

## 01060HL

## Precision SC-cut OCXO in 1"x1" Through Hole Package

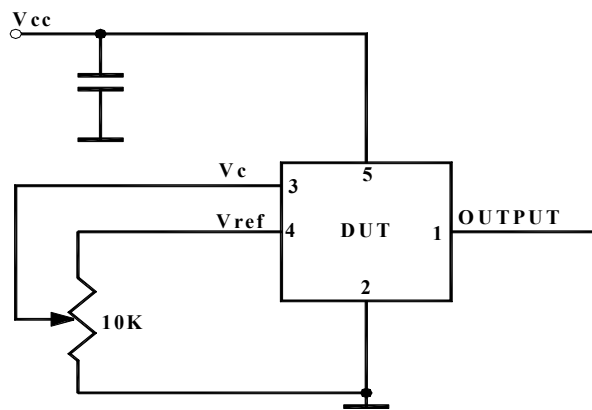
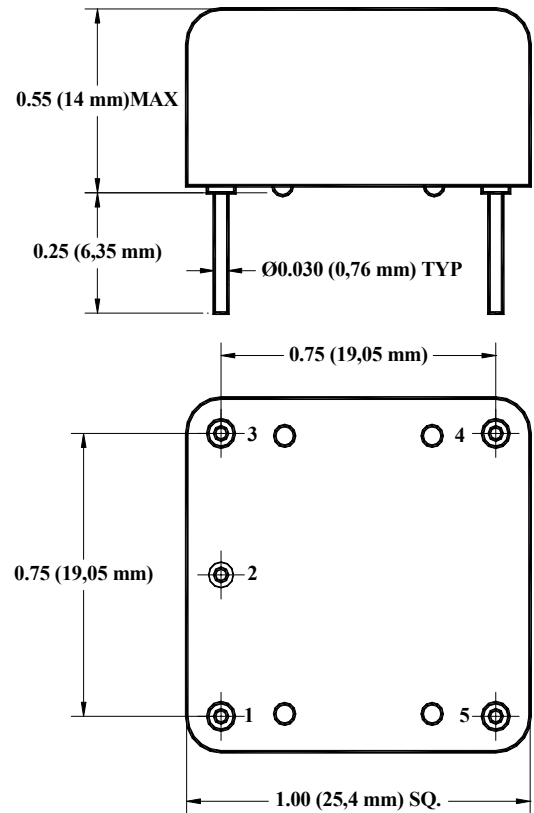
### Product Data Sheet

### Features

- SC-cut crystal
- High Stability (from 5 ppb)
- Low Aging ( $5 \times 10^{-10}$ /day)
- Very Low Phase Noise (-135 dBc/Hz @ 10 Hz)

### Applications

- Instrumentation
- Telecommunication Systems
- Data Communications
- GPS
- COTS/Dual use



**01060HL**

Rev. C

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
<b>Absolute Maximum Ratings</b>							
<b>Input Break Down Voltage</b>	V <sub>cc</sub>		-0.5		13.0	V	V <sub>cc</sub> = 12 V
<b>Storage temper.</b>	T <sub>s</sub>		-40		85	°C	
<b>Control Voltage</b>	V <sub>c</sub>		-1		12	V	
<b>Electrical (3)</b>							
<b>Frequency</b>	F			10.000		MHz	
<b>Frequency stability</b>	$\Delta F/F$	vs. Temp., total excursion		20		ppb	Peak-to-peak
		vs. Supply		1	2	ppb/5%V <sub>cc</sub>	
<b>Aging</b>		per day per year, first year 10 years		5E-10 1E-7	3.5E-7		after 30 days 5E-8 available1*
<b>Allan Variance</b>		.1s to 1s		5E-12			
<b>SSB Phase Noise</b>		1Hz		-105	-100	dBc/Hz	2*
		10 Hz		-140	-135		
		100 Hz		-156	-155		
		1 KHz		-163	-162		
		10 KHz		-169	-168		
		100 KHz		-170	-169		
<b>Retrace</b>		After 30 minutes			±10	ppb	24 hrs off
<b>G-sensitivity</b>		worst direction			±1.0	ppb/G	
<b>Input Voltage</b>	V <sub>cc</sub>		11.4	12.0	12.6	V	
<b>Power consumption</b>	P	steady state, 25°C		0.7	1.0	W	Standard Operating Temperature Still air
		steady state, -30°C		1.5	3.2		
		start-up @ -30°C		2.5	3.2		
<b>Spectral Purity</b>		Subharmonics		none		dBc	
		Spurious			-80		
		Harmonics		-35	-30		
<b>Load</b>		Internally AC coupled 50 Ohm					
<b>Warm-up time</b>	$\tau$	to 0.1ppm accuracy		3	5	minutes	
<b>Output Power</b>	P <sub>out</sub>	Into 50 Ohm	7	10			
<b>Control voltage</b>	V <sub>c</sub>		0		10	V	
<b>Pull range</b>		from nominal F	±0.6	±0.8		ppm	
<b>Deviation slope</b>		Monotonic, posit.		0.16		ppm/V	
<b>Input impedance</b>	Z <sub>in</sub>	At V <sub>c</sub> pin	10			KOhm	
<b>Modulation bandwidth</b>	F <sub>m</sub>		DC		1	KHz	Note 4
<b>Setability</b>	V <sub>c0</sub>	@25°C, F <sub>nom</sub> .	4.5	5.0	5.5	V	No internal bias
<b>Initial Calibration</b>		@25°C			±100	ppb	

All parameters for 10 MHz

**Environmental and Mechanical**

<b>Operating temp. range</b>	0°C to 70°C
<b>Mechanical Shock</b>	Per MIL-STD-202, 30G, 11ms
<b>Vibration</b>	Per MIL-STD-202, 5G to 2000 Hz
<b>Soldering Conditions</b>	260°C for 10s Max leads only

**Electrical Connections**

<b>Pin Out</b>	Pin #1-- Output ; Pin#2 – GND; Pin #3 – V <sub>c</sub> ; Pin #4 – V <sub>ref</sub> or N/C; Pin #5 - V <sub>cc</sub> ;
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Notes:

1. Aging rates are proportional to the operating frequency. Pull range will be adjusted accordingly to provide for lifetime possibility to set on frequency
2. Close to the carrier phase noise deteriorates with increase in frequency.
3. All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°C, Nominal V<sub>cc</sub> & Nominal Load.
4. Older and stock units may have MBW of 150 Hz Max.