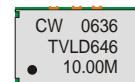


# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 3.3V HCMOS VCTCXO



### TVLD646

#### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	4.6	Vdc	
Control Voltage	(Vc)	-0.5	-	4.6	Vdc	

#### OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	6.4	-	156.25	MHz	
Total Frequency Tolerance		-4.6	-	4.6	ppm	1
Operating Temperature Range		-40	-	85	°C	
Supply Voltage	(Vcc)	3.135	3.3	3.465	Vdc	
Supply Current	(Icc)	-	9	20	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	ps rms	
SSB Phase Noise at 10Hz offset		-	-65	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-95	-	dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-125	-	dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-135	-	dBc/Hz	
SSB Phase Noise at 100KHz offset		-	-145	-	dBc/Hz	

#### INPUT CHARACTERISTICS

TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Control Voltage	(Vc)	0.3	1.65	3.0	Vdc	
Frequency Pullability		±10	-	-	ppm	2
Frequency Adjust Linearity		-15	-	15	%	
Input Impedance		10k	-	-	Ohm	

#### LVC MOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage (High)	(Voh)	2.0	-	-	Vdc	
(Low)	(Vol)	-	-	0.4	Vdc	
Current (High)	(Ioh)	-8	-	-	mA	
(Low)	(Iol)	-	-	8	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	3	5	nS	

#### PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Non-hermetic package consisting of an FR4 substrate with grounded metal cover.
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#### PROCESS RECOMMENDATIONS

TABLE 6.0

Soldering Process	See solder profile page 2.
Wash	Ultrasonic cleaning is not recommended.

#### Note:

- 1) Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration and aging for 10 years.
- 2) Positive Slope.

#### DESCRIPTION

The Connor-Winfield TVLD646 is a Surface Mount Temperature Compensated Crystal Oscillator (TCXO). Operating at 3.3Vdc, the TVLD646 will maintain ±4.6ppm frequency tolerance over 20 years. The TVLD646 is offered in a surface mount package for automated assembly.

#### FEATURES

3.3V OPERATION

OVERALL FREQUENCY TOLERANCE: ±4.6ppm OVER 20 YEARS.

TEMPERATURE RANGE: -40 to 85°C

LOW JITTER <1ps RMS

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS COMPLIANT / LEAD FREE

#### ORDERING INFORMATION

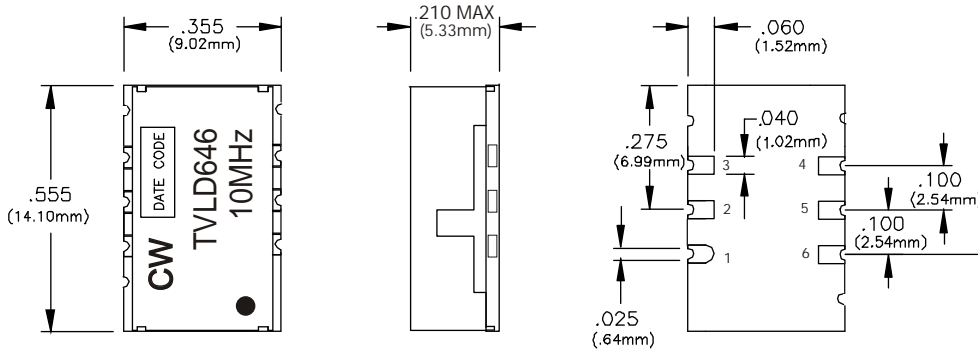
TVLD646 - 10.0MHz

TCXO SERIES CENTER FREQUENCY

Specifications subject to change without notice.

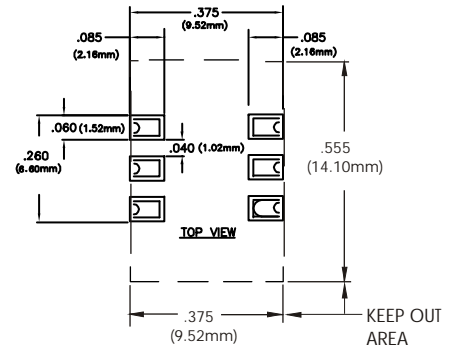
# CRYSTAL CONTROLLED OSCILLATORS

## Package Layout

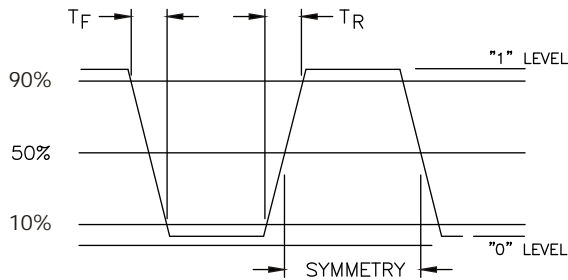


Dimensional Tolerance:  
±.005 (.127mm)

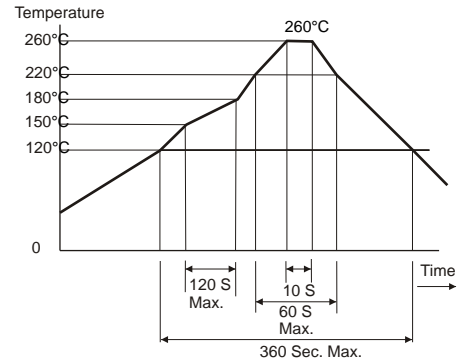
## Suggested Pad Layout



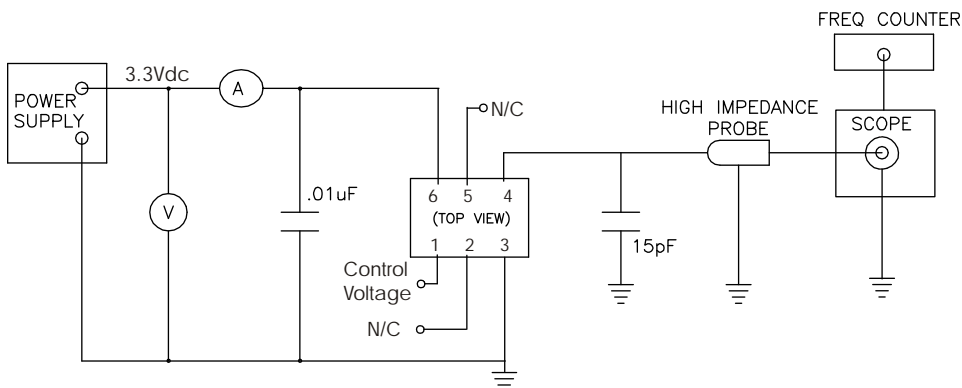
## Output Waveform



## Solder Profile



## Test Circuit



## Pin Connections

TABLE 7.0

Pin	Connection
1	Control Voltage
2	N/C
3	Ground
4	Output
5	N/C
6	Vcc

Specifications subject to change without notice.