

Dielectric Resonator Oscillator Model MDR6100

Phase Locked External Reference

3.0 to 21.0 GHz

Specifications: ⁽¹⁾

| | | |
|---|---------------|--------------|
| Frequency Range: ⁽²⁾ | 3.0 - 6.0 GHz | 6.0-21.0 GHz |
| Mechanical Tuning Bandwidth (min.) ⁽³⁾ | ±10 MHz | ±20 MHz |
| Stability (max.) | Note 4 | Note 4 |
| Harmonics (max.) | -20 dBc | -20 dBc |
| Spurious (max.) | -80 dBc | -80 dBc |
| Output Power (min.) ⁽⁵⁾ | +13 dBm | +13 dBm |

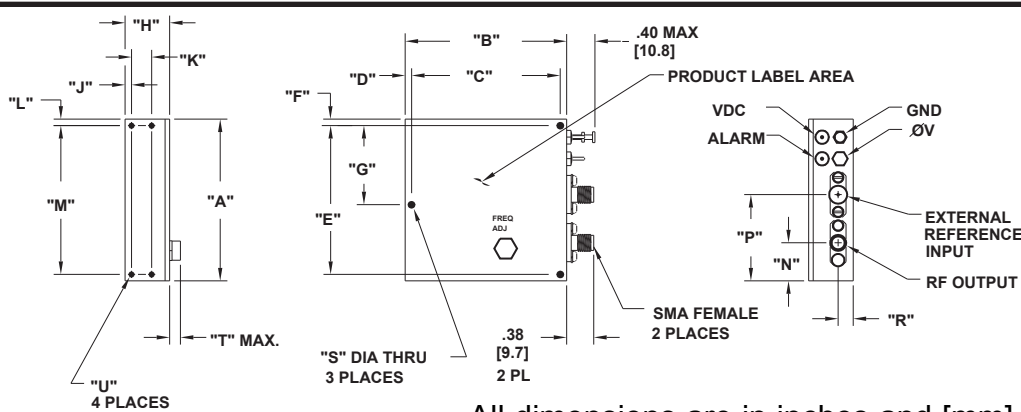
| Frequency (GHz) | Outline |
|-----------------|---------|
| 3.0 to 8.0 | DL1 |
| 6.0 to 14.0 | DL |
| 14.0 to 21.0 | DLA |

| Phase Noise (typ.) | 3 GHz | 6 GHz | 12 GHz | 20 GHz |
|------------------------|-------|-------|--------|--------|
| 1 kHz Offset, dBc/Hz | -108 | -104 | -98 | -90 |
| 10 kHz Offset, dBc/Hz | -118 | -114 | -108 | -100 |
| 100 kHz Offset, dBc/Hz | -124 | -120 | -114 | -105 |
| 1 MHz Offset, dBc/Hz | -140 | -136 | -128 | -120 |

Notes:

- Specifications labeled "min." or "max." are guaranteed in a 50 Ohm system over the specified temperature range.
- Output frequency must be specified and it is an integer multiple of the external reference input frequency.
- Mechanical tuning of DRO in unlocked mode.
- Frequency stability is determined by the external reference.
- Higher output power is available.
- Phase noise at offsets <100 kHz is dependent on external reference and can be approximated as follows:
- Phase Noise (dB) = 20 log (N) +3dB above the external reference phase noise.
- Where N = multiple of reference.
- Actual or impending loss of lock.
- Other input voltages available.
- Package must be verified by Spectrum Microwave.

| | |
|---|--|
| External Reference Input | 100 MHz nominal @ 0 dBm ±3 dB |
| Phase Voltage Set to (nom.) Lock Range (min.) | +5.0 VDC +2 to +9 VDC |
| Phase-Lock Alarm Locked Unlocked ⁽⁷⁾ | Transistor Collector (NPN) Open Vc = 30 VDC max. Saturated to Ground Vce = +0.5 VDC max. Ic = 50 mA max. |
| Input DC ⁽⁸⁾ | +12 VDC ±3% @ 275 mA max. |
| Operating Temperature | -20 to +65°C |
| RF Connector | SMA Female |
| DC Connector | Solder Pin |



All dimensions are in inches and [mm].

| DIMENSIONS: INCHES | | | | | | | | | | | | | | "U" | | | | |
|--------------------|------|------|-------|-----|-------|-----|-------|------|-----|------|-----|-------|-----|------|-----|------|-----|------------------------|
| OUTLINE | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "J" | "K" | "L" | "M" | "N" | "P" | "R" | "S" | "T" | "U" |
| "DI" | 2.25 | 2.25 | 2.070 | .09 | 2.070 | .09 | 1.100 | .62 | .09 | .280 | .09 | 2.070 | .53 | 1.20 | .21 | .109 | .10 | 2-56 UNC-2B X .23 DEEP |
| "DIA" | 2.25 | 2.25 | 2.070 | .09 | 2.070 | .09 | 1.100 | .62 | .09 | .280 | .09 | 2.070 | .53 | 1.20 | .29 | .109 | .10 | 2-56 UNC-2B X .23 DEEP |
| "DI1" | 2.75 | 2.75 | 2.570 | .09 | 2.570 | .09 | 1.285 | 1.00 | .14 | .600 | .08 | 2.600 | .53 | 1.65 | .25 | .125 | .50 | 4-40 UNC-2B X .30 DEEP |

| DIMENSIONS: MM | | | | | | | | | | | | | | "U" | | | | |
|----------------|------|------|-------|-----|-------|-----|-------|------|-----|-------|-----|-------|------|------|-----|------|------|------------------------|
| OUTLINE | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "J" | "K" | "L" | "M" | "N" | "P" | "R" | "S" | "T" | "U" |
| "DI" | 57.2 | 57.2 | 52.58 | 2.3 | 52.58 | 2.3 | 27.94 | 15.7 | 2.3 | 7.11 | 2.3 | 52.58 | 13.5 | 30.5 | 5.3 | 2.77 | 2.5 | 2-56 UNC-2B X 5.8 DEEP |
| "DIA" | 57.2 | 57.2 | 52.58 | 2.3 | 52.58 | 2.3 | 27.94 | 15.7 | 2.3 | 7.11 | 2.3 | 52.58 | 13.5 | 30.5 | 7.4 | 2.77 | 2.5 | 2-56 UNC-2B X 5.8 DEEP |
| "DI1" | 69.8 | 69.8 | 65.28 | 2.3 | 65.28 | 2.3 | 32.64 | 25.4 | 3.6 | 15.24 | 2.1 | 66.04 | 13.5 | 41.9 | 6.4 | 3.2 | 12.7 | 4-40 UNC-2B X 7.6 DEEP |



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