



### Features and Benefits

- Extended Industrial Operating Temperature Range -55°C to +125°C
- Low jitter and phase noise (25ps Pk – Pk Period jitter, typical)
- Tri-state enable / disable
- Tight symmetry (45 to 55% available)

### Typical Applications

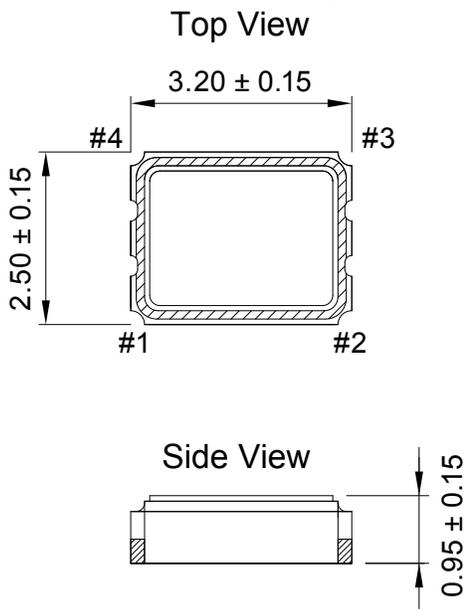
- Extreme environment applications
- Commercial space, car / aircraft engine
- Oil drilling, geothermal
- Industrial Instrumentation

### Description

XO3225S-ET-3 offers superior operating temperature, along with low jitter and low phase noise in a single package, suitable for extreme environment applications such as oil drilling, geothermal, commercial engines, and industrial instrumentation.

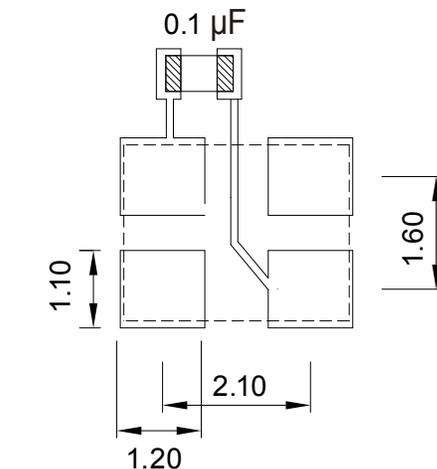
### Mechanical Drawing & Pin Connections

Drawing No: MD160027-3



Pin#	Function
1	Tri-state
2	GND
3	Output
4	VDD

Unit in mm  
1mm = 0.0394 inches



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.



Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency Range	F		1.25		100.00	MHz	
Duty Cycle			45		55	%	
Output Waveform			CMOS				
Output Load			15			pF	
Output High (Logic "1")			2.97			V	
Output Low (Logic "0")					0.33		
Rise Time / Fall Time	Tr / Tf	Measured between 10% <-> 90% of VDD			3	nsec	
Start Time					2	msec	
Tri-state (Input to Pin 1)		Enable (high voltage or floating) Disable (low voltage or GND)	2.31		0.99	V	
Period Jitter	pk-pk				40	psec	
RMS Phase Jitter		Integrated 12 KHz ~ 20 MHz			1	psec	
<b>Power Supply</b>							
Supply Voltage	V <sub>DD</sub>	±10%		3.3		V	
Supply Voltage Variations	V <sub>DD</sub>	±10%	2.97		3.63	V	
Supply Current		F <sub>O</sub> ≤ 80 MHz			10	mA	
		F <sub>O</sub> > 80 MHz			15		
<b>Frequency Stability</b>							
Frequency Stability		Inclusive of calibration at +25°C, operating temperature range, input voltage variation, load variation, aging (1 <sup>st</sup> year), shock and vibration	Refer to ordering options				
Aging		@+25°C 1st year			±3	ppm	
<b>Environmental Conditions</b>							
Operating temperature range	Refer to ordering options						
Storage temperature range	-55°C to +125°C						

Ordering Options: Operating Temperature and Frequency Stability

Operating Temperature (w)		Frequency Stability (z)	
Code	Operating Temperature [°C]	Code	Stability [ppm]
1	-40 ~ +85	1	±30
2	-40 ~ +105	2	±40
3	-40 ~ +125	3	±50
4	-55 ~ +125		

Not all combinations of temperature range and stability are available. Please consult DEI for details.



### Ordering Options Availability

Frequency Stability [ppm]	Operating Temperature Range [°C]			
	-40 ~ +85	-40 ~ +105	-40 ~ +125	-55 ~ +125
±30	Available	Conditional	Not Available	Not Available
±40	Available	Available	Conditional	Conditional
±50	Available	Available	Available	Available

Not all combinations of temperature range and stability are available. Please consult DEI for details.

### Ordering Codes

Model	Frequency in MHz (up to 4 digits)	Operating Temperature	Frequency Stability
XO3225S-ET-3	xx.yyyy	w	z

Example:XO3225S-ET-3-30.0000-2-2 has the following specifications

Operating Frequency = 30.0000 MHz  
 Operating Temperature = -40°C to +105°C  
 Frequency Stability = ±40 ppm