

LOW NOISE CRYSTAL OSCILLATORS > STANDARD HF PLO
FEATURES:

- Frequencies from 5 MHz to 25 MHz, fixed
- Low Phase Noise Floor to -165 dBc/Hz
- PLL Loop Bandwidth as low as ≤ 0.1 Hz
- Good Temperature Stability
- Low Aging Rate

APPLICATIONS:

- Up/Down Converters
- GPS Receivers
- System Synchronization
- Test Equipment
- Instruments



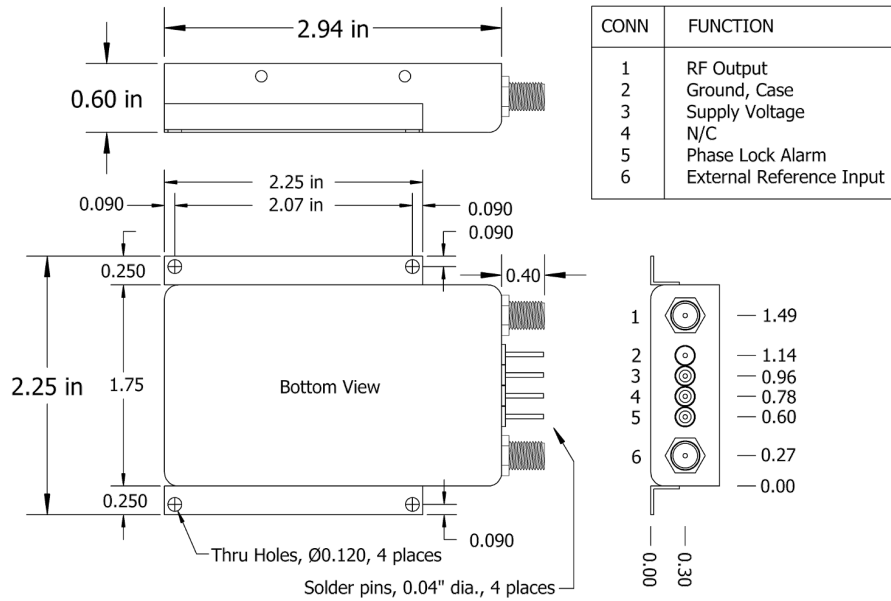
Electrical Specifications	
Output Frequency (fixed; specify within range)	5 MHz to 25 MHz
Output Level	+13 dBm ± 2 dB into 50 ohms
External Reference Input Frequency	10 MHz (standard; other options available)
External Reference Input Level	+7 dBm ± 6 dB into 50 ohms
Aging	(10 MHz model, typical)
Per day after 30 days operating, typical	5×10^{-10}
Second year, typical	5×10^{-8}
Per year thereafter, typical	3×10^{-8}
Temperature Stability (consult factory for other ranges)	(10 MHz model, typical)
Range E: 0 to +50°C (Ref: +25°C)	$\leq \pm 5 \times 10^{-9}$
Range F: -20 to +70°C (Ref: +25°C)	$\leq \pm 1 \times 10^{-8}$
Range G: -55 to +85°C (Ref: +25°C)	$\leq \pm 1 \times 10^{-7}$
Phase Noise	(Frequency Dependent: See Std Specifications and Part Numbers table below for details)
Harmonics	≤ -30 dBc
PLL & Divider Products	≤ -50 dBc
Spurious	≤ -80 dBc
PLL Loop Bandwidth	≤ 0.1 Hz or ≤ 1 Hz
Supply Voltage	+15 VDC or +12 VDC ($\pm 5\%$)
Warm-up	≤ 6 Watts for 5 minutes at +25°C
Total	≤ 2.5 Watts at +25°C
Crystal Type	SC-cut
Mechanical	
Packaging	Nickel-Plated Machined Aluminum
Dimensions	2.94" x 2.25" x 0.6"
Connectors / Mounting	SMA(f) and solder pins on side Thru Hole Mount, 0.120" diam., 4 places

DESCRIPTION:

The Standard HF PLO is a 5 MHz to 25 MHz fixed frequency OCXO integrated with a low noise phase lock loop circuit, and is ideal for use as a phase noise clean-up oscillator when phase locking to a more stable source such as a rubidium, cesium or GPS reference. The PLO offers low aging and good temperature stability (when free-running), and a low phase noise floor to -165 dBc/Hz. Frequency dividers are used to prescale the internal HF oscillator and the external reference frequencies to phase lock at a common lower frequency. The standard PLL loop bandwidth options are ≤ 0.1 Hz or ≤ 1 Hz. The PLO is housed in a 2.94" x 2.25" x 0.6" solder sealed steel can, which includes a mounting flange. An internal voltage regulator is provided for excellent power supply line rejection. Please consult the factory if you need any specifications to be modified to better suit your application.



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Standard Specifications and Part Numbers **

Part Number	Output Frequency * (MHz)	Typical Phase Noise (dBc/Hz), Static * (free-running)					Output Level (dBm) * into 50 ohms	Temperature Stability (Ref: +25°C) *	Supply Voltage (VDC)	External Reference Frequency (MHz)	Package / Connectors	Package Size (inches)
		10 Hz	100 Hz	1 kHz	10 kHz	100 kHz						
501-27506-01	10	-135	-155	-165	-165	-165	+13 ±2	±5E-9, 0° to +50°C	+15	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27506-02	10	-135	-155	-165	-165	-165	+13 ±2	±1E-8, -20° to +70°C	+15	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27506-11	10	-140	-160	-166	-168	-168	+13 ±2	±5E-9, 0° to +50°C	+15	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27506-12	10	-140	-160	-166	-168	-168	+13 ±2	±1E-8, -20° to +70°C	+15	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27506-21	10	-135	-155	-165	-165	-165	+13 ±2	±5E-9, 0° to +50°C	+12	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27506-22	10	-135	-155	-165	-165	-165	+13 ±2	±1E-8, -20° to +70°C	+12	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27506-31	10	-140	-160	-166	-168	-168	+13 ±2	±5E-9, 0° to +50°C	+12	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27506-32	10	-140	-160	-166	-168	-168	+13 ±2	±1E-8, -20° to +70°C	+12	5 or 10, LBW=0.1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-01	10	-135	-155	-165	-165	-165	+13 ±2	±5E-9, 0° to +50°C	+15	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-02	10	-135	-155	-165	-165	-165	+13 ±2	±1E-8, -20° to +70°C	+15	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-11	10	-140	-160	-166	-168	-168	+13 ±2	±5E-9, 0° to +50°C	+15	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-12	10	-140	-160	-166	-168	-168	+13 ±2	±1E-8, -20° to +70°C	+15	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-21	10	-135	-155	-165	-165	-165	+13 ±2	±5E-9, 0° to +50°C	+12	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-22	10	-135	-155	-165	-165	-165	+13 ±2	±1E-8, -20° to +70°C	+12	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-31	10	-140	-160	-166	-168	-168	+13 ±2	±5E-9, 0° to +50°C	+12	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6
501-27587-32	10	-140	-160	-166	-168	-168	+13 ±2	±1E-8, -20° to +70°C	+12	5 or 10, LBW=1 Hz	SMA(f) & Pins on Side	2.25 x 3.40 x 0.6

* Consult factory for custom frequency, phase noise performance, output level, temperature stability and acceleration sensitivity options.

** See website for additional Standard Part Numbers and Specifications.