VT-840

Temperature Compensated Crystal Oscillator,
Voltage Controlled Temperature Compensated Crystal Oscillator

Description

Vectron's VT-840 Temperature Compensated Crystal Oscillator (TCXO) is a quartz stabilized, clipped sine wave output, analog temperature compensated oscillator, operating off a 1.8, 2.5, 2.8, 3.0 or 3.3 volt supply in a hermetically sealed 2.5x2.0 ceramic package.

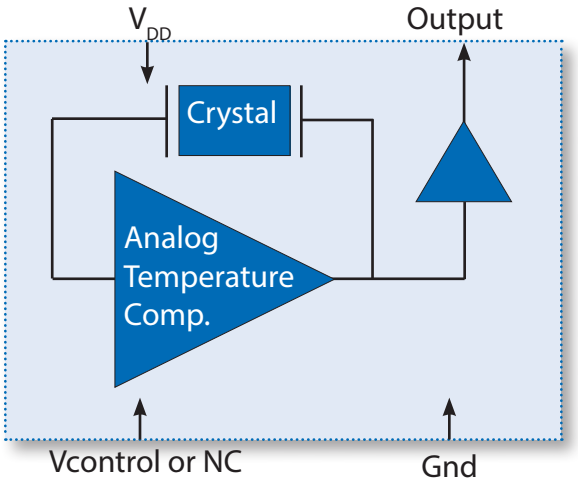
Features

- Output Frequencies to 52 MHz
- ±0.5ppm Temperature Stability
- Fundamental Crystal Design
- Optional VCXO Function available
- Low Power
- Hermetically Sealed Ceramic SMD package
- Product is compliant to RoHS directive and fully compatible with lead free assembly

Applications

- Wireless Communications
- GPS
- Base Stations
- Point to point radios
- Broadband Access
- Test Equipment
- Handsets

Block Diagram



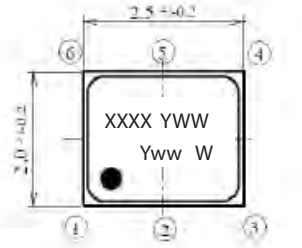
Specifications

Table 1. Electrical Performance

Parameter	Symbol	Min.	Typ	Max	Units
Output Frequency	f_O	10.000		52.000	MHz
Supply Voltage[1], *ordering option*	V_{DD}	+1.8, +2.5, +2.8, +3.0, +3.3			V
Supply Current, 10.000 to 26.000MHz 26.001 to 52.000MHz	I_{DD}			 2.0 2.5	 mA mA
Operating Temperature, *ordering option*	T_{OP}	-20/70, -30/85, -40/85			°C
Stability Over T_{OP}, *ordering option*		±0.5, ±1.0, ±1.5, ±2.0, ±2.5			ppm
Initial Accuracy[2], "No Adjust" Option				±1.0	ppm
Power Supply Stability				±0.2	ppm
Load Stability				±0.2	ppm
Aging				±1.0	ppm/1st yr
Pull Range, *ordering option*	TPR	±5, ±8, ±10, ±12			ppm
Control Voltage to reach Pull Range, 1.8V option +2.5V, +2.8V, +3.0V and +3.3 V options		0.3 0.5		1.5 2.5	V V
Control Voltage Impedance		500			Kohm
Output Level[3]	V_O p/p	0.8			V
Output Load			10K II 10pF		
Phase Noise, 26.000MHz 10Hz 100Hz 1kHz 10kHz 100kHz			 -85 -110 -130 -148 -148		dBc/Hz
Start Up Time				2	ms

1. The VT-840 power supply pin should be filtered, eg, a 0.1 and 0.01uf capacitor
2. Initial Accuracy is before IR reflow, allow and additional 1ppm shift through 2 reflows and 24 hours.
3. The Output is DC coupled and would normally be AC coupled with a capacitor.

Outline Drawing



Marking Information

Line 1

XXXX - Frequency (Example: 4500 for 45MHz)

YWW - Date Code of Crystal

Y - Year

WW - Week of the Year

Line 2

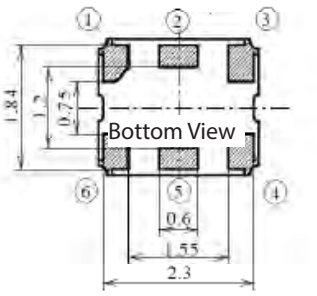
Yww - Date Code of TCXO

Y - Year

ww - Week of the Year

W- Manufacturing Location

• - Pin 1 Indicator



Dimensions in mm

Recommended Pad Layout

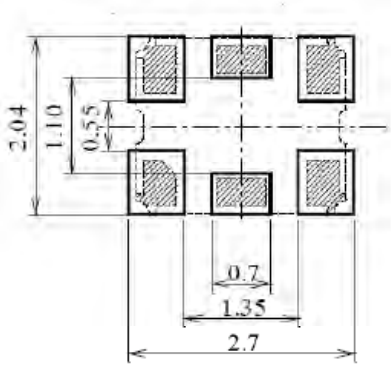


Table 2. Pinout

Pin #	Symbol	Function
1	V_C	TCXO Control Voltage or Ground
2	NC	Make No Connection
3	GND	Electrical and Lid Ground
4	Fo	Output Frequency
5	NC	Make No Connection
6	V_{DD}	Supply Voltage