

PLO-5000 / 5200 Series

*A COMPACT PLDRO WITH OPTION OF
INTERNAL OR EXTERNAL REFERENCE*



FEATURES

- * DIELECTRIC RESONATOR
- * INTERNAL / EXTERNAL REFERENCE
- * INTERNAL REFERENCE: PLO-5000 SERIES
- * EXTERNAL REFERENCE: PLO-5200 SERIES
- * LOW MICROPHONICS
- * UP TO +25 dBm OUTPUT POWER
- * AVAILABLE FROM 1-40 GHz
- * OPERATING RANGE: -40°C TO +85°C

APPLICATION

- * SATELLITE COMMUNICATIONS
- * CABLE TV LINKS (CATV)
- * LOCAL AREA NETWORKS (LAN)
- * GLOBAL POSITIONING SYSTEMS (GPS)
- * TEST EQUIPMENT
- * POINT TO POINT
- * UP/DOWN CONVERTERS
- * TRANSMITTER & RECEIVERS
- * DIGITAL RADIOS
- * MISSILE GUIDANCE
- * SPACE, MILITARY, COMMERCIAL

DESCRIPTION

PLO-5000 Series Phase Locked Dielectric Resonator Oscillator (PLDRO) utilizes state-of-the art MIC and SMT to provide crystal stability at microwave frequencies up to 40 GHz. The low profile and rugged construction provide excellent durability against harsh environmental conditions.

PLO-5000 oscillator is designed using FET or BJT amplifier with series feedback at source and Dielectric Resonator at the gate. High gain, low-noise FETs/BJTs are biased positively or negatively at the gate to ensure minimum phase-noise. The device is carefully matched for maximum power, minimum phase-noise and Voltage Standing Wave Ratio (VSWR). The oscillator is matched for maximum temperature stability and optimum negative resistance.

PLO-5000 oscillator is buffered by cascaded low-noise driver and power amplifiers for minimum load pulling, maximum isolation and power. FET/BJT devices are directly attached to gold plated Kovar carriers to minimize shear effect and maximize heat sinking. Kovar carriers are mounted to the chassis to provide an efficient thermal junction and a stable structure for reduction of microphonics. To ensure oscillator stability over the full temperature range, the tuning elements are precisely designed and positioned to compensate for temperature drift by a factor of three.

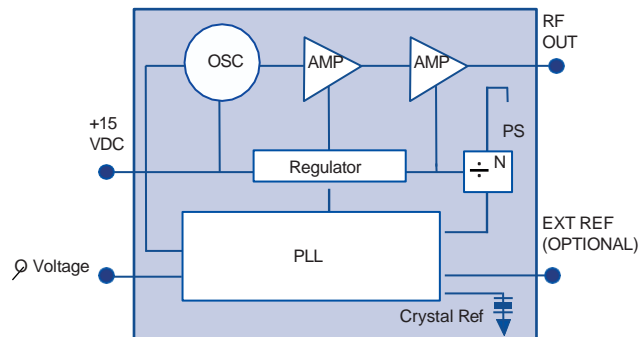
PLO-5000 series uses PLL chip which provides a variety of options. The Reference frequency up to 250 MHz with enhanced frequency resolution; integer-N and fractional-N capability. The oscillator goes up to 20 GHz fundamental frequency; frequencies with 20 to 40 GHz are accomplished with a multiplier and driver amplifier.

PLO-5000 series is internally voltage regulated to avoid reverse bias. frequency pushing, bias modulation and voltage transients. The PLO-5000 series are internally reference locked and factory tuned to specified frequency. Mechanical frequency adjustment is provided for optimum phase voltage

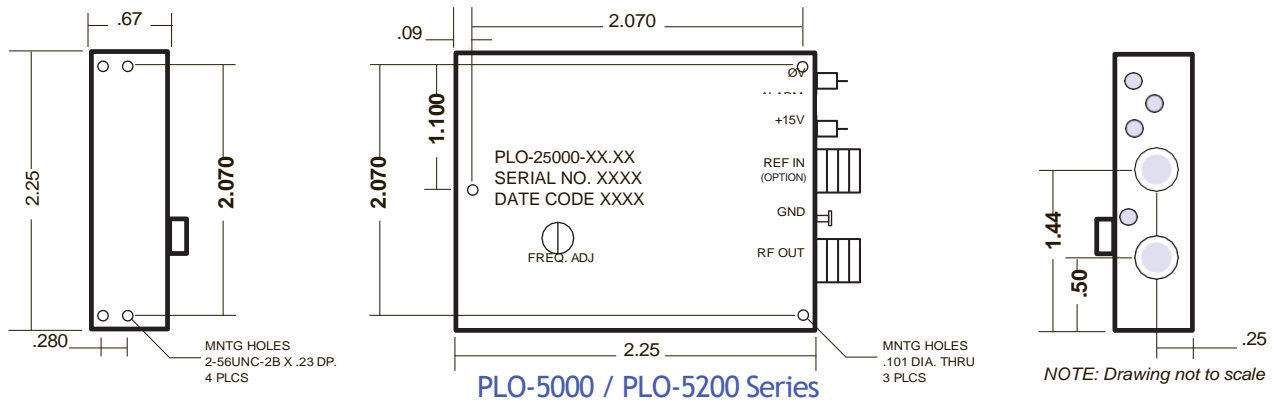
SPECIFICATIONS

Model Number	PLO-5000-XX.XX Internal Reference (Where XX.XX is freq in GHz)
Model Number	PLO-5200-XX.XX External Reference (Where XX.XX is freq in GHz)
Single Frequency	1.00 to 40.00 GHz
Mechanical Tuning Range	100 MHz
Power Output	+13 dBm, up to + 25 dBm Optional
Load VSWR, Maximum	2.0: 1.0
Power Requirements	+12VDC or +15 VDC @ 200 mA
Reference Frequency (PLO-5200)	Any value up to 250 MHz
Frequency Stability	+/- 1 ppm @ 0°C to 50°C; +/- 2.5 ppm @ -30°C to 75°C (TYP)
Phase Noise	-85 dBc/Hz @ 10 KHz (TYP)
Spurious	-80 dBc (Fractional N is higher)
Harmonics	-25 dBc
Operating Temperature	0°C to 50°C Standard; -40°C to 85°C Optional
Storage Temperature	-55°C to 125°C
Connectors	SMA-Female or 2.92 mm-Female
Size	2.25" x 2.25" .67"
Finish	Nickel

BLOCK DIAGRAM



OUTLINE DRAWING



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