

**O-C25-XXXXXXXX-X-**  
**Very Low Phase Noise Precision SC-cut**  
**HF OCXO in 20x20 mm Through Hole Package**

Rev. D

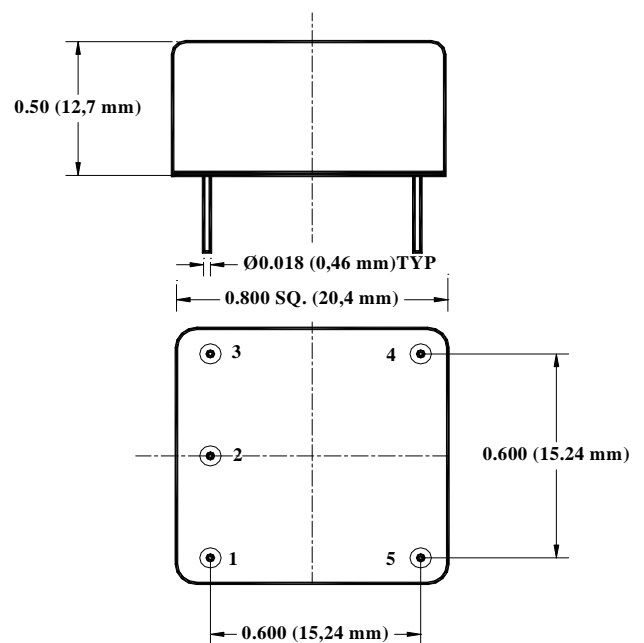
## Product Data Sheet

### Features

- SC-cut crystal
- Ultra Low Phase Noise
- Sine Wave +17 dBm output
- Very small 20x20 mm package

### Applications

- Telecommunication Systems
- Data Communications
- Radar
- Instrumentation
- High End Synthesizers



Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
<b>Absolute Maximum Ratings</b>							
<b>Input Break Down Voltage</b>	Vcc		-0.5		13.0	V	Vcc option F
			-0.5		6.5		Vcc option 0
<b>Storage temper.</b>	Ts		-55		85	°C	
<b>Control Voltage</b>	Vc		-1		10	V	

**Electrical (1)**

<b>Frequency</b>	F		80		120	MHz		
<b>Frequency stability</b>	$\Delta F/F$	vs. Temp.		$\pm 50$		ppb	See table below	
		vs. Supply			2	ppb/5% change		
		Vs. load			2	ppb/5% change		
<b>Aging</b>		per day per first year 10 years		5E-9 5E-7	2.0	ppm	After 30 days of continuous operation	
<b>Allan Deviation</b>		.01s to 1s		5E-11				
<b>SSB Phase Noise at 100.000 MHz</b>	$\xi(\Delta f)$	10 Hz		-95			dBc/Hz	Grade "L"
		100 Hz			-125			
		1 KHz				-158		
		10 KHz				-170		
		100 KHz				-178		
		10 Hz		-100				Grade "P"
		100 Hz			-130			
		1 KHz			-160			
		10 KHz			-172			
100 KHz			-178					
		10 Hz		-105			Grade "U", Available with slope option "L"	
		100 Hz			-135			
		1 KHz			-162			
		10 KHz			-175			
		100 KHz			-180			
<b>Retrace</b>		After 30 minutes		$\pm 20$		ppb		
<b>G-sensitivity</b>		worst direction			$\pm 0.5$	ppb/G		
<b>Input Voltage</b>	Vcc	12V $\pm 5\%$	11.4	12.0	12.6	V	Option "F"	
		5V $\pm 5\%$	4.75	5.0	5.25	V	Option "0"	
<b>Power consumption</b>	P	steady state, 25°C steady state, -40°C start-up		1.2 2.5 3.0	1.5 3.5	W	Still air	
<b>Spectral Purity</b>		Output power Subharmonics Spurious Harmonics	14	17 none -35		dBm dBc	Non-supply related	
<b>Load</b>	50 Ohm (Internally AC-coupled)							
<b>Warm-up time</b>	$\tau$	to 0.1ppm accuracy		3	5	minutes		
<b>Output Waveform</b>	Sine-wave							
<b>Control voltage</b>	Vc		0		10.0	V	Slope option "L"	
			0		4.5		Slope option "P"	
<b>Pull range</b>		from nominal F		$\pm 3.0$		ppm		
<b>Absolute pull range</b>	APR		$\pm 0.5$			ppm		
<b>Deviation slope</b>		Monotonic, posit		0.7		ppm/V	Slope option "L"	
				1.3			Slope option "P"	
<b>Linearity</b>			$\pm 10\%$					
<b>Reference Voltage</b>	Vref			N/A		V	Slope option "L"	
				4.5			Slope option "P"	
<b>Setability</b>	Vc0	@25°C, Fnom.	4.0	5.0	6.0	V	Slope option "L", no bias	
			1.75	2.25	2.75		Slope option "P"	
<b>Modulation Bandwidth</b>	Fm		DC		1	KHz	Note 2	

All parameters for 100.000 MHz



- Note: 1. All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°C, Nominal Vcc & Nominal Load.  
 2. Older and stock units may have MBW at 150 Hz Max.

**Environmental and Mechanical**

<b>Operating temp. range</b>	0 to 70°C Standard, Other options – see Chart below
<b>Mechanical Shock</b>	Per MIL-STD-202, 30G, 11ms
<b>Thermal Shock</b>	Per MIL-STD-883, Method 1011, Condition A
<b>Vibration</b>	Per MIL-STD-202, 5G to 2000 Hz
<b>Operational vibration</b>	Phase noise under vibration to be verified by the customer
<b>Seal</b>	Per MIL-STD 883, Method 1014, Cond A and Cond C
<b>Soldering Conditions</b>	260°C for 10s Max leads only

**Electrical Connections**

<b>Pin Out</b>	Pin #1-- Vc; Pin#2 – N/C; Pin #3 – Vcc; Pin #4 – Output; Pin #5 – Case, GND
----------------	---

**Creating a Part Number**

**Q - C 25 - X X X XX XX X - X - Frequency, MHz**

OCXO

Conventional Power

**Package Code**  
25 5 pin 20x20mm

**Supply Voltage**

Code	Specification
F	12V ±5%
0	5.0V ±5%

**Control Voltage**

Code	Specification
L	0 to 10 V
P	0 to 4.5 V

**Output**

Code	Specification
S	Sinewave

**Temperature Stability**

Code	Specification
17	1x10 <sup>-7</sup>
58	5x10 <sup>-8</sup>
28	2x10 <sup>-8</sup>
YZ	Yx10 <sup>-Z</sup>

**Environmental**

Code	Specification
L	Contains a level of lead that is in excess of RoHS directive and is not designed for reflow
R	RoHS compliant, not designed for reflow

**Phase Noise Grade (see table)**

Code	Specification
L	Standard
P	Premium
U	Ultimate

**Temperature Range**

Code	In 5°C steps **
First letter	Lowest temperature from A = -40°C
Second letter	Highest temperature to Z = 85°C
Examples	
IS	0°C to 50°C
GU	-10°C to 60°C
EW	-20°C to 70°C

**\*\*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		

Note: Not all combinations are available – consult factory

