

Phase Locked Oscillators

Internal Reference APL - 02 Series

- 400 MHz to 14 GHz
- Fundamental Frequency (CRO or DRO)
- Internal Reference
- Small Size
- Low Phase Noise
- Low Microphonics
- Low Current
- Custom Design



General Specifications (also see options)

Output Frequency	400 MHz to 14.0 GHz
Frequency Stability	+/-5ppm max. over 0+50C (see options)
Output Power	+13dBm min. (see options)
Output Power Stability	+/-2dB max
Harmonics	-20dBc max.
Ref. Related Spurious	-70dBc max.
Divided Ref. Related Spurious	-50dBc (400 MHz - 3.4 GHz)
Other Spurious	-80dBc max.
Load VSWR	2.5:1 max.
Input Voltage	+11 to +16V d.c. (see options)
Input Current	300mA max. (for +13dBm)
Operating Temperature	0+50C standard (see options)
Storage Temperature	-40+85C
Lock Alarm	TTL high for locked
RF Output Connector	SMA Female
Ref. Monitor Connector	SMA Female

The APL - 02 series of fundamental frequency phase locked oscillators utilise coaxial resonators (CRO) to 3.4 GHz and dielectric resonators (DRO) to 14 GHz in a phase locked loop with an internal crystal reference. Circuit design uses SMT devices including Si bipolar active devices up to 3.4 GHz and GaAs FET active devices above 3.4 GHz. The output contains a buffer amplifier for improved ruggedness, higher output power and a wider range of load VSWR. The PLOs also have a reference monitor output. DRO types have an external tuning screw for factory set up only.

Frequencies above 14 GHz are available - please contact us for more information.

Phase Noise (dBc/Hz) typical See Note 1

Offset Frequency (Hz)	Output Frequency (GHz)					
	0.6	1.5	3	4	10	14
100	-80	-73	-66	-64	-56	-53
1K	-115	-105	-100	-95	-90	-85
10K	-130	-125	-115	-110	-100	-95
100K	-135	-125	-115	-115	-110	-105
1M	-140	-140	-135	-135	-120	-115

Note 1

Phase noise specifications are dependent upon the frequency and type of the internal reference.

For a more detailed specification at your desired output frequency and stability, please contact the factory.

Options:

00 - Standard, based on 50 MHz internal crystal.

Frequency Stability/Temperature

01 - +/-5ppm max. over -10+60C

02 - +/-5ppm max. over -20+70C

03 - +/-10ppm max. over -40+85C

04 - +/-2ppm max. over +10+40C

Output Power

11 - +15dBm min. up to 10.0 GHz

12 - +15dBm min. up to 6.0 GHz

D.C. Supply

21 - Input Voltage +12V d.c.

22 - Regulated +11 to +16V d.c.

23 - +28V d.c

Custom Options:

- Higher Output Frequency to 40 GHz (multiplied)
- Higher Output Power to +30dBm (amplified)
- Lower Harmonics (filtered)
- Lock Alarm - Open Collector
- Custom Sizes
- Instrument or Rack Mount Housing with Power Supply

Model Numbers:

Examples:

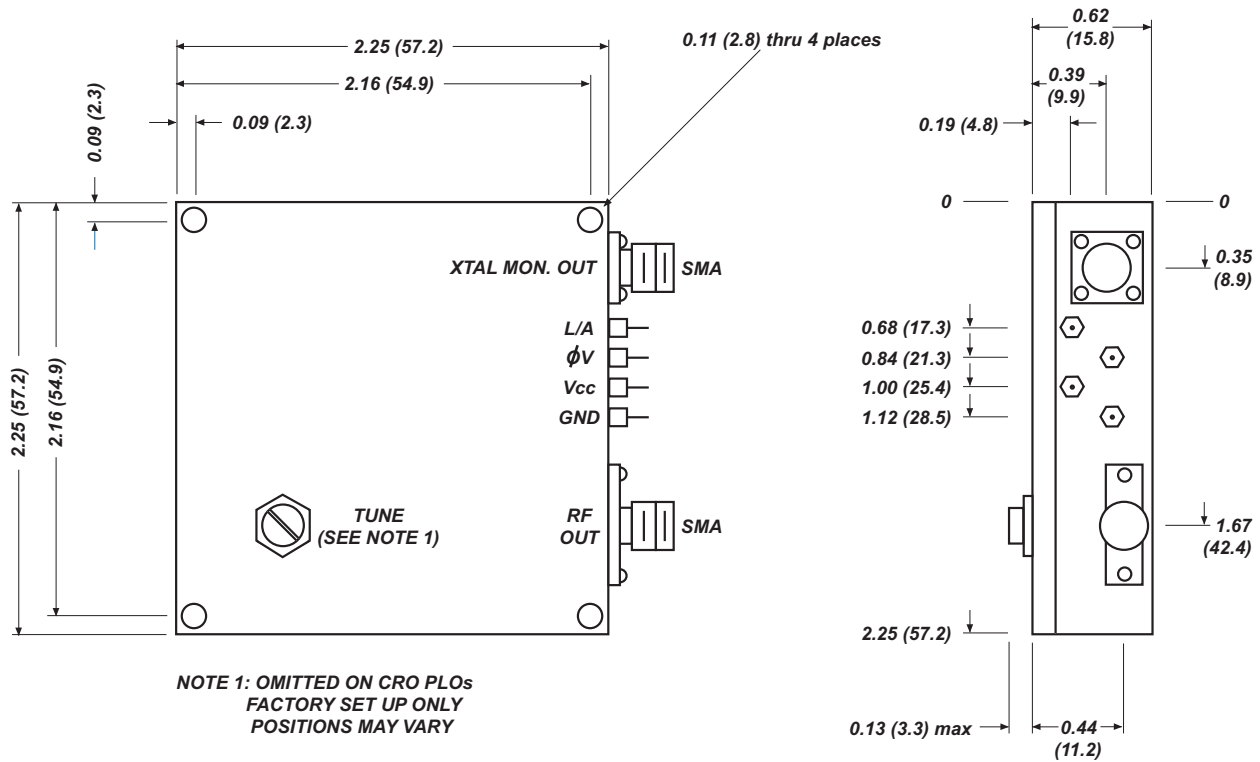
APL-02-13.050-00 13.05 GHz PLO with standard specifications

APL-02-9.750-02-11-23
9.75GHz PLO with +/-5ppm over -20+70C, +15dBm and +28V.

Oscillators

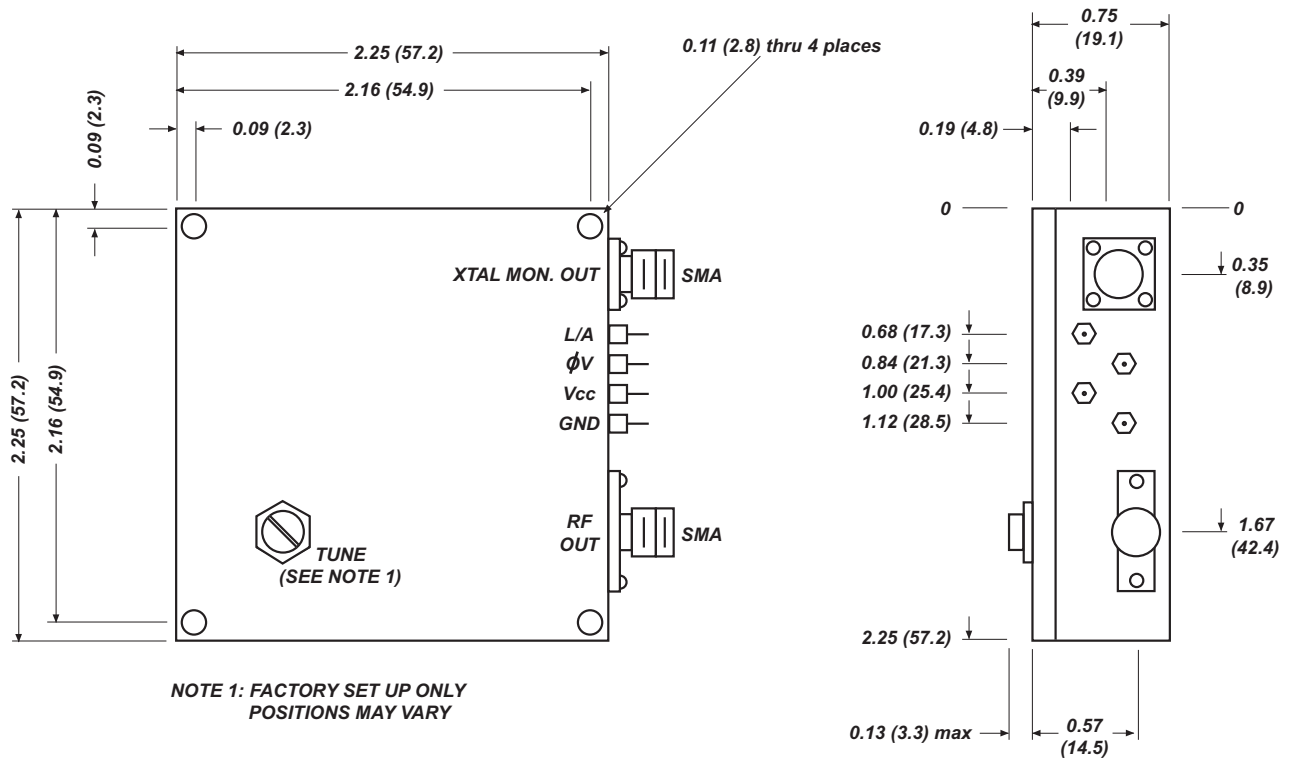
OUTLINE A

USED ON: CRO - PLOs: 0.4 TO 3.4 GHz
DRO - PLOs: 6.0 TO 14.0 GHz



OUTLINE B

USED ON: DRO - PLOs: 3.4 TO 6.0 GHz



All dimensions are inches (mm)

We reserve the right to change standard product specifications without notice but will be pleased to consider control drawings for quotation.

Oscillators

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