

Surface Mount

Voltage Controlled Oscillator

MOS-1739-219+

5V Tuning for PLL IC's 1690 to 1760 MHz

Features

- linear tuning characteristics
- low phase noise
- low pulling
- low pushing
- aqueous washable

Applications

- wireless communications
- cellular base station
- MW & MMW



CASE STYLE: CZ682

+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 | | | | |
|---------------|-------------|------|--------------------|---|------|------|------|--------|-------------------|-------|-----------------------|---------------|-----------------------------|---------------------------------|------|-----------------------------|-----------------|--------------------|------|------|-----|--------------|
| | Min. | Max. | | Typ. | 1 | 10 | 100 | 1000 | VOLTAGE RANGE (V) | | SENSI- TIVITY (MHz/V) | PORT CAP (pF) | | 3 dB MODULATION BANDWIDTH (MHz) | Typ. | | | Max. | Typ. | Typ. | Vcc | Current (mA) |
| | | | | | | | | | Min. | Max. | | | | | | | | | | | | |
| MOS-1739-219+ | 1690 | 1760 | 0 | -74 | -104 | -124 | -144 | 0.5 | 5 | 27-32 | 20 | 300 | -90 | -25 | -17 | 0.1 | 0.7 | 5 | 32 | | | |

Pin Connections

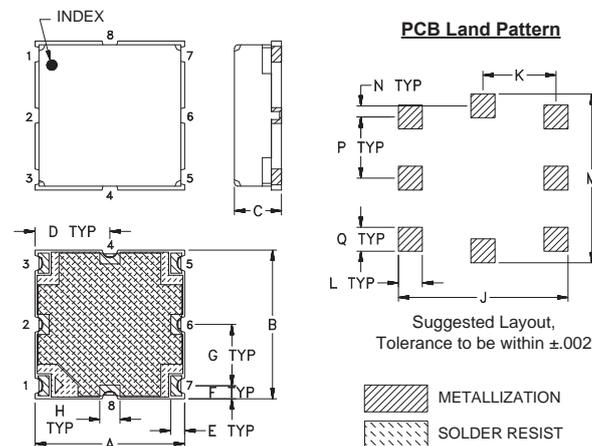
| | |
|--------|-----------|
| RF OUT | 5 |
| VCC | 3 |
| V-TUNE | 1 |
| GROUND | 2,4,6,7,8 |

Maximum Ratings

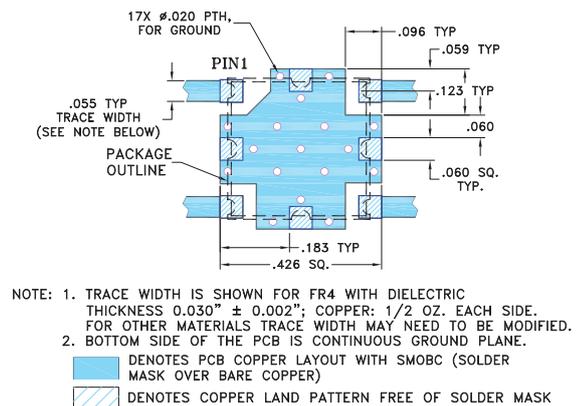
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7V |
| Absolute Max. Tuning Voltage (Vtune) | 7V |
| All specifications | 50 ohm system |

Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Demo Board MCL P/N: TB-128 Suggested PCB Layout (PL-023)



Outline Dimensions (inch mm)

| A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | wt. grams |
|------|------|------|------|------|------|------|------|-------|------|------|-------|------|------|------|-----------|
| .375 | .375 | .131 | .188 | .035 | .033 | .154 | .050 | .425 | .183 | .060 | .425 | .028 | .154 | .060 | .60 |
| 9.52 | 9.52 | 3.33 | 4.77 | 0.89 | 0.84 | 3.91 | 1.27 | 10.80 | 4.65 | 1.52 | 10.80 | 0.71 | 3.91 | 1.52 | .60 |

Notes

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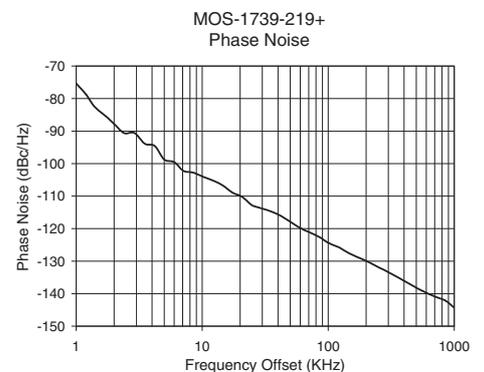
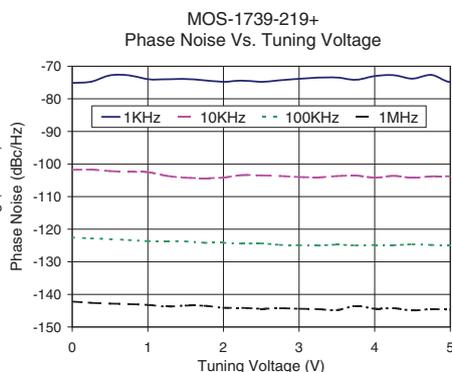
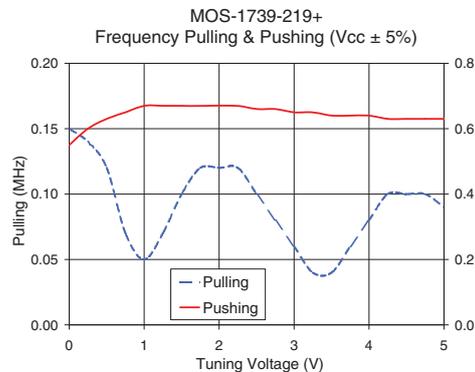
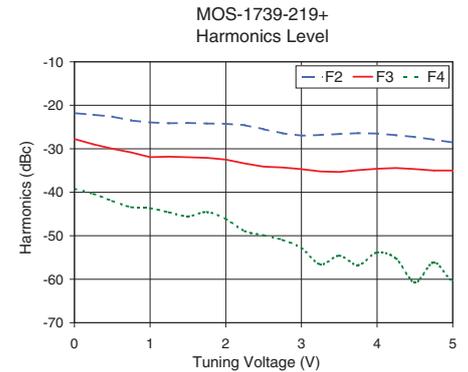
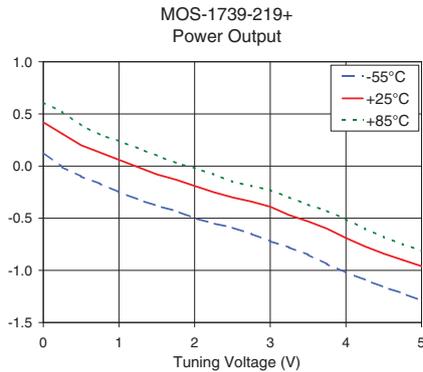
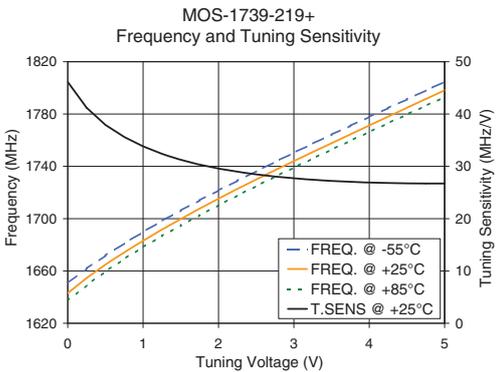
REV. B
M151108
EDR-5666/BF1
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RAV
150512
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Performance Data & Curves*

MOS-1739-219+

| 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 1711 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1KHz | 10KHz | 100KHz | 1MHz | | |
| 0.00 | 46.13 | 1650.7 | 1643.1 | 1637.2 | 0.13 | 0.42 | 0.61 | 26.38 | -21.8 | -27.8 | -39.2 | 0.55 | 0.15 | -75.2 | -101.8 | -122.6 | -142.2 | 1.0 | -75.34 |
| 0.50 | 37.93 | 1671.8 | 1664.9 | 1659.6 | -0.10 | 0.20 | 0.39 | 26.48 | -22.6 | -30.0 | -42.0 | 0.63 | 0.12 | -72.8 | -102.2 | -123.1 | -142.8 | 2.0 | -87.79 |
| 0.75 | 35.61 | 1681.1 | 1674.4 | 1669.2 | -0.17 | 0.13 | 0.30 | 26.52 | -23.5 | -30.9 | -43.4 | 0.65 | 0.07 | -72.8 | -102.4 | -123.3 | -143.0 | 3.5 | -93.87 |
| 1.00 | 33.82 | 1689.9 | 1683.3 | 1678.2 | -0.25 | 0.06 | 0.24 | 26.56 | -23.9 | -31.9 | -43.7 | 0.67 | 0.05 | -74.0 | -102.5 | -123.7 | -143.2 | 6.0 | -99.53 |
| 1.25 | 32.40 | 1698.2 | 1691.7 | 1686.7 | -0.32 | -0.01 | 0.17 | 26.59 | -24.1 | -31.8 | -44.6 | 0.67 | 0.07 | -74.0 | -103.6 | -123.6 | -143.7 | 8.5 | -102.76 |
| 1.50 | 31.26 | 1706.2 | 1699.8 | 1694.8 | -0.38 | -0.08 | 0.10 | 26.62 | -24.1 | -32.0 | -45.5 | 0.67 | 0.10 | -73.9 | -104.2 | -123.8 | -143.4 | 10.0 | -103.94 |
| 1.75 | 30.33 | 1714.0 | 1707.6 | 1702.6 | -0.43 | -0.13 | 0.03 | 26.65 | -24.2 | -32.1 | -44.5 | 0.67 | 0.12 | -74.3 | -104.4 | -124.2 | -143.5 | 20.8 | -110.24 |
| 2.00 | 29.58 | 1721.6 | 1715.2 | 1710.2 | -0.50 | -0.19 | -0.02 | 26.68 | -24.3 | -32.5 | -46.2 | 0.67 | 0.12 | -74.8 | -104.2 | -124.2 | -144.1 | 35.5 | -114.80 |
| 2.25 | 28.99 | 1729.0 | 1722.6 | 1717.6 | -0.55 | -0.25 | -0.08 | 26.70 | -24.6 | -33.4 | -48.9 | 0.67 | 0.12 | -74.4 | -103.4 | -124.4 | -144.1 | 60.7 | -119.92 |
| 2.50 | 28.46 | 1736.2 | 1729.9 | 1724.9 | -0.59 | -0.30 | -0.15 | 26.72 | -25.5 | -34.1 | -49.9 | 0.66 | 0.10 | -74.8 | -103.5 | -124.4 | -144.4 | 86.7 | -122.77 |
| 2.75 | 28.05 | 1743.3 | 1737.0 | 1732.0 | -0.65 | -0.34 | -0.19 | 26.74 | -26.4 | -34.3 | -51.0 | 0.66 | 0.08 | -74.3 | -103.7 | -124.8 | -144.3 | 100.0 | -124.36 |
| 3.00 | 27.72 | 1750.4 | 1744.0 | 1739.0 | -0.72 | -0.39 | -0.23 | 26.75 | -27.0 | -34.7 | -52.8 | 0.65 | 0.06 | -73.8 | -104.0 | -124.9 | -144.4 | 148.1 | -127.70 |
| 3.25 | 27.42 | 1757.3 | 1750.9 | 1746.0 | -0.78 | -0.47 | -0.30 | 26.77 | -26.8 | -35.2 | -56.6 | 0.65 | 0.04 | -73.5 | -104.1 | -125.0 | -144.5 | 177.0 | -128.97 |
| 3.50 | 27.21 | 1764.2 | 1757.8 | 1752.8 | -0.85 | -0.53 | -0.37 | 26.79 | -26.6 | -35.3 | -54.6 | 0.64 | 0.04 | -73.4 | -103.7 | -124.7 | -144.8 | 211.6 | -130.39 |
| 3.75 | 27.04 | 1771.0 | 1764.6 | 1759.6 | -0.94 | -0.60 | -0.43 | 26.80 | -26.4 | -34.9 | -56.8 | 0.64 | 0.06 | -74.2 | -103.6 | -125.0 | -143.5 | 302.4 | -133.37 |
| 4.00 | 26.90 | 1777.8 | 1771.3 | 1766.3 | -1.02 | -0.69 | -0.51 | 26.81 | -26.5 | -34.6 | -53.9 | 0.64 | 0.08 | -73.0 | -104.2 | -124.8 | -144.4 | 361.5 | -135.14 |
| 4.25 | 26.82 | 1784.5 | 1778.1 | 1773.0 | -1.09 | -0.77 | -0.60 | 26.83 | -26.9 | -34.4 | -55.3 | 0.63 | 0.10 | -72.8 | -103.6 | -124.9 | -144.2 | 507.5 | -138.29 |
| 4.50 | 26.74 | 1791.3 | 1784.8 | 1779.7 | -1.16 | -0.84 | -0.68 | 26.84 | -27.3 | -34.7 | -60.7 | 0.63 | 0.10 | -73.8 | -104.2 | -124.6 | -144.9 | 606.7 | -139.80 |
| 4.75 | 26.72 | 1798.0 | 1791.5 | 1786.3 | -1.22 | -0.90 | -0.75 | 26.85 | -27.9 | -35.0 | -56.1 | 0.63 | 0.10 | -72.7 | -103.8 | -124.9 | -144.5 | 851.6 | -142.16 |
| 5.00 | 26.72 | 1804.7 | 1798.1 | 1792.9 | -1.29 | -0.96 | -0.81 | 26.86 | -28.6 | -35.0 | -60.3 | 0.63 | 0.09 | -74.9 | -103.8 | -125.0 | -144.7 | 1000.0 | -144.35 |

*at 25°C unless mentioned otherwise



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