



ETXO-H2 (2.5V) and ETXO-H3 (3.3V) low jitter, low current
SMD Temperature Compensated Crystal Oscillators
(TCXO).

ECSpresS^{CON}TM

ETXO-H HCMOS

TCXO

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OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

Parameters	Conditions	ETXO-H2 (+2.5V)			ETXO-H3 (+3.3V)			Units
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		10.000		250.000	10.000		250.000	MHz
Operating Temperature	Standard (L Option)	-30		+85	-30		+85	°C
	Extended (N Option)	-40		+85	-40		+85	°C
Storage Temperature		-55		+125	-55		+125	°C
Supply Voltage		+2.375	+2.5	+2.625	+2.97	+3.3	+3.63	VDC
Frequency Stability	Option A			±2.5			±2.5	ppm
	Option B *			±1.0			±1.0	ppm
Initial Calibration Tolerance	@ +25°C ±2°C			±1.0			±1.0	ppm
Current with output disabled			18			18		mA
Input Current	10.0 ~ 50.0 MHz			24			26	mA
	50.1 ~ 125.0 MHz			28			30	mA
	125.1 ~ 250 MHz			30			34	mA
Output Symmetry	@ 50% V _{CC} level			45/55			45/55	%
Aging	@ +25°C (per year)			±1			±1	ppm
Rise and Fall Times	10% V _{dd} to 90% Level		1.5	3.0		1.5	3.0	nS
"0" Level	VOL			10% V _{dd}			10% V _{dd}	VDC
"1" Level	VOH	90% V _{dd}			90% V _{dd}			VDC
Output Load	HCMOS			15			15	pF
Output Enable	Pin 2 **	0.7%			0.7%			V _{dd}
Output Disable	Pin 2			0.3%			0.3%	V _{dd}
Output Enable Time				200			200	ns
Output Disable Time				50			50	ns
Phase Jitter, rms	12 KHz to 20 MHz		1.0			1.0		pS
Phase Jitter, rms	1.875 MHz to 20 MHz		<400			<400		fs
Frequency Stability	Voltage Change (±5%)			±0.2			±0.2	ppm
	Load Change (±10%)			±0.2			±0.2	ppm
	Reflow (1 reflow after 24 hours)			±1.0			±1.0	ppm
MSL				1				

*Note: Consult ECS for availability

**Note: Internal pull-up resistor active output if pin 2 is left open.

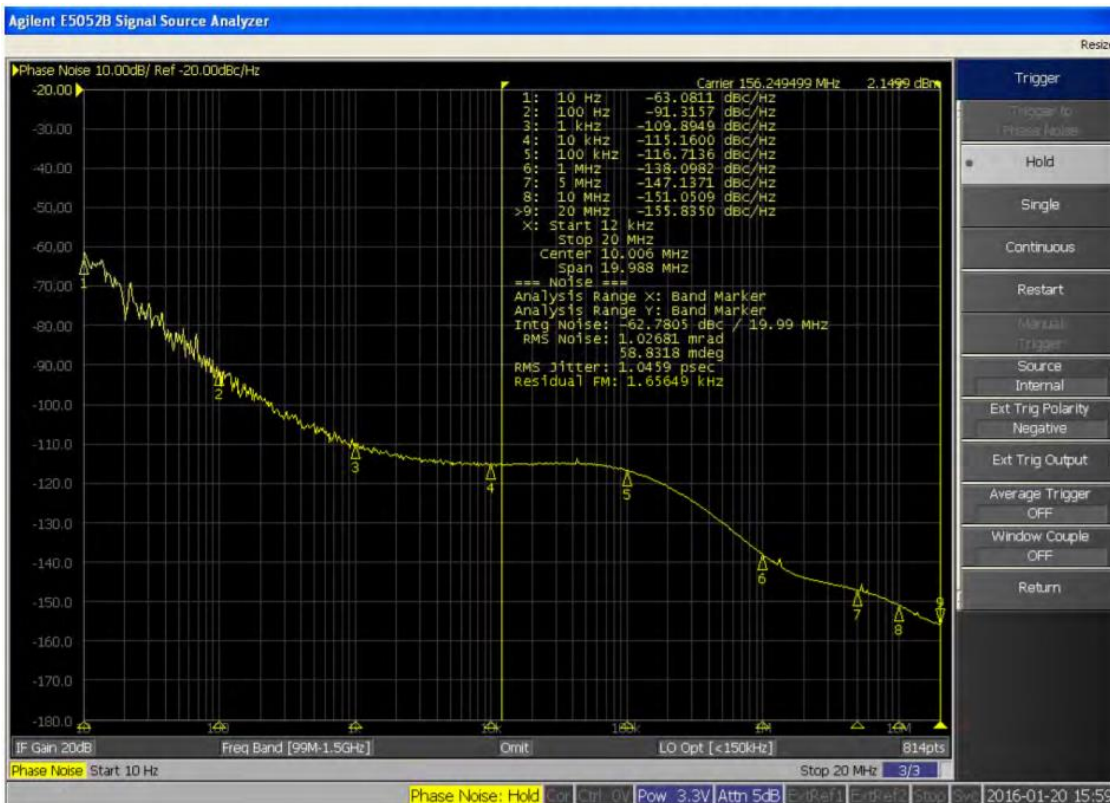
Part Number Guide: Example ETXO-H33CL-100.000

Series	Voltage	Package Size (mm)	Stability	Operating Temperature	Frequency
ETXO-H (HCMOS Output)	2 = +2.5V 3 = +3.3V	3 = 3.2 x 2.5	B = ± 1.0 ppm* C = ± 2.5 ppm	L = -30 ~ +85°C M = -20 ~ +70°C N = -40 ~ +85°C	Customer Specified

Phase Noise and Jitter Data (typical)

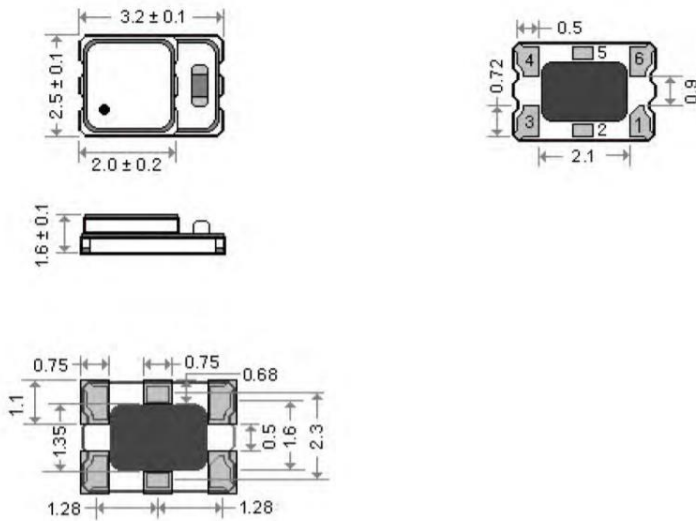
SSB Phase Noise Data (dBc/Hz typical)	Frequency (offset)	77.760	122.880	125.00	156.250	212.5
	10 Hz	-64	-68	-63	-63	-62
	100 Hz	-84	-99	-94	-91	-93
	1 KHz	-118	-113	-113	-109	-105
	10 KHz	-128	-119	-118	-115	-113
	100 KHz	-137	-120	-119	-116	-115
	1 MHz	-145	-140	-137	-138	-135
	5 MHz	-152	-142	-146	-147	-143
Phase Jitter pS 12 KHz ~ 20 MHz, RMS		0.9	0.8	1.1	1.0	1.0

Phase Noise Plot of ETXO-H33CL-156.250 (typical)



Package Data	
Item	Description
Lid	Metal
Base	Ceramic
Plating	Gold/Nickel Surface/Under

Dimensions (mm)



Pin Connections	
Pin #	Function
1	No Connect
2	Output Enable
3	Ground
4	Output
5	No Connect
6	Supply Voltage

Figure 1) Top, Side, Bottom & Land