

O-L25HXXXXYY-X-X-X

Precision Low Power Consumption

SC-cut OCXO in miniature 20x20 mm Package

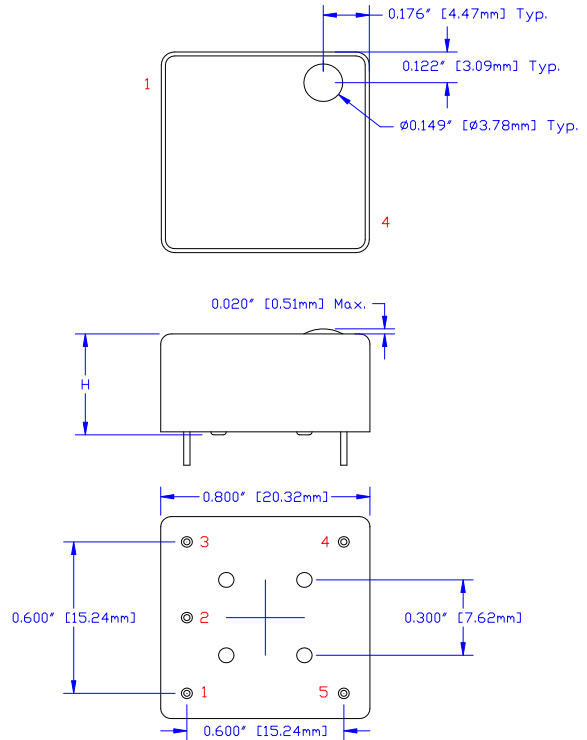
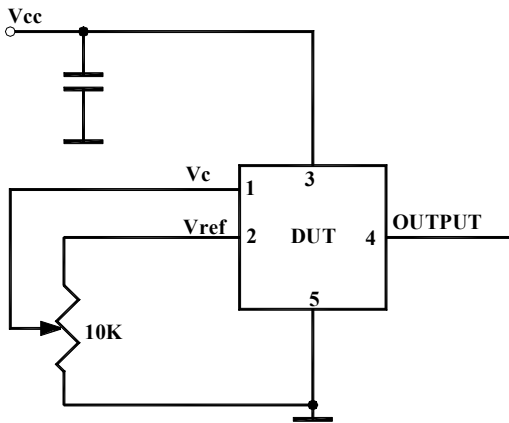
Product Data Sheet

Features

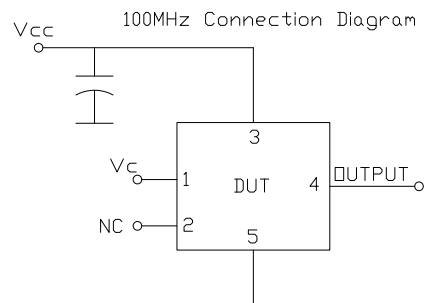
- SC-cut crystal
- Low Power Consumption
- Excellent Stability
- Fast Warm-up Time (1 minute)
- Very Low Phase Noise (-130 dBc/Hz @ 10 Hz)
- Hermetically sealed package

Applications

- Instrumentation
- Battery powered equipment
- Telecommunication Systems
- Data Communications
- GPS
- COTS/Dual use



Height, H	Code
0.4ö (10,2 mm)	4
0.5ö (12,7 mm)	5



O-L25HXXXXYY -X-X-X

Rev. N

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
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Absolute Maximum Ratings

Input Break Down Voltage	Vcc		-0.5		5.5	V	Vcc = 5 V
Storage temper.	Ts		-40		85	°C	
Operating temper.	To		-40		85	°C	
Control Voltage	Vc		-1		6	V	

Electrical (6)

Frequency	F		8.0	10.000	30.000	MHz	*
Frequency stability	ΔF/F	vs. Temp.		10		ppb	See chart below
		vs. Supply		1	2	ppb/5% Vcc	
Aging		per day per year, first year 10 years		5E-10 1E-7	3.5E-7		after 30 days 5E-8 available 1*
Allan Deviation		.1s to 1s		5E-12			
SSB Phase Noise		1Hz		-100	-98	dBc/Hz	2*
		10 Hz		-135	-130		
		100 Hz		-153	-150		
		1 KHz		-162	-160		
		10 KHz		-165	-164		
		100 KHz		-168	-165		
Retrace		After 30 minutes			±10	ppb	24 hrs off
Input Voltage	Vcc		4.75	5.0	5.25	V	See chart below to specify
			3.165	3.30	3.465		
Power consumption Still air 3*, 10MHz	P	steady state, 25°C operating temp range to 70°C start-up @ -30°C		0.6	0.7	W	Grade öNö Grade öAö Grade öXö
				0.45	0.55		
				0.3	0.4		
				2.0	2.5		
Spectral Purity		Subharmonics Spurious Harmonics		none -35	-80 -30	dBc	
Load		10KOhm//15pF (HCMOS/TTL), AC-coupled 50 Ohm (Sine-wave)					Output Code T Output Code S
Warm-up time	τ	to 0.10ppm accuracy to 0.25ppm			90 60	seconds	
Output Power			+5	+7		dBm	10 MHz, Output Code S
Logic 1 (CMOS)	Voh		0.7 Vref			V	Output Code T
Logic 0 (CMOS)	Vol				0.1 Vref	V	Output Code T
Control voltage	Vc		0		Vref	V	4*
Reference Voltage	Vref			4.5 3.0		V	5 V supply 3.3 V supply
Pull range		from nominal F, 10 MHz	±0.5 ±0.4	±0.7 ±0.5		ppm	5 V supply 3.3 V supply
Deviation slope		Monotonic, posit. 10 MHz		0.3 0.33		ppm/V	5 V supply 3.3 V supply
Input impedance	Zin	At Vc pin	10			KOhm	
Modulation bandwidth	Fm		DC		1	KHz	7*
Setability	Vc0	@25°C, Fnom.	Vref/2- 0.25	Vref/2	Vref/2 + 0.25	V	10 MHz 5*
Initial Calibration		Vc = Vref/2 @25°C			±100	ppb	10 MHz

All parameters for 10 MHz

Environmental and Mechanical

Operating temp. range	-20°C to 70°C Standard, Other options ó see chart below
Mechanical Shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 2000 Hz
Soldering Conditions	260°C for 10s Max leads only

Electrical Connections

Pin Out	Pin #1-- Vc ; Pin#2 ó Vref/NC**; Pin #3 ó Vcc; Pin #4 ó Output; Pin #5 - GND
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Notes:

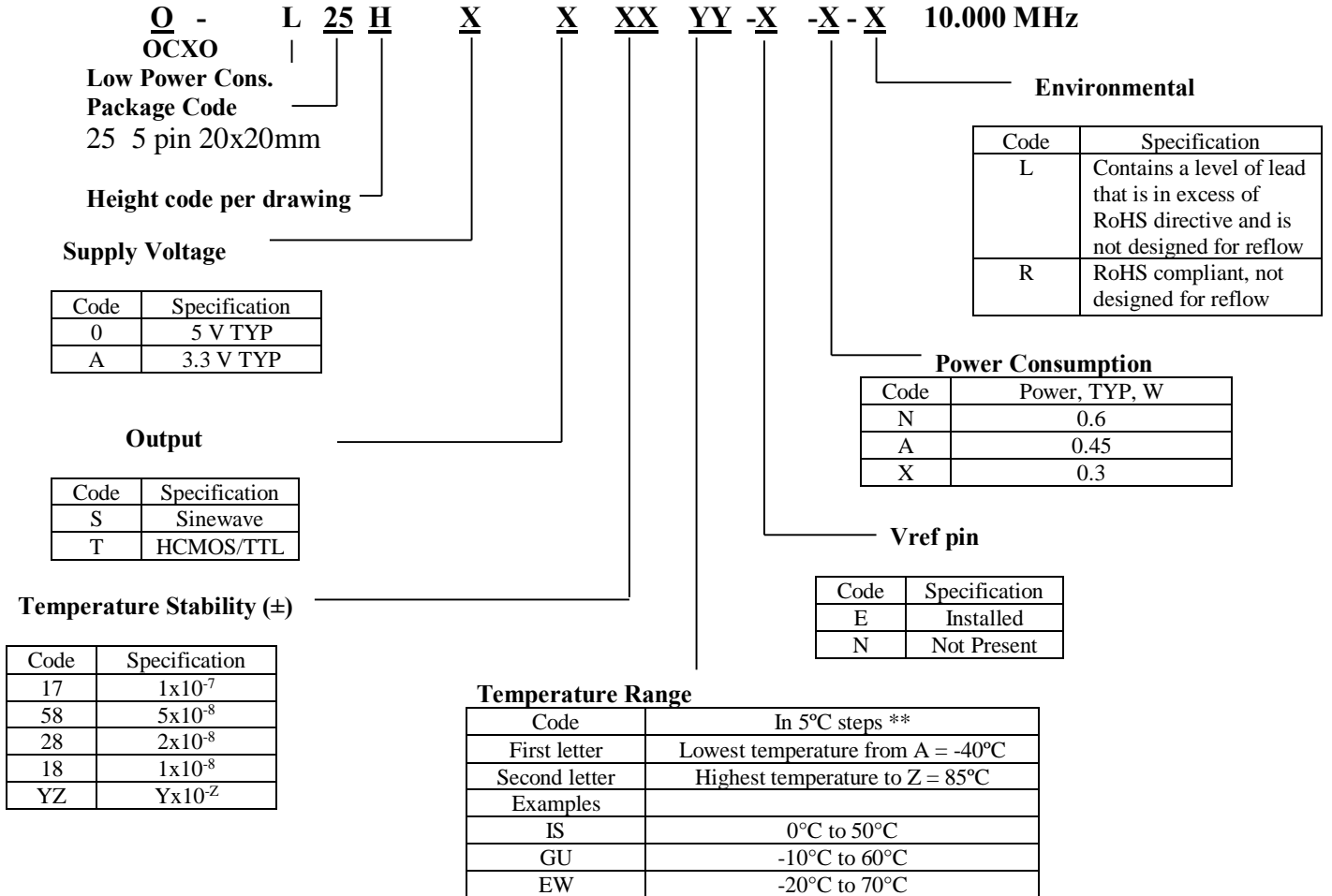
- * All the specifications for frequencies above 20 MHz are very preliminary
- 1. Aging rates are proportional to the operating frequency. Pull range will be adjusted accordingly to provide for lifetime possibility to set on frequency
- 2. Close to the carrier phase noise deteriorates with increase in frequency.
- 3. Power consumption listed in the table is for 10.000 MHz, Sine-wave output, 0.5ö height unit. With increase in upper operating temperature, the power consumption will increase about 40 mW per 5°C. CMOS output option will decrease consumption by about 25 mW. 0.4ö units will have about 5% more power consumption.
- 4. If Vref is not used for adjusting the frequency, Vc range can be increased to 5.0 V with either Vcc option.
- 5. The Vc input may or may not be internally biased to roughly Vref/2. If internal bias is needed ó it has to be specified on PO.
- 6. All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°C, Nominal Vcc & Nominal Load.
- 7. Older and stock units may have MBW of 150 Hz Max.
- 8. For higher frequency the only height option available is 5.
- **Pin 2 Consult factory for Vref availability at higher frequencies. No Vref output option may be available.



O-L25HXXXXYY -X

Rev. N

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		