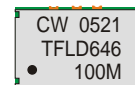


# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 3.3V HCMOS TCXO



## TFLD646

### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.6	-	6	Vdc	

### OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	12.80	-	155.52	MHz	
Frequency Calibration @ 25°C		-1.5	-	1.5	ppm	
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	25	mA	
Jitter (BW=10Hz to 20MHz)		-	-	5	ps rms	
Jitter (BW=12kHz to 20MHz)		-	-	1	ps rms	

### PHASE NOISE CHARACTERISTICS

TABLE 4.0

Typical Phase Noise Measurements @:		12.80	77.76	155.52	MHz	
SSB Phase Noise at 10Hz offset		-60	-60	-50	dBc/Hz	
SSB Phase Noise at 100Hz offset		-90	-90	-80	dBc/Hz	
SSB Phase Noise at 1KHz offset		-120	-120	-115	dBc/Hz	
SSB Phase Noise at 10KHz offset		-135	-135	-130	dBc/Hz	
SSB Phase Noise at 100KHz offset		-145	-145	-140	dBc/Hz	

### HCMOS OUTPUT CHARACTERISTICS

TABLE 5.0

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 6.0

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

TABLE 7.0

Solder Reflow	The component solder used internal to this device has a melting point of 221°C. The peak temperature inside the device should be less than or equal to 220°C for a maximum of 10 seconds
Wash	Ultrasonic cleaning is not recommended.

Note:

- Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 20 years aging.

### DESCRIPTION

The Connor-Winfield TFLD646 is a Surface Mount Temperature Compensated Crystal Oscillator (TCXO). Operating at 3.3Vdc, the TFLD646 will maintain  $\pm 4.6$ ppm frequency tolerance for 20 years over the Industrial Temperature Range. The TFLD646 is offered in a surface mount package for automated assembly.

### FEATURES

3.3V OPERATION

OVERALL FREQUENCY TOLERANCE:  
 $\pm 4.6$ ppm OVER 20 YEARS.

TEMPERATURE RANGE: -40 to 85°C

LOW JITTER <1pS RMS

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

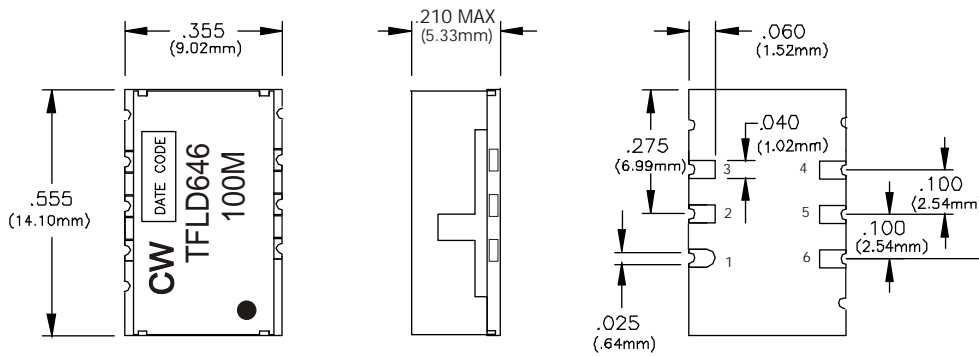
### ORDERING INFORMATION

TFLD646 - 100.0MHz

TCXO SERIES CENTER FREQUENCY

Specifications subject to change without notice.

**CRYSTAL CONTROLLED OSCILLATORS**

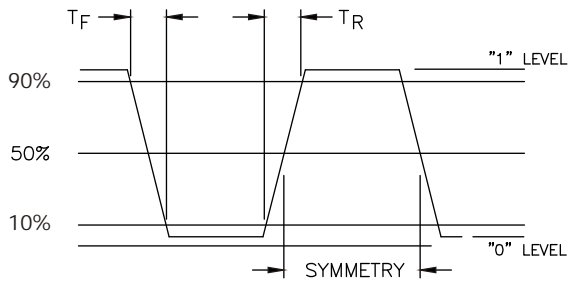


Dimensional Tolerance:  
±.005 (.127mm)

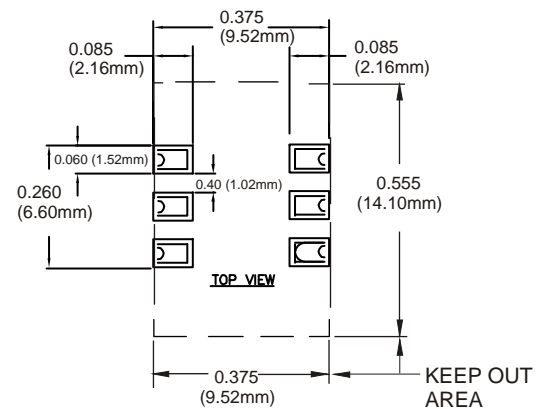
**TABLE 8.0**

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

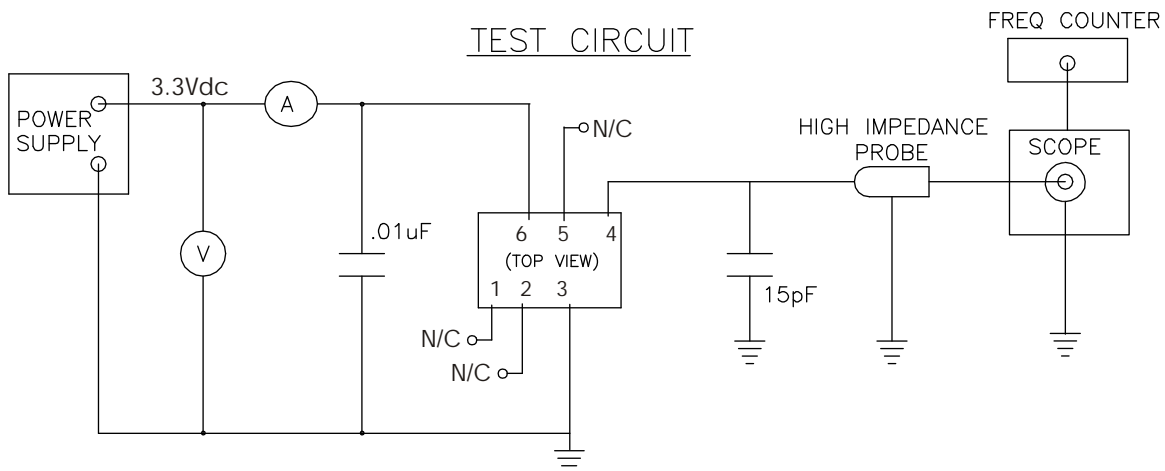
OUTPUT WAVEFORM



SUGGESTED PAD LAYOUT



TEST CIRCUIT



Specifications subject to change without notice.