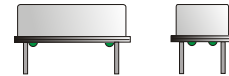


CRYSTAL CONTROLLED OSCILLATORS

3.3V HCMOS TCXO 14 Pin DIP Crystal Oscillator



HTFL-Series

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-40	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	7	Vdc	

MODEL SPECIFICATIONS

TABLE 2.0

MODEL HTFL2

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	.110	-	50	MHz	
Frequency Stability vs. Change in Temperature		-1.0	-	1.0	ppm	
Operating Temperature Range		0	-	50	°C	
Total Frequency Tolerance		-8.5	-	8.5	ppm	1

MODEL SPECIFICATIONS

MODEL HTFL3

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	.110	-	50	MHz	
Frequency Stability vs. Change in Temperature		-2.5	-	2.5	ppm	
Operating Temperature Range		0	-	70	°C	
Total Frequency Tolerance		-10.0	-	10.0	ppm	1

MODEL SPECIFICATIONS

MODEL HTFL4

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Range	(Fo)	.110	-	50	MHz	
Frequency Stability vs. Change in Temperature		-5.0	-	5.0	ppm	
Operating Temperature Range		-30	-	70	°C	
Total Frequency Tolerance		-12.5	-	12.5	ppm	1

OPERATING SPECIFICATIONS

TABLE 3.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Frequency Calibration @ 25°C		-2.5	-	2.5	ppm	2
Frequency Aging First Year		-2.0	-	2.0	ppm	
Frequency Aging Ten Years (Including first year)		-5.0	-	5.0	ppm	
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	
Typical Phase Noise						
SSB Phase Noise at 10Hz offset		-	-70	-	dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-100	-	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	

HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

PARAMETER	UNITS	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		40	50	60	%	
Rise / Fall Time 10% to 90%		-	3	5	nS	

PACKAGE CHARACTERISTICS

TABLE 5.0

Package	Hermetically sealed, metal package.
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Note:

- 1) Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 10 years aging.
- 2) Referenced to nominal frequency

DESCRIPTION

The Connor-Winfield HTFL-Series is a 3.3V HCMOS, hermetically sealed, fixed frequency, Temperature Compensated Crystal Oscillator (TCXO). The HTFL-Series is designed for applications requiring very tight frequency stability.

FEATURES

3.3V OPERATION

LOW JITTER <1ps RMS

FREQUENCY STABILITY:
HTFL2: ±1.0ppm: 0 to 50°C
HTFL3: ±2.5ppm: 0 to 70°C
HTFL4: ±5.0ppm: -30 to 70°C

HERMETICALLY SEALED DIP PACKAGE

ORDERING INFORMATION

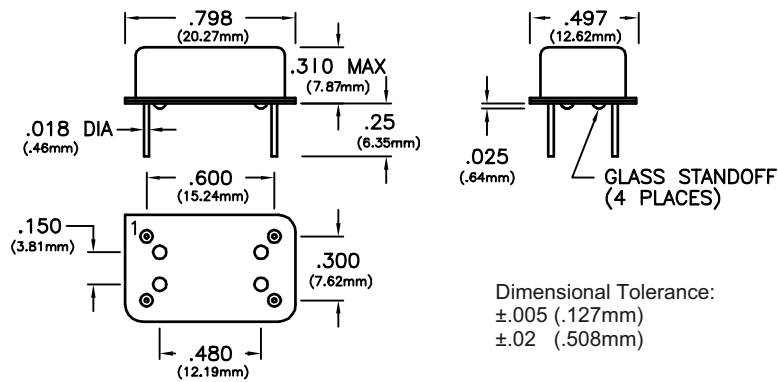
HTFL2 - 20.00MHz

TCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS



Pin	Connection
1	N/C
7	Ground
8	Output
14	Vcc

