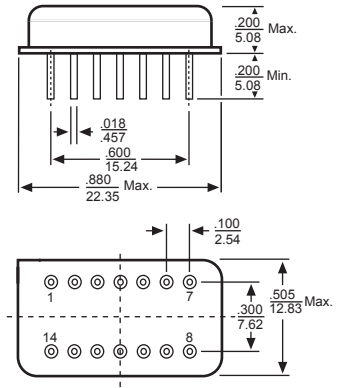


VCXO VOLTAGE CONTROLLED

Upper dimensions in inches - lower dimensions in millimeters. Unless otherwise specified, tolerances are .005" (.127mm.). Detailed mechanical drawings available by request.



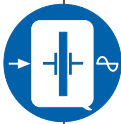
QT 6V

Dual In-Line Crystal Oscillators

Please contact us for variations on these specifications

Q-Tech Corporation

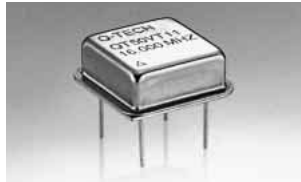
(310) 836-7900
fax (310) 836-2157



QT 41V



QT 6V



QT 50V

Q-TECH Voltage Controlled Crystal Oscillators can be frequency shifted or controlled by changing the voltage at the control point of the device. VCXOs are used for frequency synthesis, clock recovery, and other phase-lock loop applications.

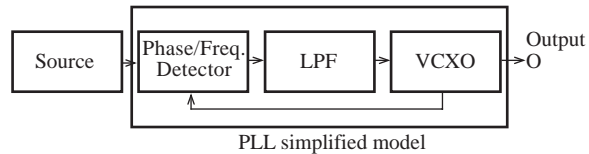
The following parameters need to be determined when specifying a VCXO:

- Control Voltage:** The available voltage range at the input of the VCXO to vary the frequency (i.e., 0 - 5V, ±4V, etc.).
- Deviation (pull range):** The change in the output frequency due to control voltage change.
- Transfer function (sense):** Direction of change in frequency as a function of control voltage.
- Temperature range:** Operating temperature range.
- Stability vs. temperature:** Percentage or ppm change in output frequency with respect to the temperature range at a constant control voltage.
- Input impedance:** A measure of isolation between the VCXO internal frequency control network and the control voltage source.
- Linearity:** The deviation from the best straight line slope of the frequency vs. control voltage plot.
- Modulation band width (rate):** The maximum rate of change of the control voltage.

If the VCXO is intended for phase-lock applications, the required deviation of the VCXO can be determined by the following equation (see fig. below):

$$\text{DEVIATION} > (\text{VCXO STABILITY}) + (\text{STABILITY OF THE SOURCE})$$

In this equation, source stability is a system parameter while VCXO stability would be a function of temperature, time, load, and power supply variations.



sample part number
QT6VHC9M - 20.000 MHz

QT6V	HC	9	M	-	20.000 MHz
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(ORDERING INFORMATION)

MODEL#
QT6V, QT41V,
QT50V, QT57V*

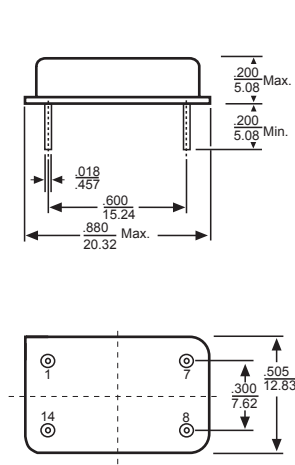
OUTPUT LOGIC OPTIONS
T=TTL
HC= High Speed CMOS
AC=Advanced CMOS
E=10K ECL
EH=10KH ECL
PE=+5V ECL

STABILITY
Please refer to stability table on opposite page.

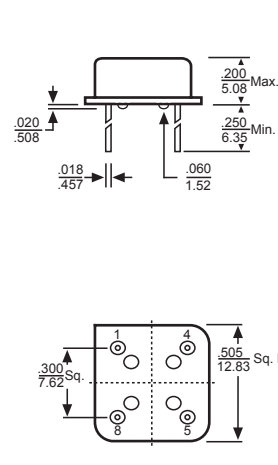
SCREENING
Designate M for Class B M55310 screening. (Optional)
For more information, see page 37.

FREQUENCY
From:
1 KHz
to
200 MHz **
See Standard Electrical Specifications on page 21.

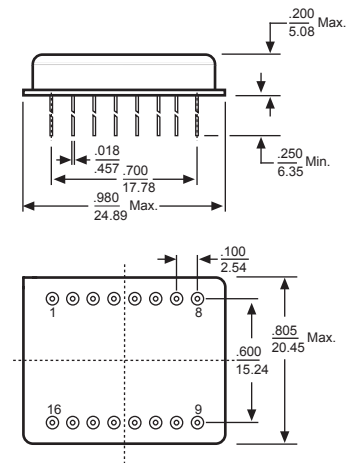
* QT57 offers a broader range of capabilities. Consult the factory for details.
** Frequency range for QT50 is 5.000 MHz to 60.000 MHz for TTL, HC/ACMOS.



QT 41V



QT 50V



QT 57V

PIN CONNECTIONS

QT#	GND	OUT	SUPPLY V	CONTROL V
QT 6V	7	8	14	1
QT 41V	7	8	14	1
QT 50V	4	5	8	1
QT 57V	8	9	16	1

FEATURES

- Wide frequency range.
- Hermetically sealed packages.
- Wide pull range (optional).
- Control voltage and polarity of choices.
- Special linearity (optional).
- Class B M55310 Screening is available upon request.

FREQUENCY STABILITY vs TEMPERATURE*

CODE	±%	±PPM	TEMP
4	.005	50	0°C to +70°C
5	.0025	25	-20°C to +70°C
6	.005	50	-55°C to +105°C
9	.005	50	-55°C to +125°C
10	.01	100	-55°C to +125°C
11	.005	50	-40°C to +85°C
12	.01	100	-40°C to +85°C

*All units operate from -55°C to +125°C. Tolerance is not specified outside the temperature ranges shown above. For frequency stability vs. temperature options not listed herein, request a custom part number.

The Q-TECH double DIP VCXO, QT57V, offers a broader range of capabilities. Consult the factory for details.

ELECTRICAL SPECIFICATIONS

STANDARD

Frequency Range:
 QT41V, QT6V, QT57: up to 200 MHz
 QT50V: 5 MHz to 60 MHz
 Output: TTL, HC/ACMOS, ECL
 Supply Voltage: 5V ±10% (-5.2 V for 10K ECL)
 (-4.5 V for 100K ECL)
 Deviation: ±100 PPM (min)
 Control Voltage (Vc): 0 to 5 Volts
 Transfer Function: Positive
 Modulation BW: Up to 10 KHz
 Linearity: 10%
 Input Impedance: >50K ohm
 Temperature Range: See frequency stability table
 Stability vs. Temp.: See frequency stability table
 Stability vs. Supply and Load changes: ± 4 ppm
 Package: 14 pin/4 pin DIP /Half DIP /Double DIP

Q-TECH Corporation has developed various types of VCXOs, VCOs, and complete phase-locked loops in hermetically sealed as well as solder sealed packages.

OPTIONAL

Sine wave output:
 10K or 100K ECL (± supply)
 Frequency: >200 MHz (not available in QT50)
 Deviation: ≥±100 ppm (Vc=0 - 5V)
 Modulation BW: 0 to 100 KHz DC
 Transfer Function: Negative
 Linearity: <10%
 Control Voltage: Bipolar
 Supply Voltage: 3 to 15V
 Package: 16 and 18 pin DIP,
 Flat Pack, & LCC

The Non-Hybrid versions of these VCXOs are available in industry standard solder sealed packages.