

## Description



The PLDRO (Phase Locked Dielectric Resonator Oscillator) provides the ultra-low phase noise and an excellent frequency stability when it is phase-locked to a clean and stable crystal reference signal. The PLDRO provides ideal signal for commercial and military systems that require ultra-low phase noise, low spurious, and high frequency stability.

Our PLDRO series are available in four series products: Single Loop PLDRO, Dual Loop PLDRO, Variable Frequency PLDRO, and Fractional-N PLDRO.

The variable frequency PLDRO series is an innovative signal generator capable of providing both the ultra low phase noise performance of the PLDRO and the excellent frequency resolution of a direct digital synthesizer. This PLDRO series covers 5 GHz to 29 GHz and output frequency can be varied in steps of 10 KHz or less within a specified bandwidth.

## Features

- Available from 5 GHz to 29 GHz
- Frequency changeable in steps of 10 KHz or less within the specified bandwidth
- Ultra Low Phase Noise
- Low Spurious
- Phase-Locked Alarm
- Compact Housing
- Rugged Construction

## Options

- Output Power: 17 dBm (typ.)
- Operating Temperature: -20 °C to +70 °C
- 100 Hz Frequency Steps
- Field Replaceable SMA-Jack
- Laser Marking

## Applications

- Radar Systems
- VSAT/Satellite Communication Systems
- Test Equipment
- Microwave Transmitters & Receivers
- Cable TV Links (CATV)
- LMDS
- Missile Guidance
- Local Area Networks (LAN)

## Specifications

Parameters		Specifications			
Output Frequency	Available Range	5 GHz to 29 GHz			
	Operating Bandwidth	Consult Factory			
	Resolution	1 KHz (min.), 10 KHz (typ.)			
Output Power		15 dBm (typ.)			
Phase Noise (dBc/Hz)	Frequency	6 GHz	10 GHz	13 GHz	27 GHz
	Offset				
	100 Hz	-92	-87	-84	-78
	1 KHz	-112	-110	-106	-100
	10 KHz	-120	-114	-112	-106
	100 KHz	-123	-115	-113	-107
External Reference	Frequency	100 MHz			
	Power	0 ± 2 dBm			
Harmonics		-30 dBc (typ.), -20 dBc (max.)			
Sub-harmonics		-25 dBc (typ.), -15 dBc (max.)			
Frequency Stability		Same as the Reference			
Spurious	External Reference	-80 dBc (typ.), -70 dBc (max.)			
	Mixer Intermodulation	-70 dBc (typ.), -60 dBc (max.)			
Pulling (3:1 VSWR) (max.)		Will not break lock			
Output Impedance		50 Ω			
Supply Voltage		12 ± 0.5 Vdc			
Current Consumption		Consult Factory			
Connectors	RF Output (RF OUT)	SMA-Jack			
	Reference Input (REF_IN)	SMA-Jack			
	Supply Voltage (Vin)	EMI Feed-thru			
	Phase Voltage (Vp)	EMI Feed-thru			
	Phase Lock-Detect (LD) <sup>Note 1</sup>	EMI Feed-thru			
	3.3 V UART TX Data (TXD)	EMI Feed-thru			
	3.3 V UART RX Data (RXD)	EMI Feed-thru			
	GND	Turret Thread Mount Terminal			
Housing Size (W x L x H)		2.25"[57.15] x 3.15"[80] x 1.157"[29.4]			
Operating Temperature		0 °C to 60 °C			
Storage Temperature		-20 °C to 70 °C			

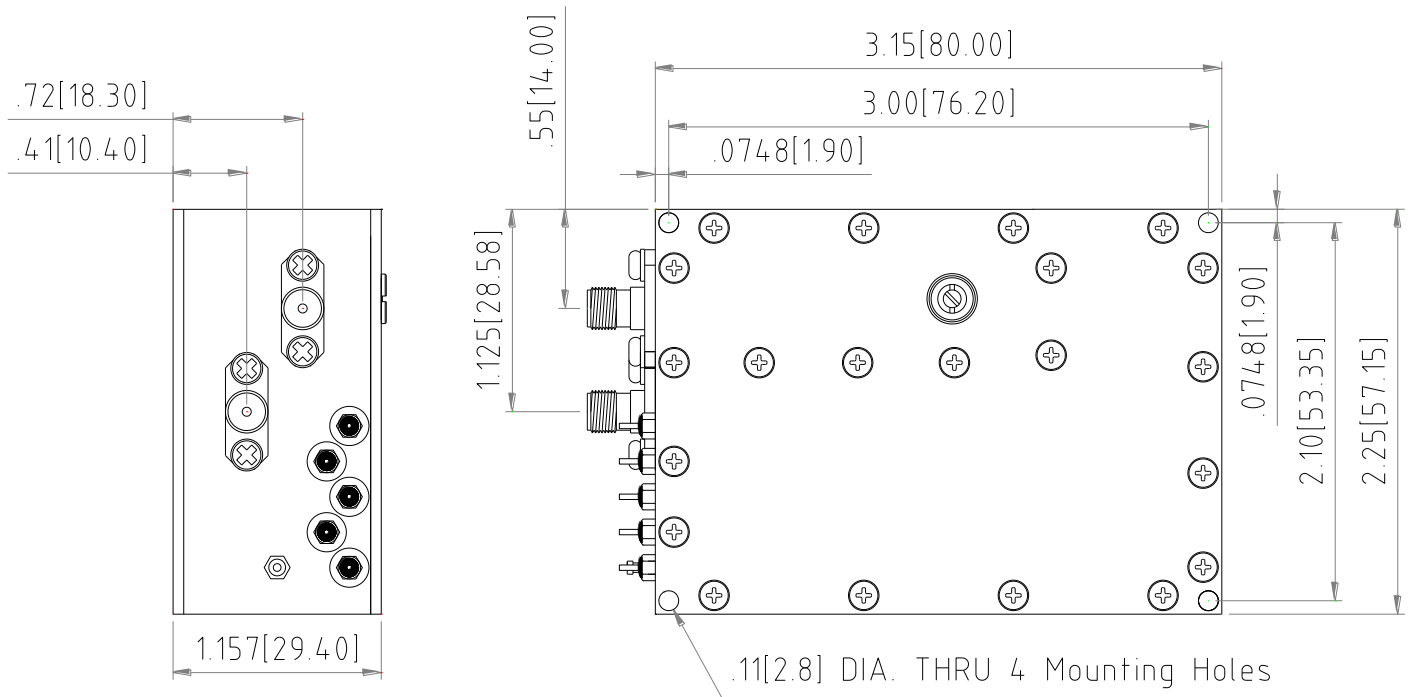
These specifications are subject to change without notice. Please contact the factory for the latest specifications.

Note 1 Phase Lock-Detect (LD)

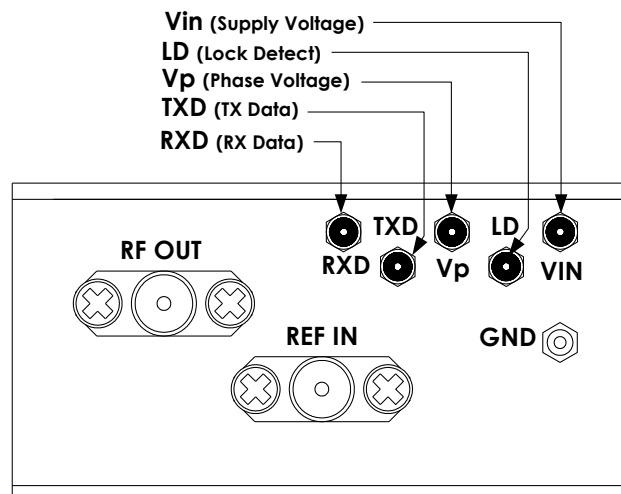
- 3.3 V when phase locked
- 0 V when phase unlocked

## Outline Drawing

Dimensions shown in brackets [ ] are in millimeters.



Extended Dual Bed Housing



Pin Descriptions

## Ordering Information

VPLDRO-RE100-**w...w**-**Bxx**-**Ryy**-**Pzz**

- **w**: Center Frequency (MHz)
- **xx**: Bandwidth (MHz)
- **yy**: Resolution (KHz)
- **zz**: Output Power (dBm)

## Examples

VPLDRO-RE100-**8337**-**B5**-**R1**-**P13**

- . Product Category: Variable Frequency PLDRO
- . External Reference: 100 MHz
- . Center Frequency: 8337 MHz
- . Bandwidth: 5 MHz
- . Resolution: 1 KHz
- . Output Power: 13 dBm

VPLDRO-RE100-**27213**-**B10**-**R10**-**P13**

- . Product Category: Variable Frequency PLDRO
- . External Reference: 100 MHz
- . Center Frequency: 27213 MHz
- . Bandwidth: 10 MHz
- . Resolution: 10 KHz
- . Output Power: 13 dBm

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