

OC4002 2000 TO 4000 MHz VOLTAGE CONTROLLED OSCILLATOR

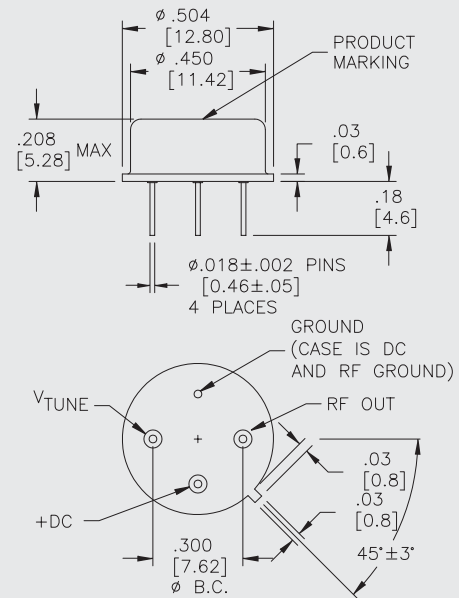
Typical Values @ +25 °C

| | |
|----------------------------|-----------|
| Tuning Voltage Limits | 0-20 V |
| Power Output | +11.5 dBm |
| Power Output Variation | 4.0 dB |
| Standard Size TO-8 Package | |

OC4002

OC4002

TO-8 Package for Oscillators

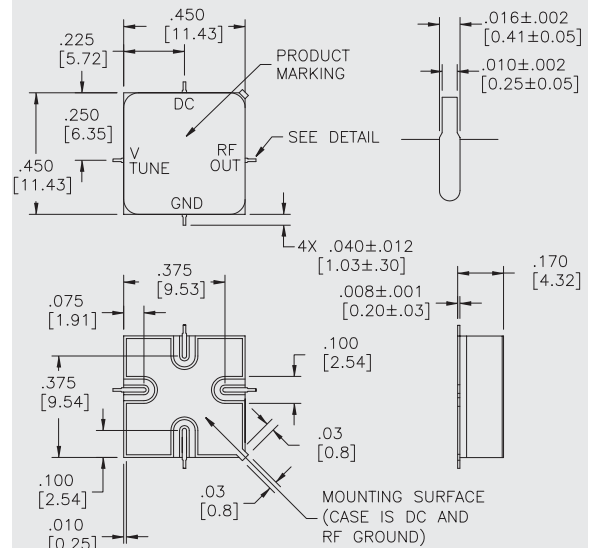


SPECIFICATIONS*

| Parameter | Typical | Guaranteed | |
|--|-----------------|-----------------|-----------------|
| | | 0 to 50 °C | -55 to +85 °C |
| Frequency | 2000-4000 MHz | 2000-4000 MHz | 2000-4000 MHz |
| Tuning Voltage Limits | | | |
| Tuning Voltage at low end | 0 V | 0 V | 0 V |
| Tuning voltage at high end | 20 V | 20 V | 20 V |
| Power Output (Min.) | +11.5 dBm | +11.0 dBm | +10.5 dBm |
| Power Flatness¹ (Max.) | 4.0 dB | 4.6 dB | 4.8 dB |
| Modulation Sensitivity (Min.-Max.) | 43 to 267 MHz/V | 43 to 270 MHz/V | 43 to 270 MHz/V |
| Modulation Sensitivity Ratio (Max.) | 6.0:1 | 6.0:1 | 6.0:1 |
| SSB Phase Noise (Max.) | | | |
| at 10 kHz offset | -87 dBc/Hz | -85 dBc/Hz | -85dBc/Hz |
| at 100 kHz offset | -106 dBc/Hz | -106dBc/Hz | -106dBc/Hz |
| Frequency Drift (Max.) | — | 40 MHz | 70 MHz |
| Harmonics (Max.) | -15.0 dBc | -14.0 dBc | -12.0 dBc |
| Spurious (Max.) | -60.0 dBc | -60.0 dBc | -60.0 dBc |
| Frequency Pulling (Max.) | | | |
| Load VSWR = 1.67:1 | 32 MHz | 35 MHz | 40 MHz |
| Frequency Pushing (Max.) | | | |
| Vdc ± 0.5 V | 8 MHz/V | 10 MHz/V | 12 MHz/V |
| Bias Voltage (Vdc) | 15.0 V | 15.0 V | 15.0 V |
| DC Current (Max.) | 54 mA | 55 mA | 60 mA |

OS4002

SMT0-8 for Oscillators



ABSOLUTE MAXIMUM RATINGS

| | |
|--|-------------------|
| Storage Temperature | -62 °C to +125 °C |
| Maximum Case Temperature | 125 °C |
| Maximum DC Voltage | +17 V |
| Maximum Tuning Voltage | +20 V |
| Burn-In Temperature | +125 °C |
| Thermal Resistance ¹ (θjc) | +40.1 °C/Watt |
| Junction Temperature Rise Above Case (Tjc) | +34.3 °C |

¹ Thermal resistance is based on total power dissipation. Ratings based on +25 °C.

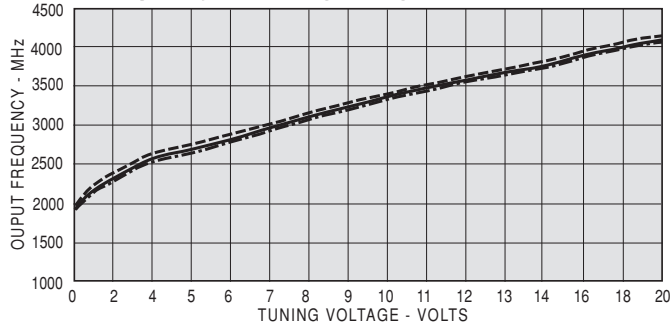
DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

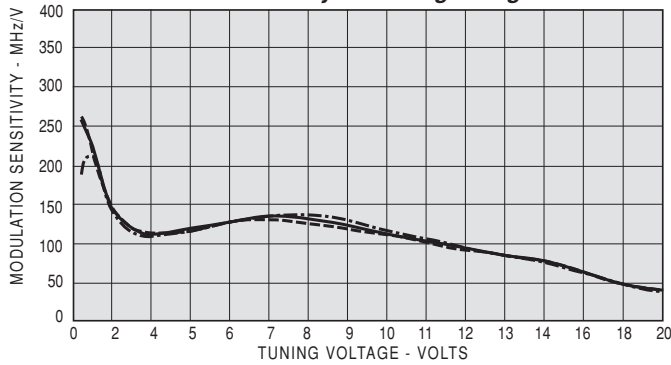
TYPICAL AUTOMATIC TEST DATA

KEY: +25 °C —
+85 °C - - -
-55 °C - - -

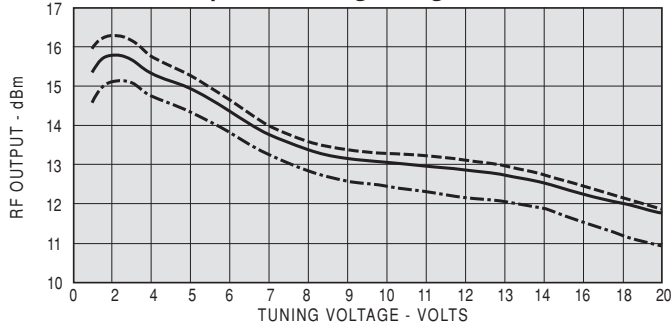
Frequency vs. Tuning Voltage Vcc = 15



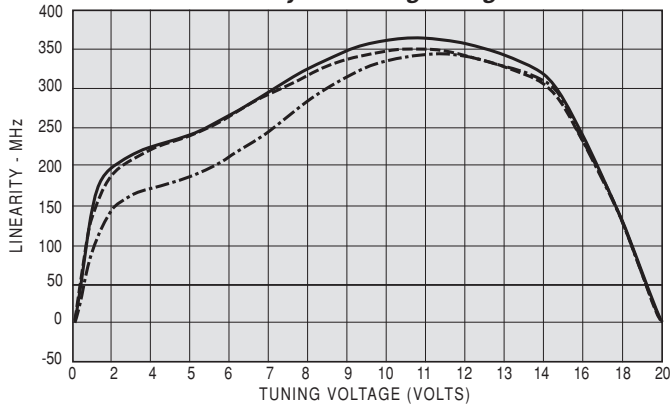
Modulation Sensitivity vs. Tuning Voltage



Power Output vs. Tuning Voltage



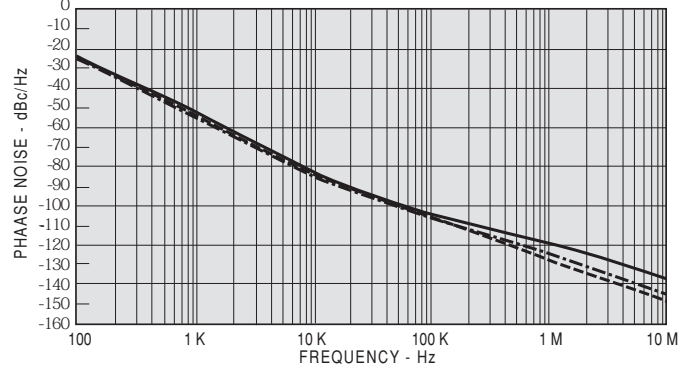
Absolute Linearity vs. Tuning Voltage



| TUNING VOLTAGE V | FREQ. MHz | POWER dBm | MODULATION SENSITIVITY MHz/V | LINEARITY MHz |
|------------------|-----------|-----------|------------------------------|---------------|
| 0.0 | 1,902.61 | 11.4 | 0 | 0 |
| 1.0 | 2,144.50 | 15.16 | 231.91 | 131.06 |
| 2.0 | 2,311.83 | 15.63 | 152.44 | 187.48 |
| 3.0 | 2,442.95 | 15.58 | 126.71 | 207.79 |
| 4.0 | 2,565.02 | 15.29 | 121.91 | 218.98 |
| 5.0 | 2,693.03 | 14.89 | 130.76 | 236.17 |
| 6.0 | 2,829.21 | 14.4 | 137.8 | 261.49 |
| 7.0 | 2,970.45 | 13.85 | 142.04 | 291.89 |
| 8.0 | 3,110.06 | 13.49 | 138.06 | 320.63 |
| 9.0 | 3,241.49 | 13.3 | 129.07 | 341.22 |
| 10.0 | 3,363.16 | 13.23 | 119.25 | 352.06 |
| 11.0 | 3,474.15 | 13.16 | 110.22 | 353.57 |
| 12.0 | 3,578.65 | 13.02 | 102.72 | 347.25 |
| 13.0 | 3,675.34 | 12.85 | 94.24 | 333.07 |
| 14.0 | 3,763.84 | 12.68 | 86.74 | 310.77 |
| 15.0 | 3,843.60 | 12.47 | 76.81 | 279.6 |
| 16.0 | 3,912.69 | 12.41 | 66.86 | 237.95 |
| 17.0 | 3,973.58 | 12.34 | 58.99 | 187.9 |
| 18.0 | 4,027.39 | 12.26 | 52.04 | 130.82 |
| 19.0 | 4,075.26 | 12.16 | 46.55 | 67.92 |
| 20.0 | 4,118.21 | 12.03 | 41.83 | 0 |

Model: OC4002 Vcc= +15V Vstr mA = 45.923 Vstop mA = 46.512

Phase Noise at 2.0 GHz



Phase Noise at 4.0 GHz

