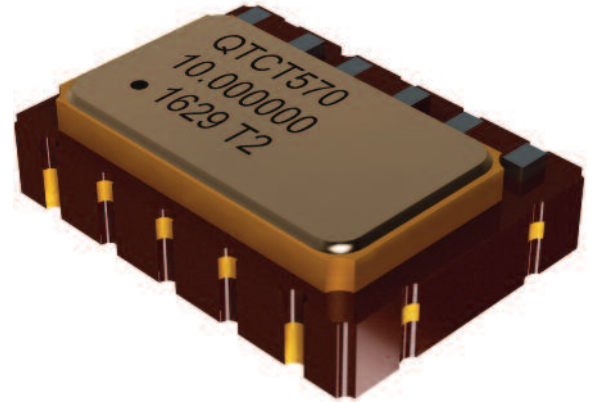


Description

Q-Tech's surface-mount QTCT570 oscillators consist of an IC 2.8Vdc, 3.3Vdc clock TCXO built in a low profile ceramic package with gold plated contact pads.

Features

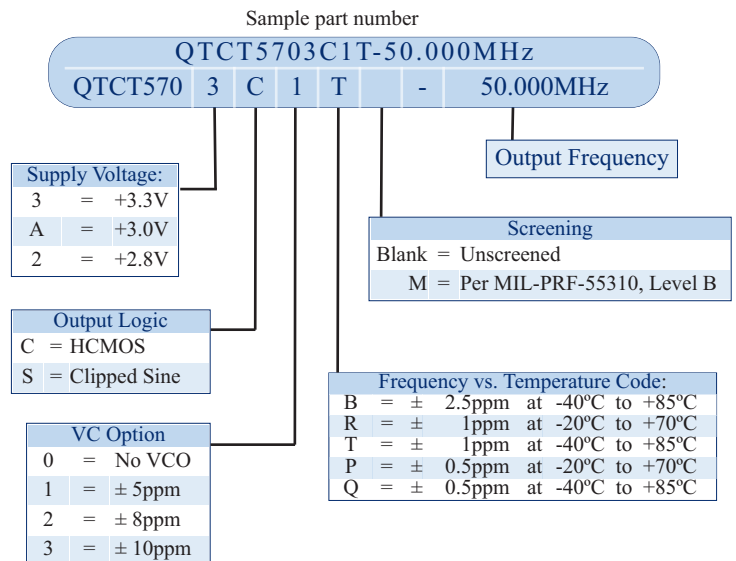
- ECCN: EAR99
- Frequency range from 5.000MHz to 52.000MHz
- Small footprint
- Clipped Sine, CMOS logic
- 2.8Vdc, 3.3Vdc supply
- Operating temperature -40°C to +85°C available
- Optional Free Tuning
- Hermetically sealed ceramic package
- Military screening tests per MIL-PRF-55310 available
- Tape and 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

Ordering Information



Other Options Available For An Additional Charge

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

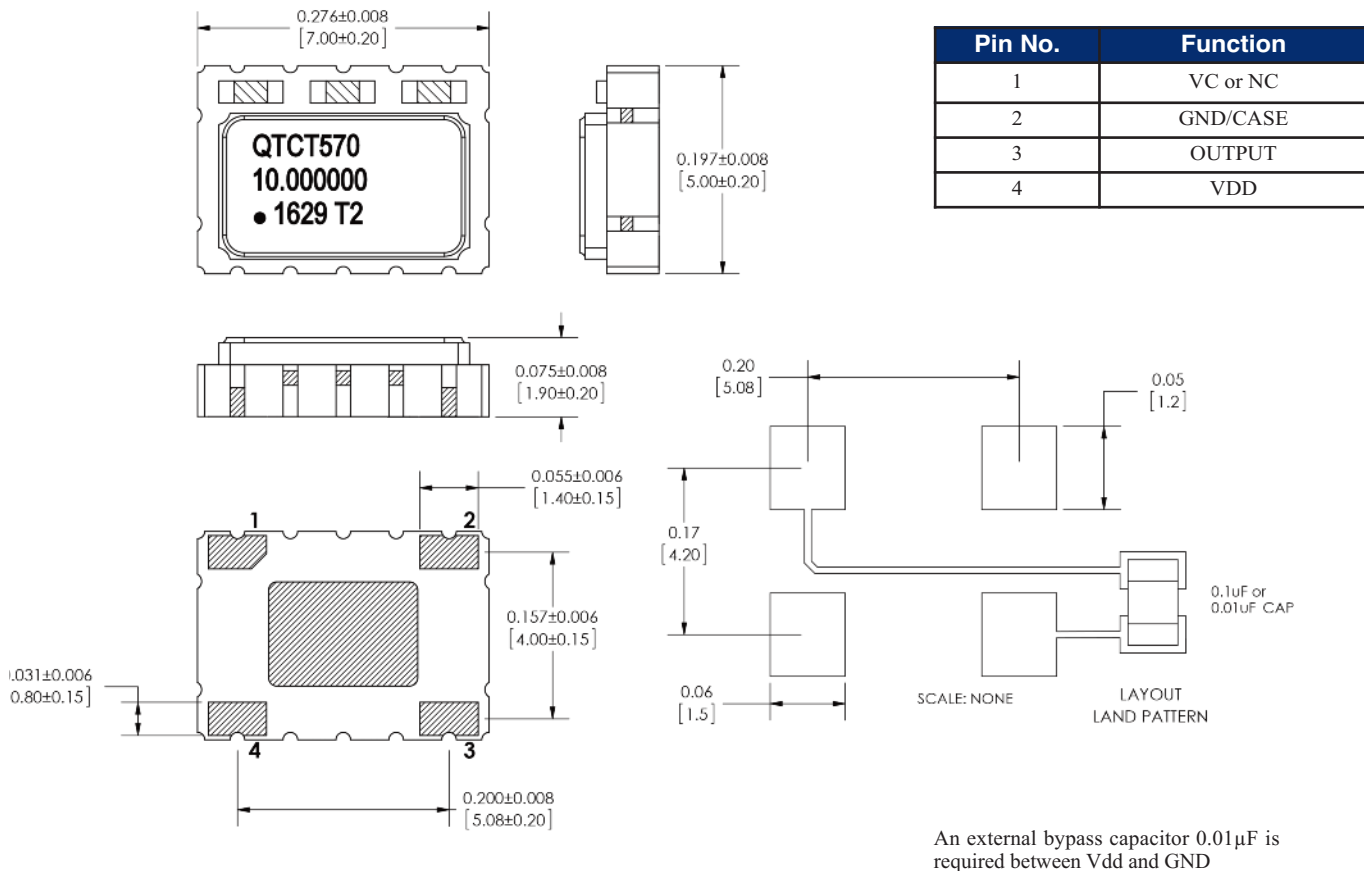
Specifications subject to change without prior notice.

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: QTCT570 (First 7 Characters of Description)
 Line 2: XXX.XXXXXX (9 or 10 Characters of Frequency in MHz including decimal)
 Line 3: Dot (Pin 1 Indicator) + Date code (YY/WW), Internal Traceability Code

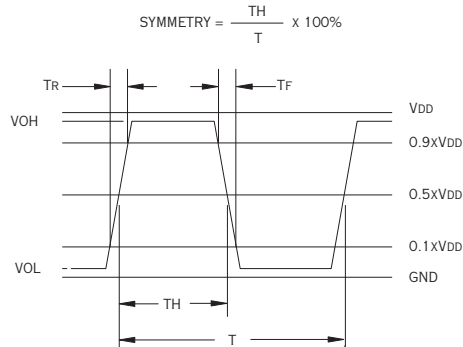
Package Information

- Termination pads (4x), Electro nickel plating 1.27μm ~ 8.89μm typ., with gold 0.3μm ~ 1.0μm flash plate
- Weight: 0.15g typ., 2.0g max.

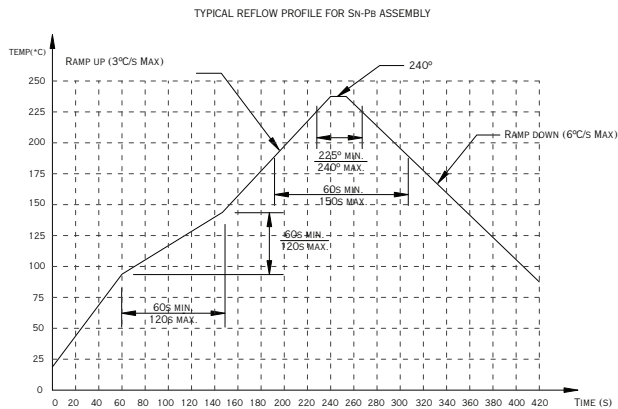
Electrical Characteristics

Parameters	QTCT570XC	QTCT570XS
Output frequency range (Fo)	5.000MHz — 52.000MHz	
Logic	HCMOS	Clipped Sine
Supply voltage (Vdd)	2.8Vdc, 3.3Vdc \pm 5%	
Supply current (Idd)	6.0mA	3.5mA
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	4ns	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 \parallel 10pF
Control Voltage to reach Pull Range	0.5V min. 1.5V typ. 2.5V max.	
Control Voltage Impedance	100k Ω min.	
Phase Noise typ. at 12.8MHz		
10Hz	-98 dBc/Hz	-96 dBc/Hz
100Hz	-129 dBc/Hz	-122 dBc/Hz
1kHz	-145 dBc/Hz	-140 dBc/Hz
10kHz	-153 dBc/Hz	-148 dBc/Hz
100kHz	-156 dBc/Hz	-153 dBc/Hz
Frequency Tolerance (Ftol) at 25°C	\pm 2.0ppm	
Power Supply Stability \pm 5% (Fpwr)	\pm 0.2ppm	
Load Stability \pm 10% (Fload)	\pm 0.2ppm	
Aging	\pm 1.0ppm 1st year	

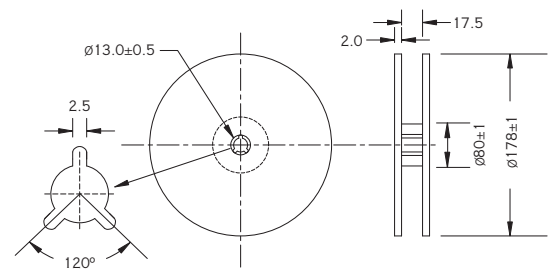
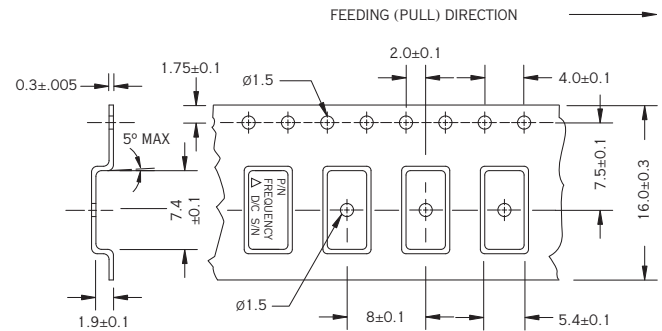
CMOS Output Waveform (Typical)



Reflow Profile



Embossed Tape and Reel Information



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
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



Q-TECH
CORPORATION

QTCT570 SERIES
5 x 7mm MINIATURE SMD TEMPERATURE CONTROLLED CRYSTAL OSCILLATORS
2.8 to 3.3Vdc - 5.000MHz to 52.000MHz

DCO	REV	REVISION SUMMARY	PAGE	DATE
6167	A	Add ‘VCTCXO Option’ in description	1	2/3/17
		Storage temp changed -55C to -62C	3	
		‘Phase noise’ changed to ‘Phase noise typ. at 12.8MHz’		
		Power supply tolerance changed 0.1ppm to 0.2ppm		
6652	B	Add temperature code B.	1	4/10/17
		Revised ‘Applications’	1	