

Plug-In

Voltage Controlled Oscillator

POS-2120W+

Wideband 1060 to 2120 MHz



CASE STYLE: A06

Features

- octave frequency range
- 3 dB modulation bandwidth, 20 MHz typ.
- low phase noise
- output suitable for LO drive to 7 dBm mixers
- hermetically sealed

Applications

- test instruments-signal generators
- wideband frequency synthesizers
- agile communications systems
- cellular up and down converters

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications

| MODEL NO. | FREQ. (MHz) | | POWER OUTPUT (dBm) | PHASE NOISE dBc/Hz SSB at offset frequencies, kHz | | | | TUNING | | | | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc) | | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | DC OPERATING POWER | | | |
|------------|-------------|------|--------------------|---|------|------|------|-------------------|---------------------|---------------|---------------------------------|-----------------------------|-----------------|-----|-----------------------------|-----------------|-------------------------|--------------|----|----|
| | | | | | | | | VOLTAGE RANGE (V) | SENSITIVITY (MHz/V) | PORT CAP (pF) | 3 dB MODULATION BANDWIDTH (MHz) | | | | | | V _{cc} (volts) | Current (mA) | | |
| | Min. | Max. | | Typ. | Typ. | Typ. | Max. | | | | | | | | | | | | | |
| POS-2120W+ | 1060 | 2120 | +7 | -63 | -93 | -117 | -139 | 0.5 | 20 | 25 | 108 | 35 | 20 | -90 | -15 | - | 20 | 2 | 12 | 28 |

Pin Connections

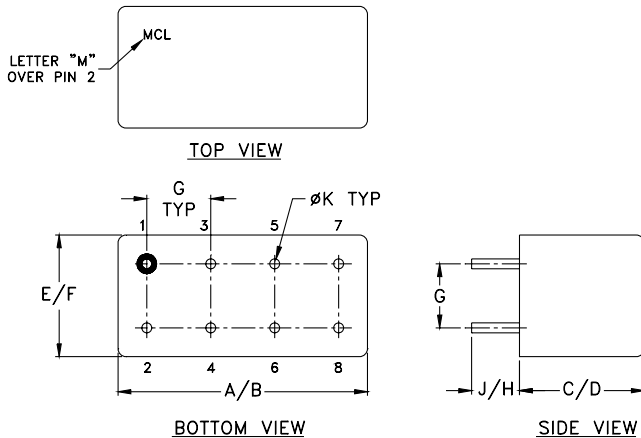
| | |
|-------------|-----------|
| RF OUT | 2 |
| VCC | 1 |
| V-TUNE | 8 |
| GROUND | 3,4,5,6,7 |
| CASE GROUND | 3,4,5,6,7 |

Maximum Ratings

| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | +13V |
| Absolute Max. Tuning Voltage (Vtune) | +22V |

all specifications: 50 ohm system
Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H | J | K | wt |
|-------|-------|------|------|------|-------|------|------|------|------|-------|
| .770 | .800 | .285 | .310 | .370 | .400 | .200 | .20 | .14 | .031 | grams |
| 19.56 | 20.32 | 7.24 | 7.87 | 9.40 | 10.16 | 5.08 | 5.08 | 3.56 | 0.79 | 5.2 |

Notes

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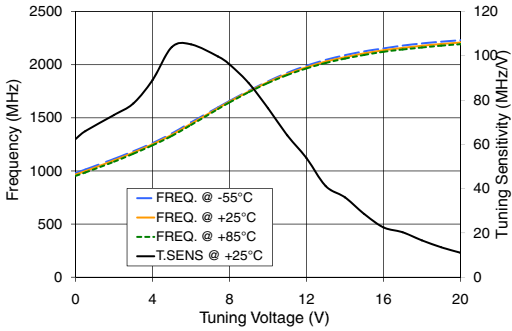
Performance Data & Curves*

POS-2120W+

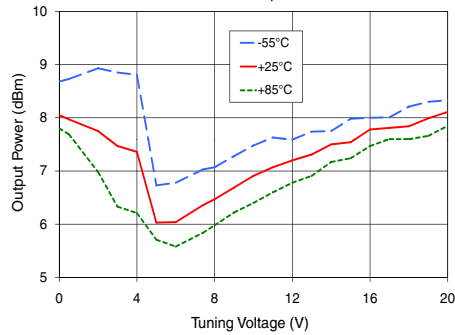
| V TUNE | TUNE SENS (MHz/V) | FREQUENCY (MHz) | | | POWER OUTPUT (dBm) | | | Icc (mA) | HARMONICS (dBc) | | | FREQ. PUSH (MHz/V) | FREQ. PULL (MHz) | PHASE NOISE (dBc/Hz) at offsets | | | | FREQ OFFSET (kHz) | PHASE NOISE at 1590 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|-------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 62.45 | 981.4 | 967.4 | 954.0 | 8.68 | 8.05 | 7.80 | 23.18 | -10.2 | -35.2 | -39.9 | 1.21 | 10.72 | -64.57 | -91.2 | -113.4 | -134.5 | 1.0 | -64.44 |
| 2.00 | 73.31 | 1113.5 | 1099.4 | 1086.9 | 8.93 | 7.75 | 6.98 | 23.29 | -8.7 | -29.7 | -34.7 | 0.87 | 5.49 | -65.72 | -93.5 | -117.2 | -139.2 | 2.5 | -77.18 |
| 3.00 | 78.50 | 1185.1 | 1172.7 | 1161.6 | 8.85 | 7.47 | 6.33 | 23.29 | -9.9 | -26.2 | -31.9 | 0.79 | 3.54 | -65.91 | -94.4 | -118.3 | -140.6 | 4.2 | -84.29 |
| 4.00 | 89.08 | 1262.8 | 1251.2 | 1241.2 | 8.81 | 7.36 | 6.21 | 23.28 | -11.5 | -28.0 | -32.2 | 0.99 | 4.34 | -65.78 | -93.9 | -118.6 | -141.5 | 7.1 | -90.78 |
| 5.00 | 103.98 | 1353.0 | 1340.3 | 1329.4 | 6.73 | 6.03 | 5.71 | 23.24 | -20.2 | -25.2 | -32.9 | 1.43 | 4.23 | -66.80 | -94.3 | -118.6 | -140.7 | 10.0 | -94.70 |
| 6.00 | 105.21 | 1457.1 | 1444.2 | 1432.8 | 6.78 | 6.04 | 5.58 | 23.23 | -31.5 | -23.9 | -29.2 | 1.15 | 1.83 | -65.08 | -94.4 | -118.8 | -141.5 | 11.7 | -96.43 |
| 7.40 | 99.71 | 1599.0 | 1590.3 | 1582.5 | 7.03 | 6.36 | 5.84 | 23.23 | -27.4 | -22.7 | -34.9 | 1.53 | 3.72 | -64.44 | -94.7 | -118.7 | -140.8 | 23.1 | -103.70 |
| 8.00 | 96.11 | 1658.8 | 1651.6 | 1644.9 | 7.07 | 6.47 | 5.98 | 23.22 | -23.6 | -21.8 | -38.0 | 2.82 | 5.22 | -64.03 | -94.2 | -117.9 | -139.7 | 38.8 | -108.96 |
| 9.00 | 87.67 | 1754.4 | 1747.7 | 1741.7 | 7.28 | 6.69 | 6.22 | 23.21 | -19.1 | -22.1 | -41.6 | 4.23 | 6.84 | -63.54 | -93.3 | -116.8 | -138.5 | 64.0 | -113.87 |
| 10.00 | 76.34 | 1843.8 | 1835.3 | 1828.2 | 7.48 | 6.91 | 6.40 | 23.19 | -18.6 | -22.3 | -39.6 | 4.50 | 3.54 | -61.73 | -92.4 | -116.4 | -138.4 | 89.8 | -117.40 |
| 11.00 | 64.10 | 1923.6 | 1911.7 | 1902.8 | 7.63 | 7.07 | 6.60 | 23.17 | -19.7 | -23.8 | -36.4 | 3.63 | 1.20 | -60.80 | -92.7 | -116.8 | -139.0 | 100.0 | -118.74 |
| 12.00 | 53.79 | 1990.0 | 1975.8 | 1965.0 | 7.59 | 7.20 | 6.78 | 23.17 | -19.0 | -27.3 | -36.7 | 2.24 | 5.26 | -61.71 | -92.9 | -117.5 | -139.8 | 150.8 | -122.44 |
| 13.00 | 41.16 | 2044.9 | 2029.6 | 2016.7 | 7.74 | 7.31 | 6.91 | 23.17 | -18.6 | -27.9 | -39.2 | 1.14 | 11.85 | -61.84 | -92.5 | -116.9 | -139.4 | 177.0 | -124.00 |
| 14.00 | 36.06 | 2089.2 | 2070.7 | 2057.8 | 7.75 | 7.50 | 7.17 | 23.17 | -19.4 | -27.1 | -42.2 | 0.34 | 4.03 | -62.35 | -92.7 | -117.2 | -139.5 | 211.6 | -125.78 |
| 15.00 | 28.57 | 2125.6 | 2106.8 | 2092.1 | 7.98 | 7.54 | 7.24 | 23.16 | -20.2 | -27.0 | -43.9 | 0.25 | 12.21 | -60.24 | -91.6 | -115.8 | -138.0 | 297.1 | -129.11 |
| 16.00 | 22.52 | 2153.7 | 2135.4 | 2121.3 | 8.00 | 7.78 | 7.47 | 23.18 | -19.5 | -27.4 | -44.8 | 0.59 | 6.87 | -60.96 | -91.8 | -116.0 | -138.1 | 348.8 | -130.56 |
| 17.00 | 20.28 | 2179.8 | 2157.9 | 2143.4 | 8.01 | 7.81 | 7.60 | 23.18 | -19.9 | -28.4 | -46.0 | 0.85 | 12.18 | -63.16 | -91.5 | -115.6 | -137.7 | 489.7 | -133.94 |
| 18.00 | 16.65 | 2200.3 | 2178.2 | 2161.9 | 8.21 | 7.84 | 7.60 | 23.18 | -20.7 | -29.3 | -47.0 | 1.16 | 16.06 | -62.13 | -89.9 | -114.1 | -136.1 | 585.4 | -135.67 |
| 19.00 | 13.54 | 2216.6 | 2194.8 | 2179.0 | 8.30 | 7.99 | 7.66 | 23.20 | -20.0 | -29.9 | -48.0 | 1.22 | 17.19 | -62.95 | -90.7 | -114.5 | -136.6 | 964.9 | -140.58 |
| 20.00 | 11.06 | 2230.2 | 2208.4 | 2192.9 | 8.33 | 8.11 | 7.85 | 23.21 | -19.9 | -31.7 | -47.6 | 1.34 | 13.66 | -59.39 | -90.0 | -114.3 | -136.4 | 1000.0 | -140.83 |

*at 25°C unless mentioned otherwise

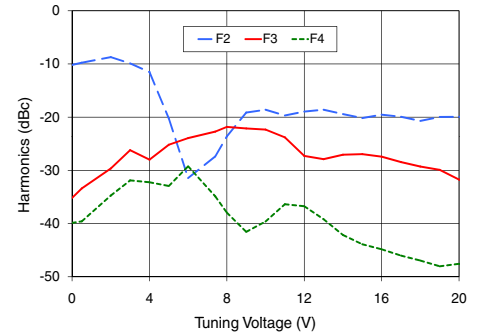
POS-2120W+
Frequency and Tuning Sensitivity



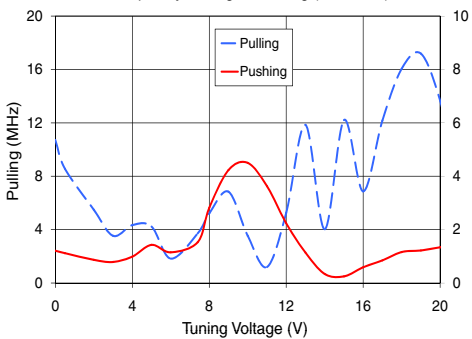
POS-2120W+
Power Output



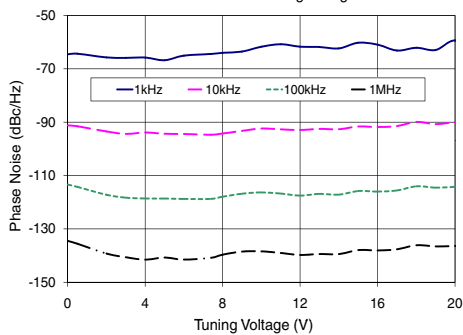
POS-2120W+
Harmonics Level



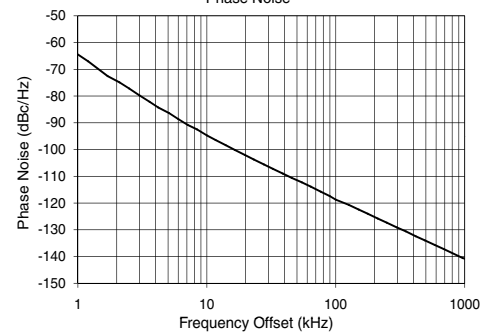
POS-2120W+
Frequency Pulling & Pushing (Vcc ± 5%)



POS-2120W+
Phase Noise Vs. Tuning Voltage



POS-2120W+
Phase Noise



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