

Surface Mount Voltage Controlled Oscillator

SOS-1225-119+

5V Tuning for PLL IC's 1185 to 1225 MHz

Features

- linear tuning characteristics
- low pushing & pulling
- low phase noise
- small size 0.3" x 0.3"
- aqueous washable

Applications

- wireless communications
- handset radio



CASE STYLE: FZ990
PRICE: \$ 20.60 ea. QTY (5-49)

+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 dBr (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. | Typ. | | | Typ. | Typ. |
| SOS-1225-119+ | 1185 | 1225 | -0.2 | -79 | -105 | -125 | -145 | 0.5 | 3 | 42 | 22 | 75 | -90 | -17 | -10 | 2 | 0.7 | 3 | 14 |

Pin Connections

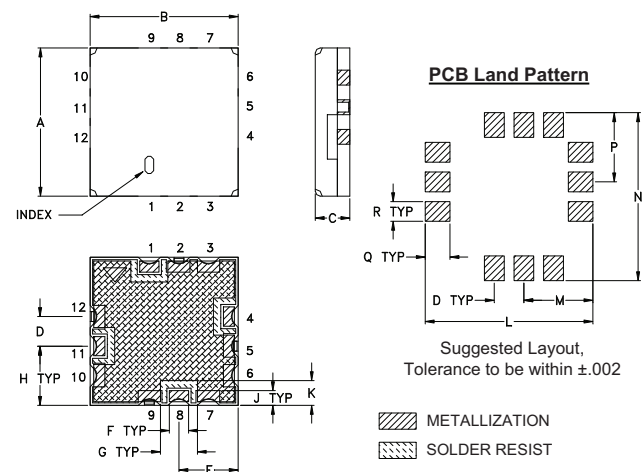
| | |
|--------|---------------------|
| RF OUT | 8 |
| VCC | 11 |
| V-TUNE | 1 |
| GROUND | 2,3,4,5,6,7,9,10,12 |

Maximum Ratings

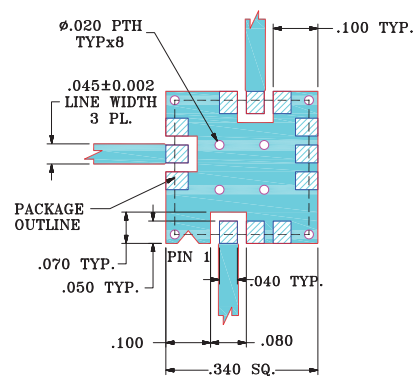
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 5V |
| Absolute Max. Tuning Voltage (Vtune) | 5V |
| All specifications | 50 ohm system |

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

Outline Drawing



Demo Board MCL P/N: TB-271 Suggested PCB Layout (PL-143)



NOTE:

1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .025"±.002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | wt. |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| .300 | .300 | .100 | .060 | .120 | .039 | .075 | .120 | .030 | .050 | .340 | .140 | .340 | .140 | .050 | .040 | grams |
| 7.62 | 7.62 | 2.54 | 1.52 | 3.05 | 0.99 | 1.91 | 3.05 | 0.76 | 1.27 | 8.64 | 3.56 | 8.64 | 3.56 | 1.27 | 1.02 | .25 |



For detailed performance specs & shopping online see web site

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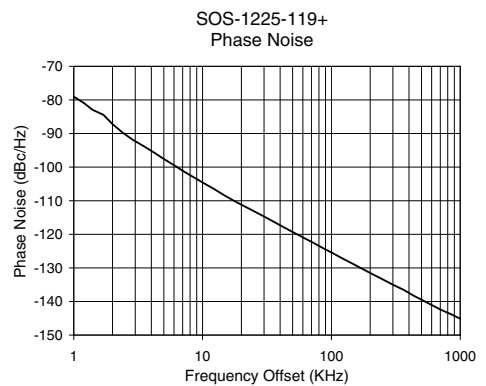
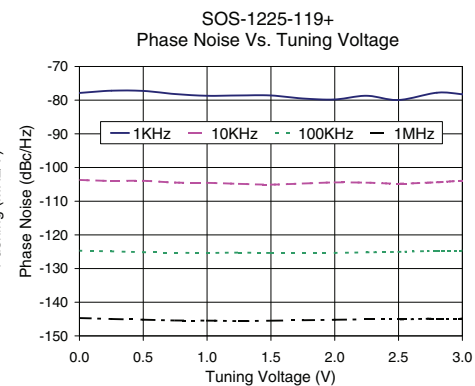
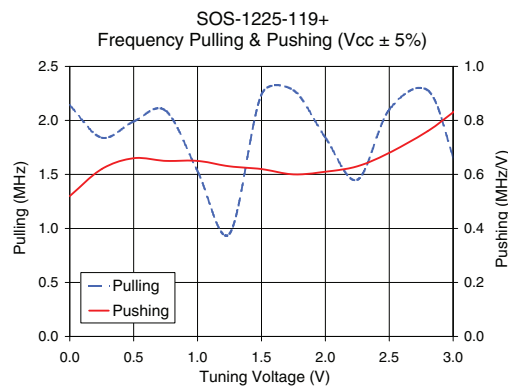
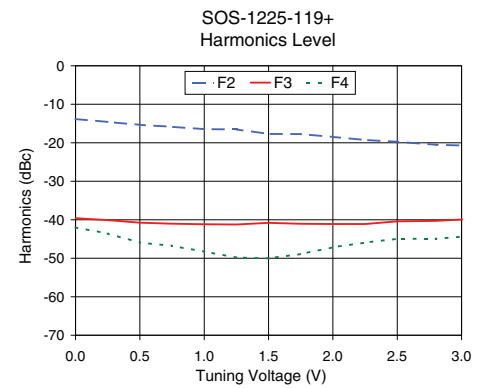
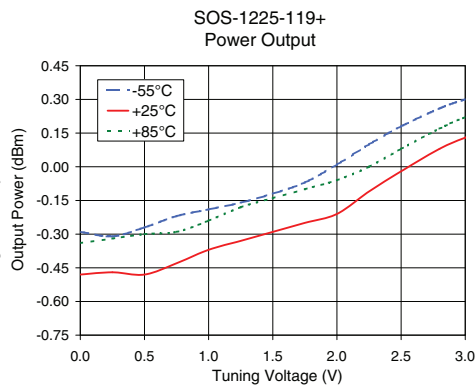
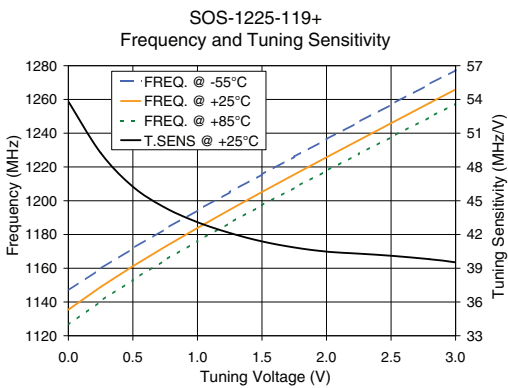
REV. OR
M120661
EDR-8910/3F1
SOS-1225-119+
RAV
110905
Page 1 of 2

Performance Data & Curves*

SOS-1225-119+

| 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 1205 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 53.81 | 1146.8 | 1135.4 | 1126.4 | -0.29 | -0.48 | -0.34 | 8.42 | -13.8 | -39.6 | -42.0 | 0.52 | 2.14 | -77.9 | -103.7 | -124.7 | -144.7 | 1.0 | -79.03 |
| 0.25 | 49.26 | 1159.8 | 1148.9 | 1140.5 | -0.31 | -0.47 | -0.32 | 8.38 | -14.6 | -40.1 | -43.6 | 0.62 | 1.84 | -77.2 | -104.0 | -124.9 | -145.0 | 3.5 | -93.79 |
| 0.50 | 46.25 | 1171.8 | 1161.2 | 1153.1 | -0.27 | -0.48 | -0.30 | 8.36 | -15.4 | -40.8 | -45.9 | 0.66 | 1.99 | -77.3 | -104.0 | -125.2 | -145.2 | 5.0 | -97.57 |
| 0.75 | 44.37 | 1183.2 | 1172.8 | 1164.9 | -0.22 | -0.43 | -0.29 | 8.34 | -15.9 | -41.0 | -46.8 | 0.65 | 2.09 | -78.2 | -104.5 | -125.3 | -145.4 | 10.0 | -104.57 |
| 1.00 | 43.09 | 1194.3 | 1183.9 | 1176.0 | -0.19 | -0.37 | -0.24 | 8.32 | -16.5 | -41.2 | -48.3 | 0.65 | 1.53 | -78.7 | -104.6 | -125.4 | -145.5 | 35.5 | -116.22 |
| 1.25 | 42.13 | 1205.0 | 1194.6 | 1186.8 | -0.16 | -0.33 | -0.18 | 8.30 | -16.5 | -41.2 | -49.8 | 0.63 | 0.95 | -78.6 | -104.8 | -125.3 | -145.6 | 50.7 | -119.43 |
| 1.50 | 41.39 | 1215.6 | 1205.2 | 1197.3 | -0.12 | -0.29 | -0.14 | 8.27 | -17.7 | -40.8 | -50.0 | 0.62 | 2.24 | -78.6 | -105.1 | -125.4 | -145.5 | 100.0 | -125.40 |
| 1.75 | 40.85 | 1226.0 | 1215.5 | 1207.6 | -0.07 | -0.25 | -0.10 | 8.25 | -17.7 | -41.0 | -48.9 | 0.60 | 2.28 | -79.5 | -104.8 | -125.4 | -145.3 | 148.1 | -128.86 |
| 2.00 | 40.48 | 1236.4 | 1225.7 | 1217.8 | 0.01 | -0.21 | -0.06 | 8.22 | -18.5 | -41.1 | -47.1 | 0.61 | 1.84 | -79.8 | -104.4 | -125.4 | -145.2 | 253.0 | -133.52 |
| 2.25 | 40.29 | 1246.7 | 1235.8 | 1227.7 | 0.10 | -0.11 | 0.00 | 8.18 | -19.3 | -41.1 | -45.9 | 0.63 | 1.45 | -78.7 | -104.5 | -125.2 | -145.1 | 361.5 | -136.48 |
| 2.50 | 40.10 | 1257.0 | 1245.9 | 1237.7 | 0.18 | -0.02 | 0.08 | 8.15 | -19.7 | -40.4 | -45.0 | 0.68 | 2.10 | -79.9 | -104.8 | -125.1 | -145.1 | 507.5 | -139.59 |
| 2.80 | 39.80 | 1269.2 | 1257.9 | 1249.5 | 0.26 | 0.08 | 0.17 | 8.09 | -20.5 | -40.3 | -44.9 | 0.76 | 2.28 | -77.8 | -104.4 | -124.8 | -144.9 | 851.6 | -143.81 |
| 3.00 | 39.52 | 1277.4 | 1265.9 | 1257.4 | 0.30 | 0.13 | 0.22 | 8.07 | -20.7 | -39.9 | -44.4 | 0.83 | 1.66 | -78.3 | -104.0 | -124.7 | -144.9 | 1000.0 | -145.13 |

*at 25°C unless mentioned otherwise



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