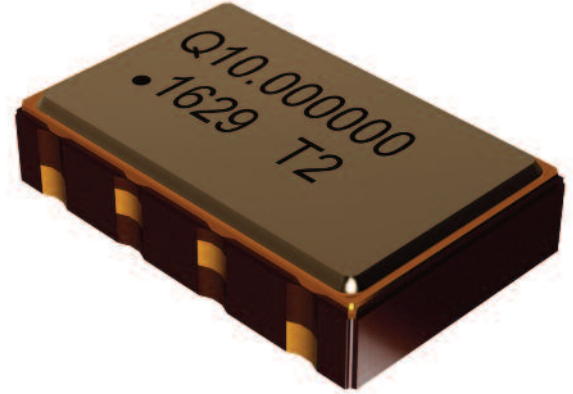


Description

Q-Tech's surface-mount QTCT350 oscillators consist of an IC 3.3Vdc, 5.0Vdc TCXO built in a low profile ceramic package with gold plated contact pads.

Features

- ECCN: EAR99
- Frequency range from 10.000MHz to 52.000MHz
- Small footprint
- Clipped Sine, CMOS logic
- 5.0Vdc, 3.3Vdc supply
- Operating temperature -40°C to +85°C available
- Optional Free Tuning
- Hermetically sealed ceramic package
- Military screening tests per MIL-PRF-55310 available
- Tape and reel packaging
- Lead Free, RoHS Compliant
- VCTCXO Option

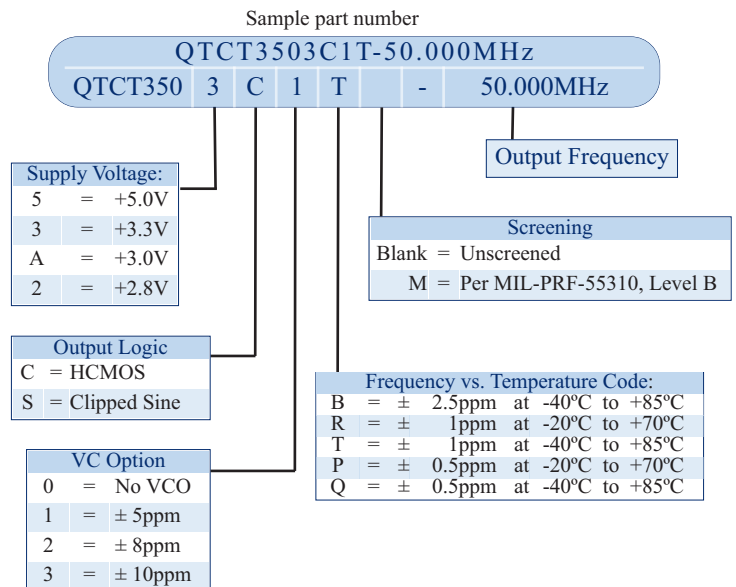


Applications

- Designed to meet today's requirements for low voltage applications
- Instrumentation
- Navigation
- Avionics
- Ethernet/SynchE
- Base Stations
- Global Positioning Systems (GPS)
- Manpack Radio
- FEMTO Cells

[See our Stock List \(Updated Monthly\)](#)

Ordering Information



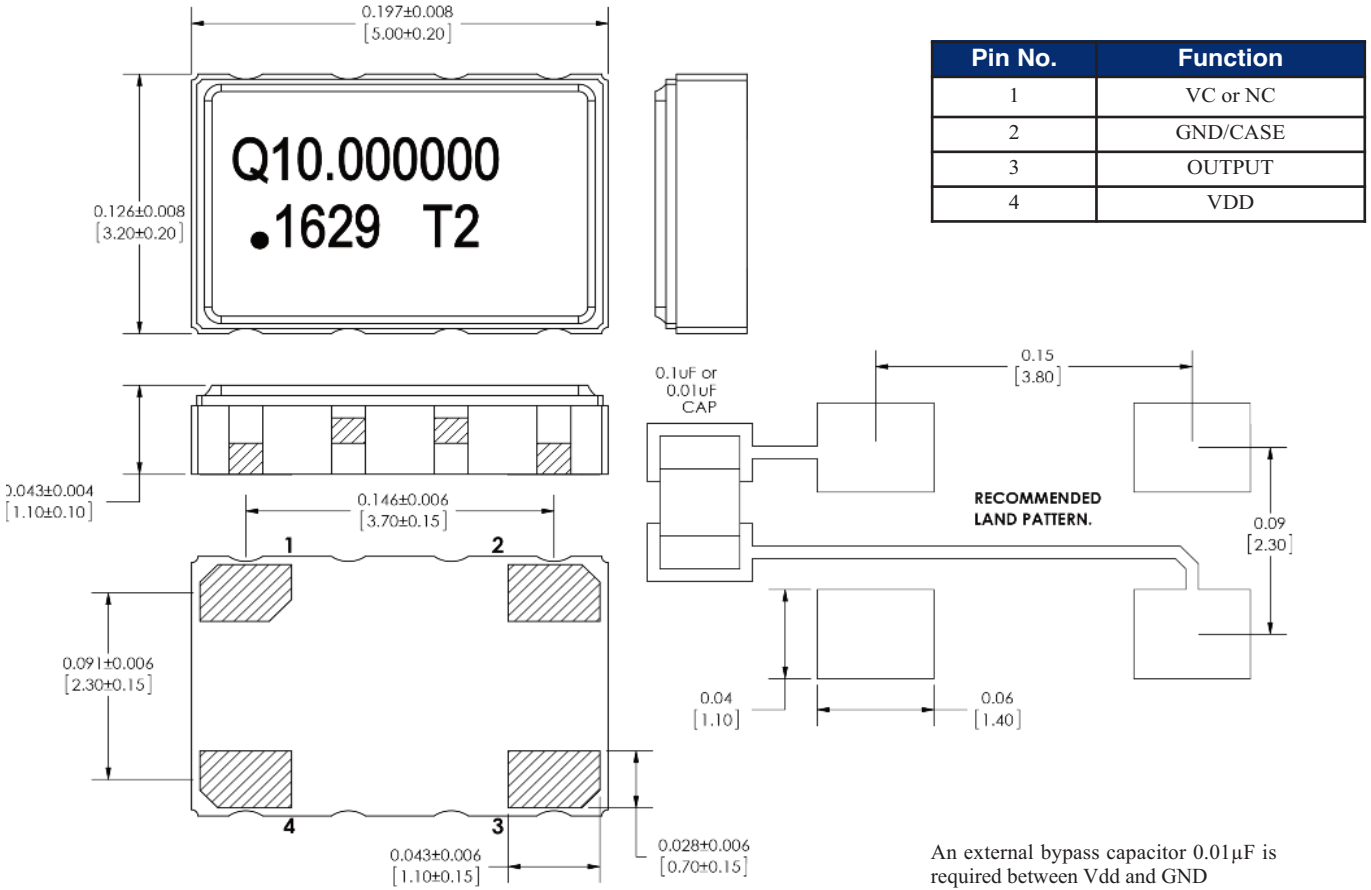
Other Options Available For An Additional Charge

- Hot Solder Dip Sn60/Pb40 per MIL-PRF 55310

Specifications subject to change without prior notice.

Frequency stability vs. temperature codes may not be available in all frequencies.
For Non-Standard requirements, contact Q-Tech Corporation at Sales@Q-Tech.com

Package Outline and Pin Connections
Dimensions are in inches (mm)



Marking

Line 1: QXXX.XXXXXX (Q for Q-Tech, no space 9 or 10 Characters of Frequency including decimal)
 Line 2: Dot (Pin 1 Indicator) + Date code (YY/WW), Internal Traceability Code

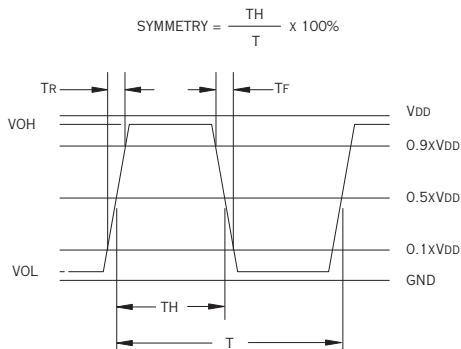
Package Information

- Termination pads (4x), Electro nickel plating 1.27µm ~ 8.89µm typ., with gold 0.3µm ~ 1.0µm flash plate
- Weight: 0.057g typ.

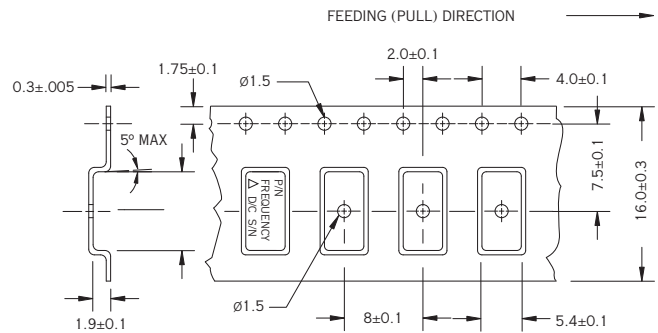
Electrical Characteristics

Parameters	QTCT350XC	QTCT350XS
Output frequency range (Fo)	10.000MHz — 40.000MHz	10.000MHz — 52.000MHz
Logic	HCMOS	Clipped Sine
Supply voltage (Vdd)	5.0Vdc, 3.3Vdc ± 5%	
Supply current (Idd)	3.5 mA max. - < 26MHz 8.0 mA max. - 26MHz ~ ≤ 40MHz	2.0 mA max. - < 26MHz 3.5 mA max. - 26MHz ~ ≤ 52MHz
VCO Option (Tuning Range)	See Part Number on Page 1	
Operating temperature (Topr)	See Part Number on Page 1	
Storage temperature (Tsto)	-62°C to + 125°C	
Duty Cycle	45/55%	N/A
Rise and Fall times	5ns max.	N/A
Start-up time (Tstup)	2ms max.	
Output voltage (Voh/Vol)	0.9Vdd min. / 0.1Vdd max.	Vop-p = 0.8V
Output Load	15pF max.	10k 10pF
Control Voltage to reach Pull Range	0.5V min. 1.5V typ. 2.5V max.	
Control Voltage Impedance	100kΩ min.	
Phase Noise typ. at 12.8MHz		
10Hz	-90 dBc/Hz	-96 dBc/Hz
100Hz	-112 dBc/Hz	-115 dBc/Hz
1kHz	-134 dBc/Hz	-133 dBc/Hz
10kHz	-150 dBc/Hz	-146 dBc/Hz
100kHz	-156 dBc/Hz	-158 dBc/Hz
Frequency Tolerance (Ftol) at 25°C	±2.0ppm	
Power Supply Stability ±5% (Fpwr)	±0.3ppm	±0.2ppm
Load Stability ±10% (Fload)	±0.2ppm	
Aging	±1.0ppm 1st year	

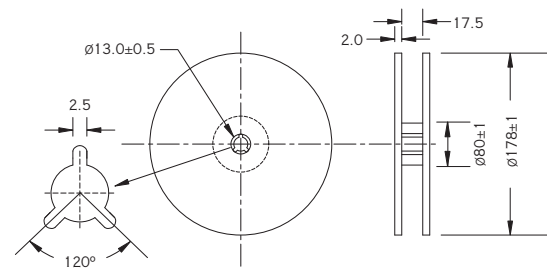
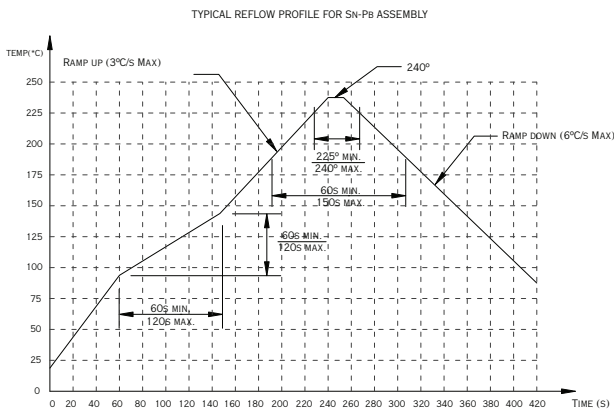
CMOS Output Waveform (Typical)



Embossed Tape and Reel Information



Reflow Profile



Dimensions are in mm. Tape is compliant to EIA-481-A.

Reel size (Diameter in mm)	Qty per reel (pcs)
178	1,000

Environmental and Mechanical Specifications

Environmental Test	Test Conditions
Temperature cycling	MIL-STD-883, Method 1010, Cond. B
Constant acceleration	MIL-STD-883, Method 2001, Cond. A, Y1
Seal: Fine and Gross Leak	MIL-STD-883, Method 1014, Cond. A and C
Vibration sinusoidal	MIL-STD-202, Method 204, Cond. D
Shock, non operating	MIL-STD-202, Method 213, Cond. I
Resistance to solder heat	MIL-STD-202, Method 210, Cond. B
Resistance to solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-202, Method 208
ESD Classification	MIL-STD-883, Method 3015, Class 1
Moisture Sensitivity Level	J-STD-020, MSL=1



QTCT350 SERIES
3.2 x 5mm MINIATURE SMD TEMPERATURE CONTROLLED CRYSTAL OSCILLATORS
2.8 to 5.0Vdc - 10.000MHz to 52.000MHz

DCO	REV	REVISION SUMMARY	PAGE	DATE
6168	A	Add 'VCTCXO Option' in description	1	2/3/17
		Fixed clipped picture	2	
		Storage temp changed -55C to -62C	3	
		'Phase noise' changed to 'Phase noise typ. at 12.8MHz'		
		Frequency tolerance changed 1.5ppm to 2.0ppm		
		Fload changed 0.1ppm to 0.2ppm		
		Fpwr changed 0.1ppm to 0.2ppm		
		Idd changed 6mA to 8mA and 2.6mA to 3.5mA		
6653	B	Add temperature code B.	1	4/10/17
		Corrected lower limit of voltage in header from 3.3V to 2.8V	All	
		Revised 'Applications'	1	
		Corrected lower limit of frequency in 'Features' from 5.000MHz to 10.000MHz	1	