

Reference OCXO Module in Aluminum Case



119.4 x 99.1 x 36.1 mm
Datasheet #1942A

Features

- Extraordinary Low Phase Noise Featuring -171dBc/Hz at 1kHz offset TYP
- Internally Locked to Precision 10 MHz OCXO with Excellent Temperature Stability and Aging
- External Reference is Optional

Applications

- Radar
- Test and measurement
- Instrumentation
- COTS/Dual use

Absolute Maximum Ratings

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
Input Break Down Voltage	Vcc		-0.5		6.5	V	
Storage temper.	Ts		-55		85	°C	
Control Voltage	Vc		-1		10	V	

Electrical

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
Frequency	F100 F10			100 10		MHz	
Frequency Stability	$\Delta F/F$	vs. Temp.		± 5		ppb	See table below
		vs. Supply			1	ppb/5% change	
		vs. Load			1	ppb/5% change	
Aging		per day per first year 10 years		5E-10 5E-8	0.3	ppm	After 30 days of continuous operation
Allan Deviation		.01s to 1s		5E-13			
SSB Phase Noise 100 MHz OUT	$\xi(\Delta f)$	10 Hz		-115		dBc/Hz	
		100 Hz		-145			
		1KHz		-171			
		10KHz		-185			
		≥ 100 KHz		-190			
SSB Phase Noise 10 MHz OUT	$\xi(\Delta f)$	1 Hz		-120		dBc/Hz	Internal Reference Only
		10 Hz		-148			
		100 Hz		-160			
		1KHz		-168			
		10KHz		-170			
		≥ 100 KHz		-172			
Retrace		After 30 minutes		± 10		ppb	
G-sensitivity		worst direction			± 0.5 ± 1.0	ppb/G	
Input Voltage	Vcc		4.9	5.0	5.5	V	
Power consumption	P	steady state, 25°C start-up		6.0 18	7.5 20	W	Still air
Spectral Purity		Output power		18 10		dBm dBm dBc	100MHz 10MHz 100MHz Non-supply related
		Subharmonics			-80		
		Spurious			-80		
		Harmonics		-35	-30		

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Electrical(cont.)

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
Load		50 Ohm (Internally AC-coupled)					
Warm-up time	τ	to 0.1ppm accuracy		5	8	minutes	During warm-up the output signal can be scrambled, jittery, and not usable altogether
Output Waveform		Sine Wave					
Control voltage	V _c		0		4.5	V	Slope option "P"
Setability			2.0	2.25	2.5	V	Slope option "P"
Pull range		from nominal F	±0.4			ppm	
V _c Rate of Change					0.1	V/s	
Modulation Bandwidth	MBW				0.1	Hz	Due to internal PLL loop bandwidth about 1 Hz
Absolute Pull Range	APR	Over all conditions	±0.1			ppm	
External Reference		Sine Wave	+10			dBm	
Reference Select			Automatically switches to External Reference once present				

Environmental and Mechanical

Parameter	Description
Operating temp. range	0 to 70 °C Standard, Other options TBD
Mechanical Shock	Per MIL-STD-202, 30G, 11ms survival
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A survival
Vibration	Per MIL-STD-202, 5G to 2000 Hz survival
Soldering Conditions	260°C for 10s Max leads only

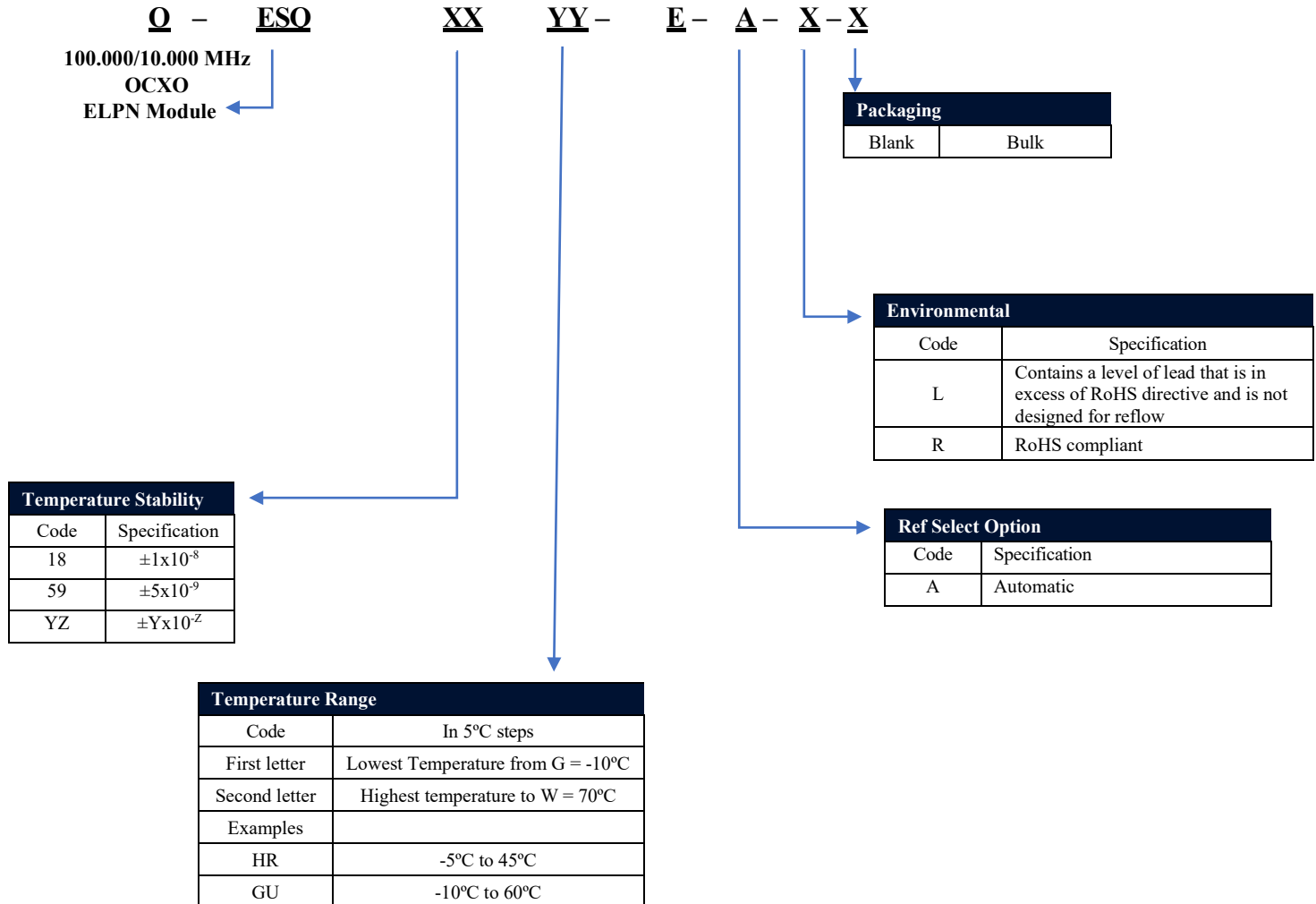
Inputs

- External 10 MHz IN - SMA Female
- V_{cc} – Feedthrough
- V_c – Feedthrough

Outputs

- 100 MHz OUT - SMA Female
- 10 MHz OUT - SMA Female

Creating a Part Number

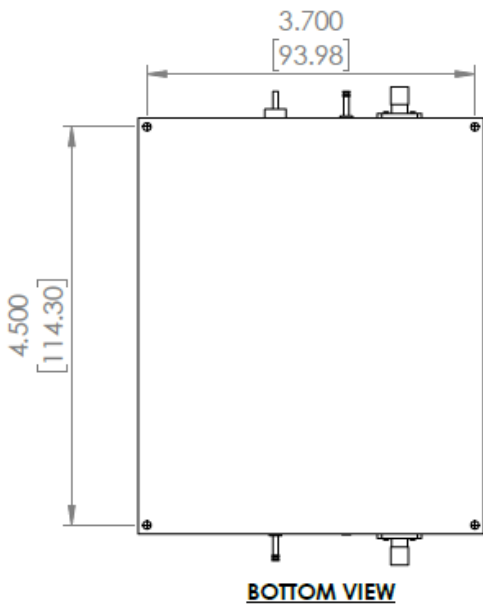
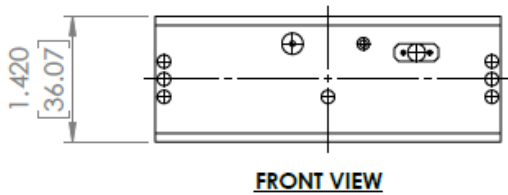
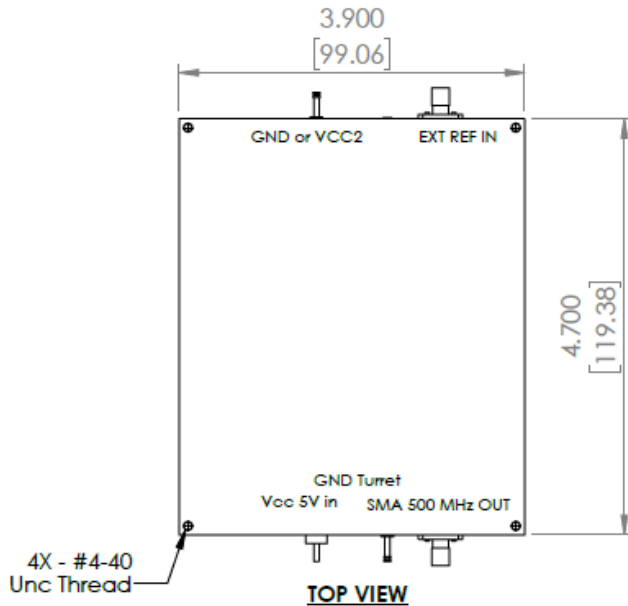


Not all combinations are available. Consult Factory.

Temperature Code Table

Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C	Letter	Temp °C
A	-40	F	-15	K	10	P	35	U	60	Z	85
B	-35	G	-10	L	15	Q	40	V	65		
C	-30	H	-5	M	20	R	45	W	70		
D	-25	I	0	N	25	S	50	X	75		
E	-20	J	5	O	30	T	55	Y	80		

Mechanical Dimensions



Dimensions: inches [mm]

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Phase Noise Plot

