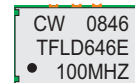


CRYSTAL CONTROLLED OSCILLATORS

3.3V SURFACE MOUNT LVCMOS TCXO WITH TRI-STATE ENABLE / DISABLE



TFLD646E

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	
Input Voltage		-0.5	-	Vcc+0.5	Vdc	

OPERATING SPECIFICATIONS

TABLE 2.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	12.80	-	156.25	MHz	
Frequency Calibration @ 25°C		-1.5	-	1.5	ppm	
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	25	mA	
Period Jitter		-	3	5	ps rms	
Phase Jitter (BW=12kHz to 20MHz)		-	0.5	1	ps rms	

PHASE NOISE CHARACTERISTICS

TABLE 3.0

Typical Phase Noise Measurements @		12.8	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	

INPUT CHARACTERISTICS

TABLE 4.0

Enable Voltage (High)	(Vih)	70%Vcc	-	-	Vdc	2
Disable Voltage (Low)	(Vil)	-	-	30%Vcc	Vdc	

LVCMOS 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)	-4	-	-	mA	
(Low)	(Iol)	-	-	4	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

Soldering Process	RoHS compliant, lead free. 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, 20 years aging.
- 2) Oscillator output is enabled with no connection on pad 1. Output is at high impedance when disabled.

DESCRIPTION

The Connor Winfield TFLD646E is a Surface Mount Fixed Frequency Temperature Compensated Crystal Oscillator (TCXO). Operating at 3.3Vdc, the TFLD646E will maintain ± 4.6 ppm frequency tolerance for 20 years over the Industrial Temperature Range. The TFLD646E is offered in a surface mount package for automated assembly.

FEATURES

- 3.3V OPERATION
- OVERALL FREQUENCY TOLERANCE: ± 4.6 ppm OVER 20 YEARS.
- TEMPERATURE RANGE: -40 to 85°C
- LOW JITTER <1ps RMS
- TRI-STATE ENABLE / DISABLE FUNCTION
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING
- RoHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

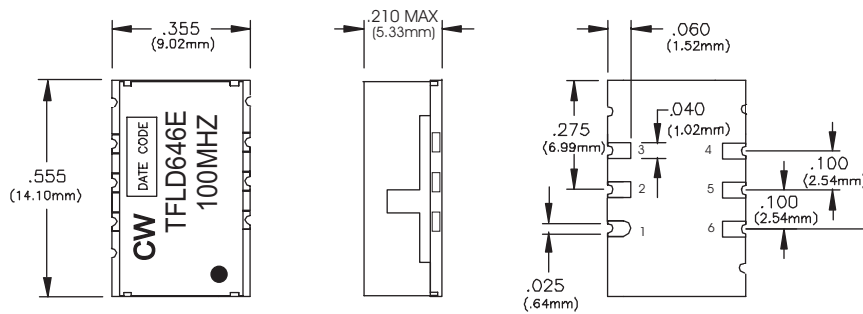
TFLD646E - 100.0M



Specifications subject to change without notice.

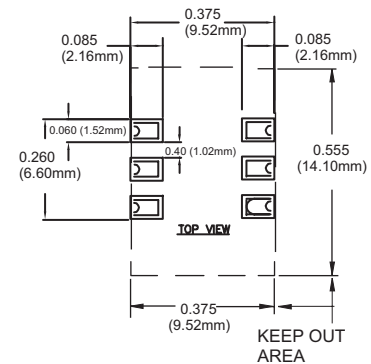
CRYSTAL CONTROLLED OSCILLATORS

Package Layout

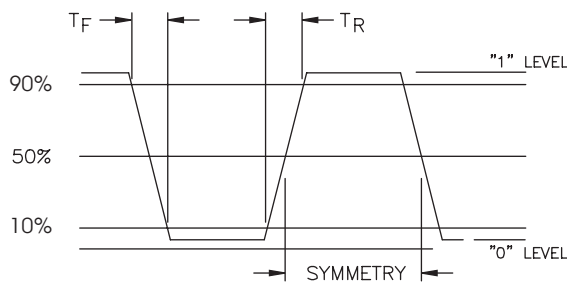


Dimensional Tolerance:
±.005 (.127mm)

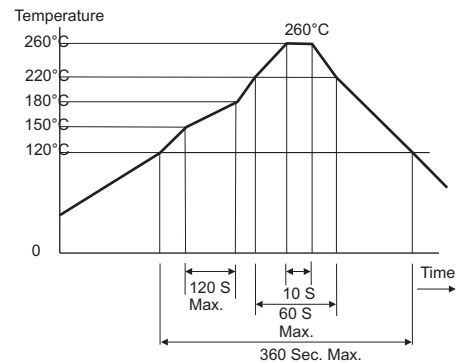
Suggested Pad Layout



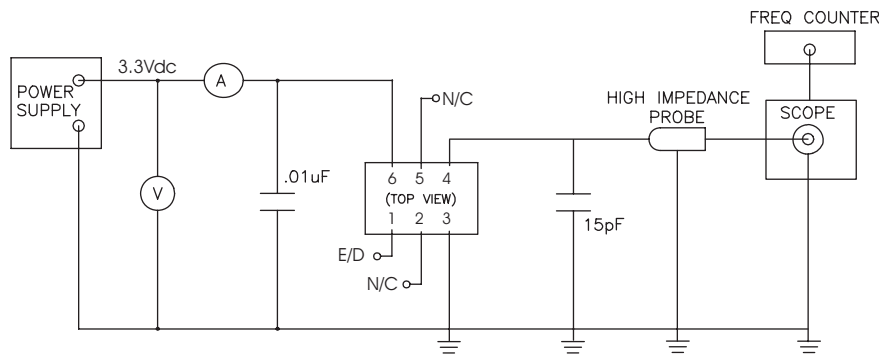
Output Waveform



Solder Profile



Test Circuit



Pin Connections

TABLE 8.0

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