

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

DIMENSIONS: INCHES

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

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

All dimensions are in inches and [mm].

DROS

