**DIELECTRIC RESONATOR OSCILLATOR**

**SURFACE MOUNT MODEL: SDRO1000-8**

**FREQUENCY**

10 GHz

### FEATURES:

- Exceptional Phase Noise Performance
- Small Size Surface Mount
- Lead Free RoHS Compliant

### SPECIFICATIONS (Rev. D 01/25/19)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>10 GHz</td>
</tr>
<tr>
<td>Tuning Voltage</td>
<td>1 - 15 VDC</td>
</tr>
<tr>
<td>Bias Voltage</td>
<td>+8 VDC @ 25 mA (Max.)</td>
</tr>
<tr>
<td>Output Power</td>
<td>-2 dBm (Min.)</td>
</tr>
<tr>
<td>Tuning Sensitivity</td>
<td>0.4 MHz/V (Typ.)</td>
</tr>
<tr>
<td>Thermal Drift</td>
<td>2 ppm / °C (Typ.)</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>50 Ohms (Nom.)</td>
</tr>
<tr>
<td>Harmonic Suppression</td>
<td>40 DBC (Typ.)</td>
</tr>
<tr>
<td>Frequency Pulling</td>
<td>500 kHz (Typ. @ 1.75:1 VSWR)</td>
</tr>
<tr>
<td>Frequency Pushing</td>
<td>500 kHz/V (Typ.)</td>
</tr>
<tr>
<td>Tuning Port Capacitance</td>
<td>35 pF (Typ.)</td>
</tr>
<tr>
<td>Modulation Bandwidth</td>
<td>&gt; 20 MHz</td>
</tr>
</tbody>
</table>

#### Phase Noise

- Offset dBc/Hz (Typ.):
  - 10 kHz: -107
  - 100 kHz: -127
  - 1 MHz: -147
  - 10 MHz: -165

#### Jitter

- 90 fs (@ 1 kHz to 30 MHz) (Typ.)

#### Operating Temperature Range

- -15 to +75 °C

### Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Rating</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temp. Range</td>
<td>-30 to +85 °C</td>
</tr>
<tr>
<td>Bias Voltage</td>
<td>+8.5 V</td>
</tr>
<tr>
<td>Tuning Voltage</td>
<td>+16 V</td>
</tr>
<tr>
<td>DC Voltage Applied to RF Out</td>
<td>±25 V</td>
</tr>
</tbody>
</table>

### Notes:

1. Tuning screws are factory locked for optimum performance at the center frequency. Tuning of the mechanical screw can cause significant shifts in frequency and adversely affect overall performance. Warranty is void if seal over tuning screw is damaged.
2. Test data measured with bias voltage at +8V.
3. Specifications guaranteed at 10 GHz.

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SURFACE MOUNT MODEL: SDRO1000-8

FREQUENCY

PERFORMANCE PLOTS
DIELECTRIC RESONATOR OSCILLATOR
SURFACE MOUNT MODEL: SDRO1000-8

PERFORMANCE PLOTS

Tuning Sensitivity (MHz/V) vs. Control Voltage (Vdc)

- 25°C
- 75°C
- -15°C

2nd Harmonic Suppression (dB) vs. Control Voltage (Vdc)

- 25°C
- 75°C
- -15°C
PERFORMANCE PLOTS

- pk - pk at +8 V (+/-0.25 V)