

Dielectric Resonator Oscillator Model MDR5100

Phase Locked Internal 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.) ⁽⁴⁾	±10 ppm	±10 ppm
Pushing (max.)	0.1 ppm/Volt	0.1 ppm/Volt
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	-102	-99	-93	-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

Internal Crystal Reference Frequency (nominal) Monitor Output (min.)	100 MHz adjustable ±5 ppm min. -20 dBm
Phase Voltage Set to (nom.) Lock Range (min.)	+5.0 VDC +2 to +9 VDC
Phase-Lock Alarm Locked Unlocked	Transistor Collector (NPN) Open Vc = 30 VDC max. Saturated to Ground Vce = +0.5 VDC max. Ic = 50 mA max.
Input DC ⁽⁶⁾	+12 VDC ±3% @ 275 mA max.
Operating Temperature	-20 to 65 °C
RF Connector	SMA Female
DC Connector	Solder Pin

- 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 internal crystal reference frequency.
 - Mechanical tuning of DRO in unlocked mode.
 - Maximum over the full temperature range.
 - Higher output power is available.
 - Other input voltages available.
 - Package must be verified by Spectrum Microwave.

DIMENSIONS: INCHES

OUTLINE	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"	"N"	"P"	"R"	"S"	"T"	"U"
"DL"	2.25	2.25	2.070	.09	2.070	.09	.970	1.25	.25	.750	.09	2.070	.53	-	.77	.109	.30	2-56 UNC-2B X .23 DEEP
"DL1"	2.75	2.75	2.570	.09	2.570	.09	1.285	1.50	.14	1.180	.08	2.600	.53	-	.77	.125	.50	4-40 UNC-2B X .30 DEEP
"DLA"	2.25	2.25	2.070	.09	2.070	.09	.970	1.25	.25	.750	.09	2.070	.53	-	.92	.109	.30	2-56 UNC-2B X .23 DEEP

DIMENSIONS: MM

OUTLINE	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"	"N"	"P"	"R"	"S"	"T"	"U"
"DL"	57.2	57.2	52.58	2.3	52.58	2.3	24.64	31.8	6.4	19.1	2.3	52.58	13.5	-	15.1	2.77	7.6	2-56 UNC-2B X 5.8 DEEP
"DL1"	69.8	69.8	65.28	2.3	65.28	2.3	32.64	38.1	3.6	29.5	2.1	66.04	13.5	-	15.1	3.2	12.7	4-40 UNC-2B X 7.6 DEEP
"DLA"	57.2	57.2	52.58	2.3	52.58	2.3	24.64	31.8	6.4	19.1	2.3	52.58	13.5	-	23.4	2.77	7.6	2-56 UNC-2B X 5.8 DEEP

All dimensions are in inches and [mm].

