

Surface Mount Voltage Controlled Oscillator

ROS-4040+

Linear Tuning 3685 to 4040 MHz



Features

- Low phase noise
- Low pushing
- Low pulling
- Aqueous washable

Applications

- Wireless communications
- WiMAX

CASE STYLE: CK605
PRICE: \$15.95 ea. QTY (5-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify 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 _r (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. | Max. |
| ROS-4040+ | 3685 | 4040 | +6 | -70 | -96 | -117 | -138 | 1 | 18 | 39 - 54 | 20 | 170 | -90 | -20 | -10 | 5 | 0.5 | 8 | 43 |

Pin Connections

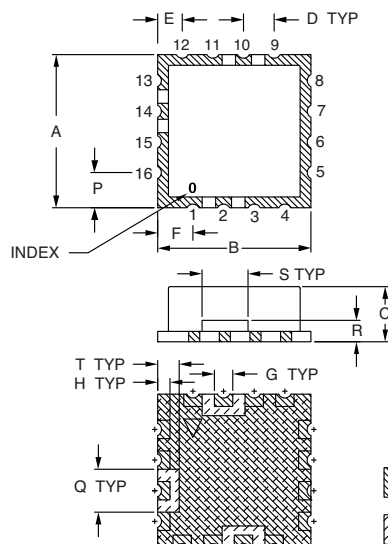
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

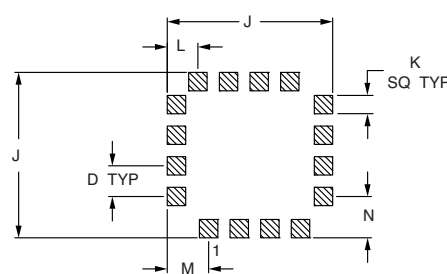
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 9V |
| Absolute Max. Tuning Voltage (Vtune) | 20V |
| All specifications | 50 ohm system |

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

Outline Drawing



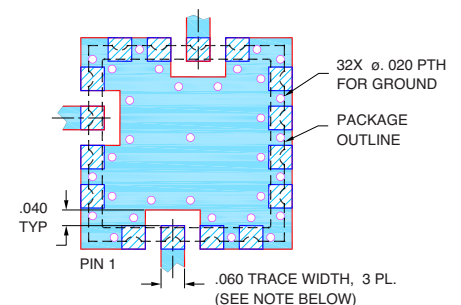
PCB Land Pattern



SUGGESTED LAYOUT, TOLERANCE TO BE WITHIN ±0.002



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



- NOTES:**
1. TRACE WIDTH IS SHOWN FOR RF4 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 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 | 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 |



For detailed performance specs & shopping online see web site

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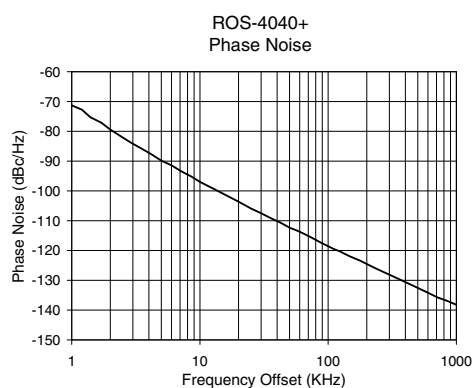
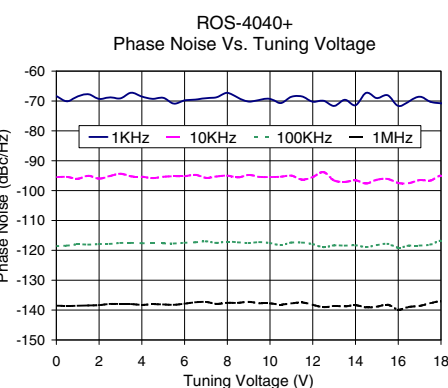
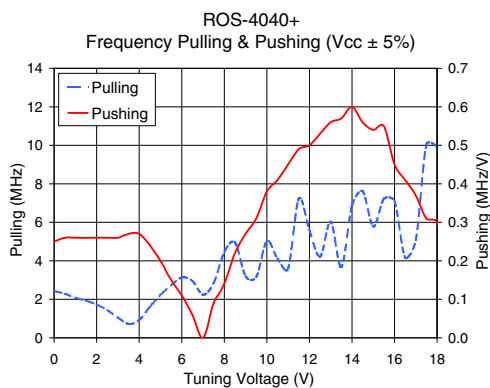
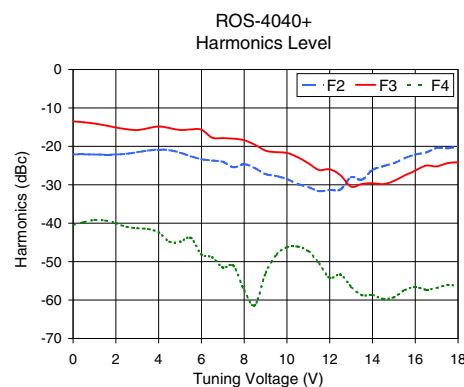
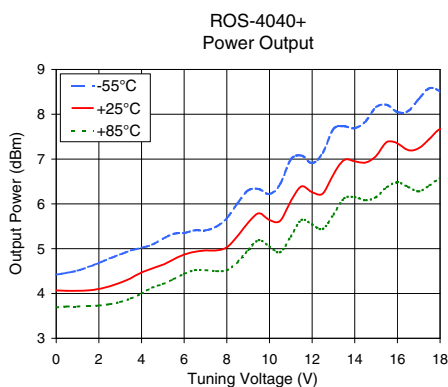
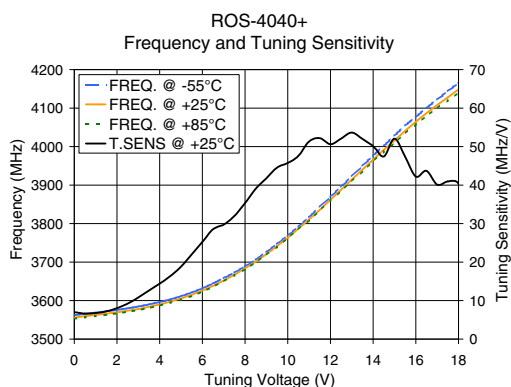
REV. OR
M119372
EDR-7633/1F1
ROS-4040+
RAV
090816
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Performance Data & Curves*

ROS-4040+

| 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 3910MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|-------|--------|--------|-------------------|---------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 7.01 | 3562.2 | 3556.0 | 3553.0 | 4.42 | 4.07 | 3.69 | 37.49 | -22.1 | -13.5 | -40.5 | 0.25 | 2.43 | -68.4 | -95.5 | -118.6 | -138.5 | 1.0 | -71.29 |
| 0.50 | 6.63 | 3565.6 | 3559.5 | 3556.5 | 4.46 | 4.06 | 3.71 | 37.49 | -22.1 | -13.7 | -39.7 | 0.26 | 2.29 | -70.1 | -95.4 | -118.4 | -138.6 | 2.0 | -79.42 |
| 1.00 | 6.77 | 3568.8 | 3562.8 | 3559.8 | 4.51 | 4.06 | 3.71 | 37.48 | -22.1 | -14.1 | -39.2 | 0.26 | 2.08 | -68.5 | -96.0 | -118.0 | -138.5 | 3.5 | -85.80 |
| 2.00 | 8.03 | 3575.7 | 3569.8 | 3566.9 | 4.68 | 4.10 | 3.73 | 37.47 | -22.1 | -15.1 | -40.0 | 0.26 | 1.73 | -69.3 | -96.0 | -117.9 | -138.4 | 6.0 | -91.40 |
| 3.00 | 10.80 | 3584.5 | 3578.4 | 3575.4 | 4.87 | 4.24 | 3.81 | 37.44 | -21.5 | -15.8 | -41.3 | 0.26 | 1.05 | -69.1 | -94.4 | -117.5 | -138.0 | 8.5 | -95.10 |
| 4.00 | 14.39 | 3596.2 | 3590.1 | 3587.0 | 5.02 | 4.47 | 4.00 | 37.41 | -20.8 | -14.8 | -42.4 | 0.27 | 0.93 | -68.5 | -95.3 | -117.6 | -138.3 | 10.0 | -96.98 |
| 5.00 | 18.82 | 3611.3 | 3605.5 | 3602.6 | 5.22 | 4.64 | 4.21 | 37.37 | -21.6 | -15.8 | -44.8 | 0.20 | 2.23 | -68.9 | -95.4 | -117.7 | -138.1 | 20.8 | -104.04 |
| 6.00 | 25.24 | 3631.9 | 3625.9 | 3623.2 | 5.35 | 4.87 | 4.44 | 37.31 | -23.3 | -15.7 | -48.1 | 0.11 | 3.13 | -69.8 | -95.2 | -117.5 | -137.9 | 35.5 | -109.10 |
| 7.00 | 29.74 | 3658.3 | 3652.8 | 3650.2 | 5.41 | 4.96 | 4.52 | 37.22 | -24.0 | -17.9 | -51.5 | 0.00 | 2.24 | -69.0 | -95.7 | -117.0 | -137.3 | 60.7 | -113.76 |
| 8.00 | 35.31 | 3688.7 | 3683.6 | 3681.8 | 5.68 | 5.03 | 4.52 | 37.13 | -24.6 | -18.4 | -57.5 | 0.14 | 4.45 | -67.3 | -95.0 | -117.1 | -137.6 | 86.7 | -117.32 |
| 9.00 | 41.79 | 3726.0 | 3720.8 | 3719.0 | 6.30 | 5.58 | 4.97 | 37.00 | -27.2 | -21.1 | -53.0 | 0.27 | 3.20 | -70.2 | -94.7 | -117.6 | -137.2 | 100.0 | -118.49 |
| 10.00 | 45.75 | 3768.8 | 3764.0 | 3762.6 | 6.22 | 5.64 | 5.05 | 36.88 | -28.5 | -21.7 | -46.3 | 0.38 | 5.02 | -69.3 | -95.5 | -117.6 | -137.8 | 148.1 | -121.98 |
| 11.00 | 51.35 | 3816.8 | 3810.6 | 3808.7 | 6.99 | 6.06 | 5.27 | 36.76 | -30.6 | -24.4 | -47.3 | 0.45 | 3.60 | -68.6 | -95.0 | -117.4 | -137.8 | 177.0 | -123.37 |
| 12.00 | 50.62 | 3869.5 | 3862.4 | 3860.1 | 6.91 | 6.26 | 5.54 | 36.67 | -31.4 | -26.0 | -54.2 | 0.50 | 5.59 | -70.3 | -95.5 | -118.0 | -138.2 | 211.6 | -125.14 |
| 13.00 | 53.66 | 3922.7 | 3913.8 | 3910.0 | 7.67 | 6.66 | 5.76 | 36.58 | -28.1 | -30.5 | -56.5 | 0.56 | 6.02 | -71.7 | -96.6 | -118.4 | -138.6 | 302.4 | -128.22 |
| 14.00 | 50.14 | 3976.7 | 3966.6 | 3961.7 | 7.69 | 6.95 | 6.15 | 36.53 | -26.2 | -29.6 | -58.7 | 0.60 | 6.87 | -71.4 | -96.6 | -118.3 | -138.4 | 361.5 | -129.75 |
| 15.00 | 52.05 | 4028.4 | 4015.4 | 4009.8 | 8.16 | 7.07 | 6.15 | 36.47 | -24.4 | -29.0 | -59.3 | 0.54 | 5.79 | -69.0 | -96.4 | -118.2 | -138.9 | 507.5 | -132.67 |
| 16.00 | 42.21 | 4077.0 | 4065.1 | 4058.7 | 8.05 | 7.35 | 6.48 | 36.45 | -22.1 | -26.3 | -56.6 | 0.45 | 7.09 | -71.7 | -97.5 | -119.1 | -139.8 | 606.7 | -134.27 |
| 17.00 | 40.11 | 4122.1 | 4108.0 | 4100.2 | 8.34 | 7.24 | 6.28 | 36.41 | -20.4 | -25.2 | -56.9 | 0.37 | 5.07 | -68.6 | -96.5 | -118.4 | -138.6 | 851.6 | -136.92 |
| 18.00 | 40.39 | 4165.1 | 4148.6 | 4140.0 | 8.51 | 7.67 | 6.58 | 36.38 | -20.1 | -24.2 | -56.4 | 0.30 | 9.79 | -70.8 | -95.0 | -116.8 | -137.1 | 1000.0 | -138.20 |

*at 25°C unless mentioned otherwise



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