

Rev. A

**OE-X8GXXXXX Series  
HF/UHF OCXO Low Power**

**Description:** The OE-X8GXXXXX Series of Oven Controlled Crystal Oscillators (OCXO) provides High and Ultra High Frequency with SC-cut stability performance, extremely low phase noise and power consumption, with variety of different output types in a standard 1.4x1” package – “Europack”.

**Features**

- Very Low Power Consumption
- Very Low Phase Noise
- Excellent SC-cut Frequency Stability
- Ultra High Frequency – up to 1 GHz
- CMOS, Sine-Wave outputs available
- Stratum3E available



**Creating a Part Number**



**FREQUENCY  
CONTROLS, INC.**

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# CRYSTAL OSCILLATORS

Data Sheet 0635D

## OE-X8GXXXXX Series HF/UHF OCXO Low Power

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### Specifications

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
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#### Absolute Maximum Ratings

Input Break Down Voltage	V <sub>cc</sub>		-0.5		5.5	V	
Storage temp.	T <sub>s</sub>		-40		85	°C	
Contr. Voltage	V <sub>c</sub>		-1		9	V	

#### Electrical

Frequency Range	F	CMOS Sine-wave	30 30		200 1,000	MHz	
Input Voltage	V <sub>cc</sub>		3.135 4.75	3.30 5.0	3.465 5.25	V	3 5
Input Current	I <sub>cc</sub>				90 160	mA	@ 100 MHz, 3.3V @ 622 MHz, 3.3V
Frequency Stability	ΔF/F	vs. Temperature vs. V <sub>cc</sub> aging		±50 ±2 ±0.1 ±0.5		ppb ppb/V ppm/year ppm	See chart First Year 15 years
Calibration	ΔF/F	As shipped, 25°C		±0.1		ppm	
Load		CMOS Sine			15pF/10KOhm Internally AC-coupled 50 Ohm		
Duty cycle		@50%	45	50	55	%	CMOS
Rise/Fall time	Tr/Tf	20 to 80 %		3		ns	CMOS
Logic "1" level	V <sub>oh</sub>	CMOS	0.9V <sub>cc</sub>			V	
Logic "0" level	V <sub>ol</sub>	CMOS			0.1V <sub>cc</sub>	V	
Output power	P	Sinewave Into 50 Ohm	0 4	3 7		dBm	3.3V 5.0V
Start up time	T <sub>s</sub>			2	10	ms	
Phase jitter		1σ		0.4 0.2	1 0.4	ps	100 Hz to 20 MHz 12 KHz to 20 MHz
Subharmonics		Sine CMOS, Sine		-45	-40 none	dBc	F>250MHz F< 250 MHz
Spurious					-60	dBc	
Harmonics		Sine-wave		-30	-25	dBc	
SSB Phase Noise		@10 Hz @100 Hz @1 KHz @10 KHz @100 KHz		-100 -125 -140 -160 -165		dBc/Hz	@100 MHz
SSB Phase Noise		@10 Hz @100 Hz @1 KHz @10 KHz @100 KHz		-80 -100 -120 -145 -150		dBc/Hz	@622 MHz; Sine
Input Impedance				> 10KOhm			
Control voltage	V <sub>c</sub>		0		3.3	V	
Modulation bandwidth	MB		100 Hz				Contact Factory for wider MB
Deviation		V <sub>c</sub> =0V to 3.3V, 25°C	±0.5	±1.0		ppm	



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*Environmental and Mechanical*

<b>Operating temp. range</b>	0°C to 70°C , -40°C to 85°C, see chart, page 1
<b>Mechanical Shock</b>	Per MIL-STD-202, Method 213, Cond. E
<b>Thermal Shock</b>	Per MIL-STD-883, Method 1011, Cond. A
<b>Vibration</b>	Per MIL-STD-883, Method 2007, Cond. A
<b>Soldering Conditions</b>	260°C for 10 s leads only
<b>Hermetic Seal</b>	Leak rate less than $5 \times 10^{-8}$ atm.cc/s of helium

*Electrical Connections*

<b>Pin Out</b>	Pin #1- Voltage Control ; Pin #2 – Vref ; Pin #3 – Vcc; Pin#4 – Output, CMOS or Sine; Pin#5 - GND
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