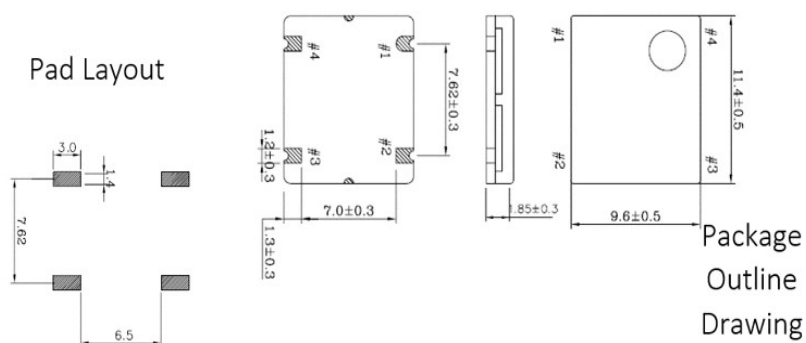
Storage Temp	-55°C to 125°C
Supply Voltage	0V to +6.0V
Control Voltage	-0.6V to +Vdd+0.6V

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


Handling and Construction

Package Construction	FR4 base with metal cover
Washable	non-washable device
RoHS compliance	100% ROHS 6 compliant
Moisture Sensitivity Level	MSL 1
ESD	HBM JESD22-A114-F Class 1C 10* 2000V

Ordering Information
MV-TC641-1196X -

TCXO, CMOS

11.4 x 9.6 x 1.85mm, 4 Pins

X X X X

① ② ③ ④

- xxxMxxxx

Frequency

① Voltage

A: 5.0 V

B: 3.3 V

② Temp Range

J: -10/+70 °C

H: -20/+70 °C

K: -40/+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

G: ±15 ppm