

# Voltage Controlled Oscillator ROS-2600-1119+

50Ω 1650 to 2600 MHz

## The Big Deal:

- Wide Band
- Low Phase Noise
- Robust design and construction
- Small size .500" x .500" x .180"



CASE STYLE: CK605

## Product Overview:

The ROS-2600-1119+ is a Voltage Controlled Oscillator, designed to operate from 1650 to 2600 MHz for cable TV application. The ROS-2600-1119+ is packaged in a metal case (size of .500" x .500" x .180") to shield against unwanted signals and noise.

## Key Features

| Feature  | Advantages   |
|--|--|
| Wide Band: from 1650 to 2600 MHz                     | The model's wide bandwidth makes it suitable for a wide variety of applications, such as: CATV, military, test equipment etc...  |
| Low Phase Noise:<br>-102 dBc/Hz typ at 10 kHz offset | Low phase noise improves system EVM (Error Vector Magnitude).  |
| Good Pushing, 1 MHz/V typ.                           | Provides increased immunity against noisy DC lines and improves output frequency stability vs. variations in supply voltage.   |
| Robust design and construction                       | To enhance the robustness of ROS-2600-1119+, each internal component is secured to the substrate with chip bonder, thereby eliminating the risk of tombstoning during subsequent solder reflow operations by the customer and provides better immunity to microphonic effects and reduced phase hit. |
| Small size: .500" x .500" x .180"                    | The small size enables the ROS-2600-1119+ to be used in compact designs.   |

# Voltage Controlled Oscillator

## ROS-2600-1119+

Wide Band 1650 to 2600 MHz

### Features

- wide band frequency range
- low phase noise
- low pushing
- aqueous washable

### Applications

- wireless communications
- cable TV
- test equipment
- military



CASE STYLE: CK605  
PRICE: \$24.95 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 dB (MHz) | PUSHING (MHz/V) | DC OPERATING POWER |             |              |
|----------------|-------------|------|--------------------|---|------|------|------|--------|-------------------|---------------------|---------------|-----------------------------|---------------------------------|------|----------------------------|-----------------|--------------------|-------------|--------------|
|                | Min.        | Max. |                    | Typ.  | 1    | 10   | 100  | 1000   | VOLTAGE RANGE (V) | SENSITIVITY (MHz/V) | PORT CAP (pF) |                             | 3 dB MODULATION BANDWIDTH (MHz) | Typ. |                            |                 | Max.               | Vcc (volts) | Current (mA) |
| ROS-2600-1119+ | 1650        | 2600 | +6                 | -75   | -102 | -122 | -142 | 0.3    | 28                | 25-60               | 50            | 30                          | -90                             | -18  | -                          | 2.5             | 1                  | 10          | 53           |

### Pin Connections

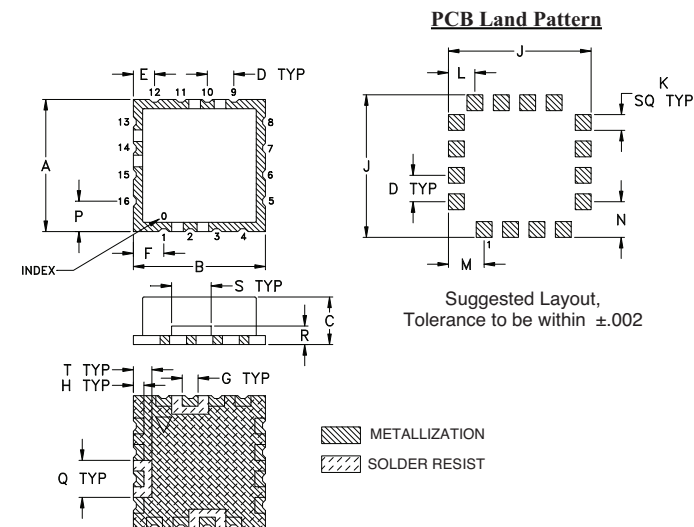
|        |                                |
|--------|--------------------------------|
| RF OUT | 10                             |
| VCC    | 14                             |
| V-TUNE | 2                              |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

### Maximum Ratings

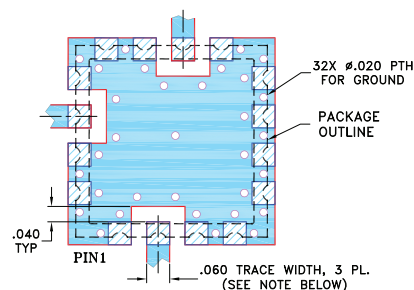
|                                      |                |
|--------------------------------------|----------------|
| Operating Temperature                | -55°C to 85°C  |
| Storage Temperature                  | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc)   | 10.5V          |
| Absolute Max. Tuning Voltage (Vtune) | 30.0V          |
| All specifications                   | 50 ohm system  |

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

### Outline Drawing



### Demo Board MCL P/N: TB-10 Suggested PCB Layout (PL-012)



#### NOTES:

1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  2. BOTTOM SIDE OF THE BOTTOM 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)

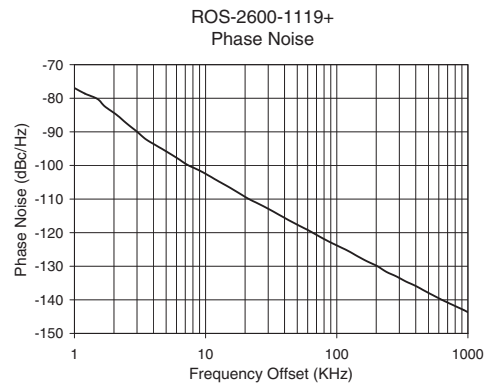
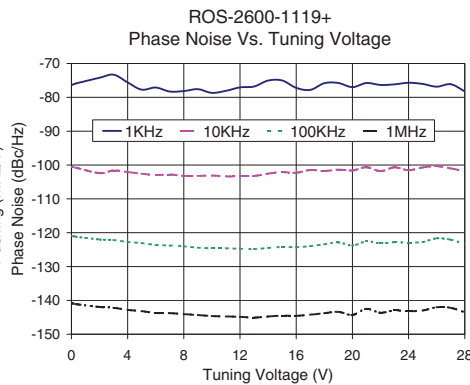
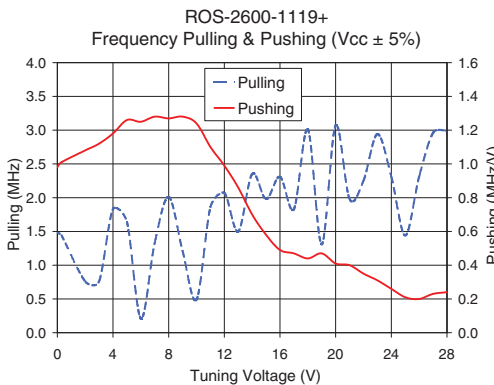
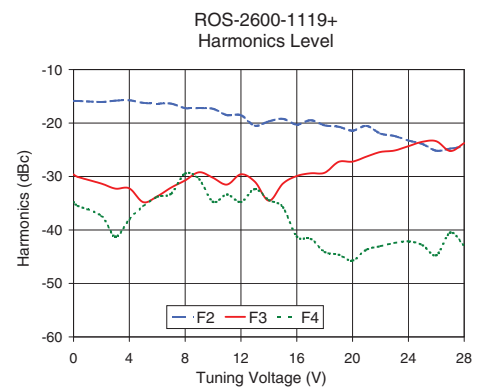
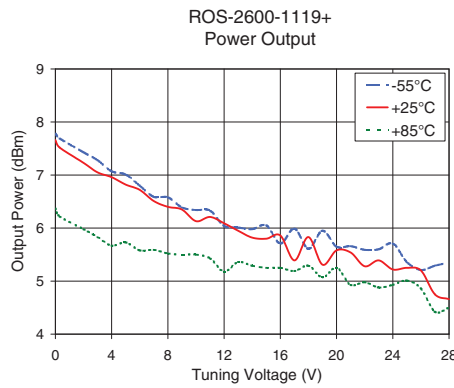
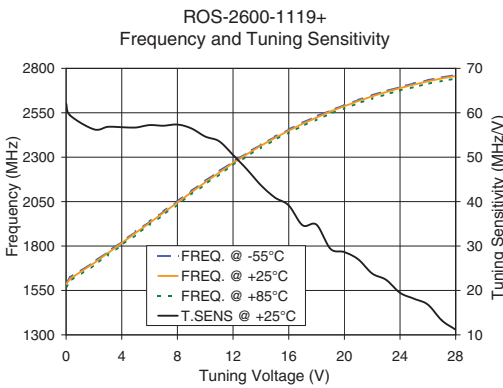
|       |       |      |      |      |      |      |      |       |      |      |      |      |      |      |      |      |      |       |
|-------|-------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|-------|
| A     | B     | C    | D    | E    | F    | G    | H    | J     | K    | L    | M    | N    | P    | Q    | R    | S    | T    | wt.   |
| .500  | .500  | .180 | .100 | .080 | .115 | .060 | .040 | .540  | .060 | .100 | .135 | .135 | .115 | .140 | .070 | .150 | .070 | grams |
| 12.70 | 12.70 | 4.57 | 2.54 | 2.03 | 2.92 | 1.52 | 1.02 | 13.72 | 1.52 | 2.54 | 3.43 | 3.43 | 2.92 | 3.56 | 1.78 | 3.81 | 1.78 | 1.0   |

# Performance Data & Curves\*

# ROS-2600-1119+

| 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 2125 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
|        |                   | -55°C           | +25°C  | +85°C  | -55°C              | +25°C | +85°C |          | F2              | F3    | F4    |                    |                  | 1kHz                            | 10kHz  | 100kHz | 1MHz   |                   |                                  |
| 0.00   | 62.08             | 1593.1          | 1585.0 | 1570.1 | 7.78               | 7.66  | 6.37  | 44.67    | -15.9           | -29.6 | -34.8 | 0.98               | 1.48             | -76.4                           | -100.5 | -120.9 | -140.8 | 1.0               | -76.96                           |
| 0.30   | 59.38             | 1623.8          | 1616.1 | 1602.4 | 7.69               | 7.52  | 6.22  | 44.69    | -15.9           | -30.1 | -35.5 | 1.01               | 1.44             | -75.9                           | -100.8 | -121.2 | -141.1 | 2.1               | -84.94                           |
| 2.00   | 56.27             | 1711.2          | 1703.8 | 1691.7 | 7.43               | 7.23  | 5.98  | 44.78    | -16.1           | -31.3 | -37.4 | 1.08               | 0.76             | -74.2                           | -102.4 | -122.0 | -142.0 | 3.5               | -92.21                           |
| 3.00   | 56.84             | 1767.6          | 1760.1 | 1748.2 | 7.28               | 7.05  | 5.83  | 44.82    | -15.8           | -32.3 | -41.2 | 1.12               | 0.76             | -73.3                           | -101.6 | -122.2 | -142.2 | 6.1               | -97.88                           |
| 5.00   | 56.68             | 1881.1          | 1873.7 | 1861.9 | 7.01               | 6.82  | 5.73  | 44.98    | -16.2           | -34.8 | -35.6 | 1.26               | 1.64             | -77.7                           | -102.6 | -123.1 | -143.2 | 8.7               | -101.25                          |
| 7.00   | 57.09             | 1995.1          | 1987.6 | 1975.9 | 6.59               | 6.51  | 5.59  | 45.13    | -16.4           | -32.1 | -33.2 | 1.28               | 1.33             | -78.3                           | -102.8 | -123.8 | -143.8 | 10.0              | -102.49                          |
| 8.00   | 57.35             | 2052.5          | 2044.6 | 2033.3 | 6.58               | 6.40  | 5.52  | 45.18    | -17.2           | -30.7 | -29.5 | 1.27               | 2.01             | -78.2                           | -103.2 | -124.0 | -144.1 | 21.1              | -109.87                          |
| 10.00  | 54.64             | 2166.0          | 2158.5 | 2147.0 | 6.34               | 6.13  | 5.50  | 45.32    | -17.3           | -30.2 | -34.7 | 1.24               | 0.49             | -78.7                           | -103.1 | -124.6 | -144.6 | 36.1              | -114.63                          |
| 11.00  | 53.58             | 2220.9          | 2213.1 | 2202.3 | 6.33               | 6.21  | 5.43  | 45.36    | -18.5           | -31.5 | -33.4 | 1.10               | 1.86             | -78.1                           | -103.4 | -124.6 | -144.7 | 61.6              | -119.43                          |
| 12.00  | 50.51             | 2274.3          | 2266.7 | 2255.8 | 6.04               | 6.09  | 5.18  | 45.40    | -18.5           | -29.6 | -34.8 | 0.99               | 2.07             | -77.1                           | -103.3 | -124.8 | -144.9 | 86.4              | -122.59                          |
| 13.00  | 47.25             | 2324.3          | 2317.2 | 2305.8 | 6.01               | 5.95  | 5.36  | 45.42    | -20.5           | -31.0 | -32.4 | 0.86               | 1.50             | -76.8                           | -103.2 | -124.8 | -145.1 | 100.0             | -123.79                          |
| 14.00  | 43.70             | 2371.2          | 2364.5 | 2353.2 | 5.98               | 5.82  | 5.29  | 45.39    | -19.7           | -34.5 | -34.4 | 0.70               | 2.35             | -75.1                           | -102.5 | -124.5 | -144.8 | 145.0             | -127.09                          |
| 16.00  | 39.13             | 2456.4          | 2449.1 | 2438.2 | 5.71               | 5.86  | 5.25  | 45.33    | -20.3           | -29.9 | -41.2 | 0.49               | 2.31             | -77.2                           | -102.3 | -124.3 | -144.6 | 170.2             | -128.54                          |
| 18.00  | 34.80             | 2530.5          | 2522.9 | 2511.4 | 5.61               | 5.83  | 5.29  | 45.24    | -20.4           | -29.3 | -44.1 | 0.44               | 3.01             | -75.8                           | -101.8 | -123.4 | -143.8 | 203.5             | -129.97                          |
| 20.00  | 28.63             | 2594.0          | 2587.1 | 2574.8 | 5.65               | 5.58  | 5.25  | 45.16    | -21.4           | -27.2 | -45.7 | 0.41               | 3.07             | -77.0                           | -101.6 | -123.8 | -144.3 | 285.6             | -133.06                          |
| 22.00  | 23.82             | 2648.7          | 2642.7 | 2629.5 | 5.59               | 5.28  | 4.98  | 45.04    | -22.0           | -25.4 | -43.0 | 0.35               | 2.25             | -76.4                           | -101.8 | -123.2 | -143.6 | 335.4             | -134.52                          |
| 24.00  | 19.47             | 2694.6          | 2688.9 | 2675.3 | 5.71               | 5.22  | 4.93  | 44.94    | -23.3           | -24.3 | -42.1 | 0.26               | 2.31             | -75.7                           | -101.5 | -122.9 | -143.2 | 470.7             | -137.38                          |
| 25.00  | 18.14             | 2715.8          | 2708.4 | 2694.7 | 5.36               | 5.25  | 5.01  | 44.91    | -23.9           | -23.5 | -42.8 | 0.21               | 1.44             | -76.0                           | -100.7 | -122.7 | -143.0 | 562.6             | -138.97                          |
| 27.00  | 13.26             | 2748.9          | 2743.3 | 2729.2 | 5.29               | 4.75  | 4.42  | 44.82    | -24.8           | -25.2 | -40.5 | 0.23               | 2.96             | -76.1                           | -101.0 | -122.1 | -142.2 | 927.2             | -143.03                          |
| 28.00  | 11.16             | 2762.6          | 2756.6 | 2742.1 | 5.35               | 4.66  | 4.50  | 44.83    | -24.4           | -23.8 | -43.0 | 0.24               | 2.99             | -78.2                           | -101.8 | -123.3 | -143.5 | 1000.0            | -143.70                          |

\*at 25°C unless mentioned otherwise



For detailed performance specs & shopping online see web site

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