**SPECIFICATIONS**

**Typical Values**

- **LO & RF**: 2.0 - 20.0 GHz
- **IF**: 0.001 - 6.0 GHz
- **Third Order I.P.**: +18.0 dBm
- **Conversion Loss**: 6.0 dB
- **LO Drive (nominal)**: +13.0 dBm
- **High Isolation (LO to RF)**: 30.0 dB

**Cougard MixerPak - Seam Sealed Hermetic Package**

**Guaranteed**

-55 to +85 °C

**Parameter** | **Port** | **Frequency (GHz)** | **Typ. (dB)** | **Max. (dB)**
--- | --- | --- | --- | ---
**SSB Conversion Loss** | $f_R$ | 3.0 to 20.0 | 6.0 | 8.5
| $f_L$ | 3.0 to 20.0 | 6.0 | 8.5
**SSB Noise Figure** | $f_R$ | DC to 4.0 | 6.0 | 8.5
| $f_L$ | 2.0 to 20.0 | 7.0 | 8.5
| $f_I$ | 0.001 to 4.0 | 7.0 | 8.5
| $f_I$ | 4.0 to 6.0 | 8.5 | 9.5

**Conversion Comp. Desenitization**

- **$f_R$**
  - Level = +7 dBm
  - Level = +5 dBm

- **$f_R$**
  - Level = +7 dBm

**Isolation**

| $f_R$ at $R$ | $f_L$ at $L$ | 2.0 to 10.0 | 35 | 20
| $f_L$ at $I$ | $f_L$ at $I$ | 2.0 to 10.0 | 30 | 20
| $f_R$ at $I$ | $f_R$ at $I$ | 2.0 to 6.0 | 30 | 20
| $f_R$ at $R$ | $f_R$ at $R$ | 14.0 to 20.0 | 30 | 20

| $f_I$ at $R$ | $f_L$ at $L$ | 10.0 to 20.0 | 25 | 15
| $f_L$ at $I$ | $f_L$ at $I$ | 10.0 to 20.0 | 20 | 15
| $f_R$ at $I$ | $f_R$ at $I$ | 2.0 to 20.0 | 25 | 15

**Third Order Intercept**

<table>
<thead>
<tr>
<th>LO</th>
<th>$f_R$</th>
<th>$f_L$</th>
<th>$f_I$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$LO$ at $+$13 dBm</td>
<td>$+$16 dBm</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

*Measured in a 50-ohm system with nominal LO drive of +13 dBm as a downconverter.

**Absolute Maximum Ratings**

- **Storage Temperature**: -65 to +150 °C
- **Peak RF Input Power All Ports**: +23 dBm @ 25 °C
derate to +18 dBm @ 100 °C
TYPICAL PERFORMANCE

**Isolation (L to I) vs Frequency**

- **L-Port VSWR vs Frequency**

- **R-Port VSWR vs Frequency**

- **I-Port VSWR vs Frequency**

**Conversion Loss vs LO Drive Level**

**Conversion Loss vs RF Frequency**

**Power Input at 1 dB Compression**

**Relative IF Response**

**Intercept Point**

---

1. Level of the $f_L$ signal fed through to the R- and I-ports with respect to the level of the $f_L$ signal at the L-port.

2. VSWR of the I- and R-ports in a 50-ohm system. Some variation in the R-port VSWR will occur as a function of the L-port frequency as shown above.

3. Conversion loss of the mixer when used in an SSB system. The frequency ordinate refers to the R-port ($f_R$) with $f_I$ at 30 MHz.