

Voltage Controlled Oscillator

ROS-766+

5V Tuning for PLL IC's 730 to 766 MHz

Features

- linear tuning characteristics
- low phase noise
- low pushing
- low pulling
- 0.5-5V tuning voltage range
- aqueous washable

Applications

- PLL circuitry
- frequency synthesizers
- wireless microphones



CASE STYLE: CK605

+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. | Typ. | | | | Min. | Max. | Typ. | | Typ. | Typ. | | | Typ. | Max. | Max. |
| | | | | | 1 | 10 | 100 | 1000 | | | | | | | | | | | |
| ROS-766+ | 730 | 766 | +0.5 | -91 | -113 | -134 | -154 | 0.5 | 5 | 12-13 | 60 | 80 | -90 | -23 | -15 | 0.6 | 0.1 | 5 | 18 |

Pin Connections

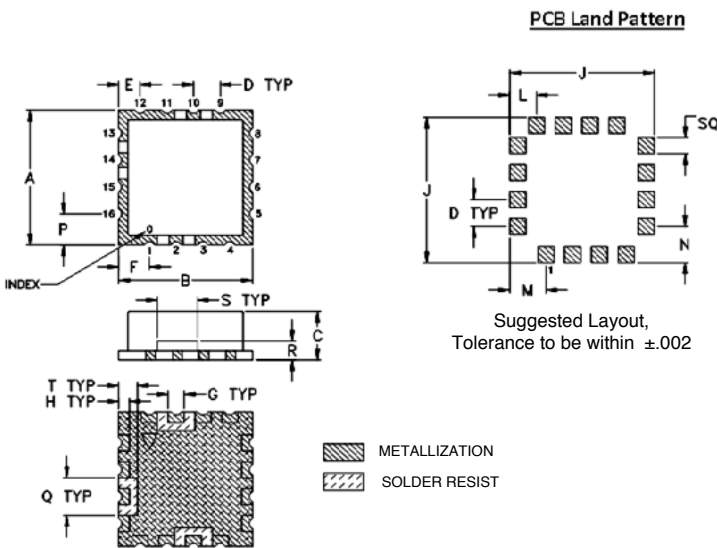
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

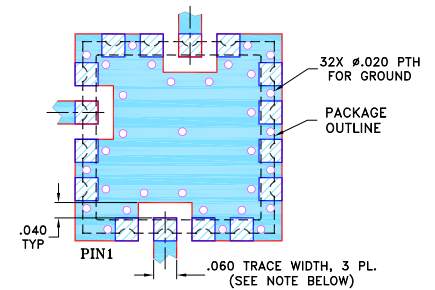
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7V |
| Absolute Max. Tuning Voltage (Vtune) | 7V |
| All specifications | 50 ohm system |

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

Outline Drawing



Demo Board MCL P/N: TB-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 | .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 |

Notes

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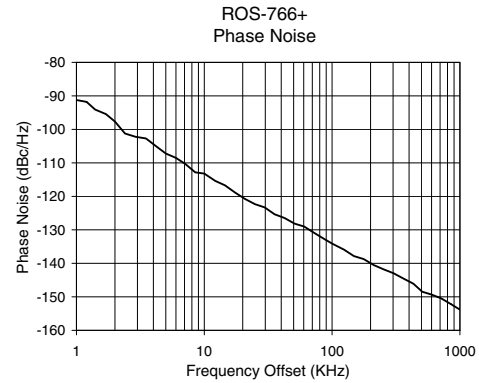
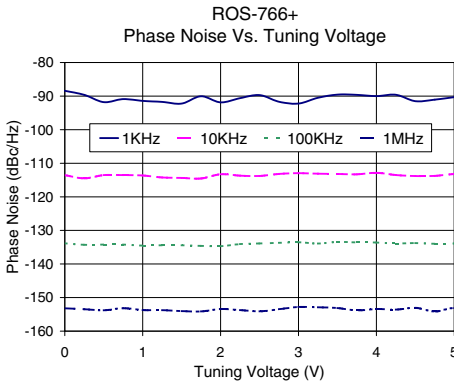
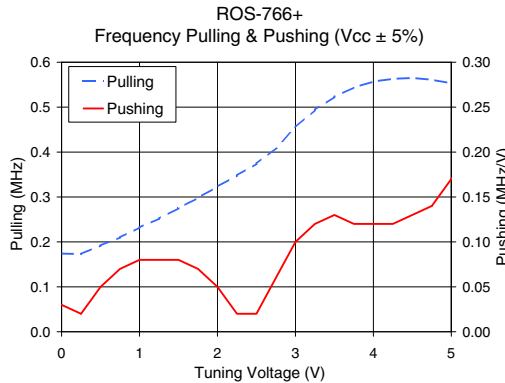
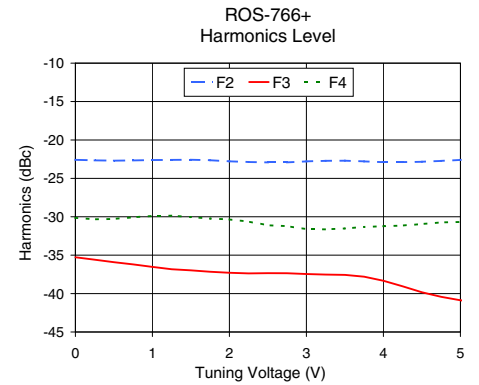
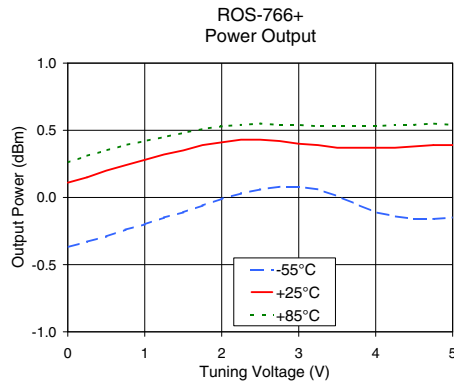
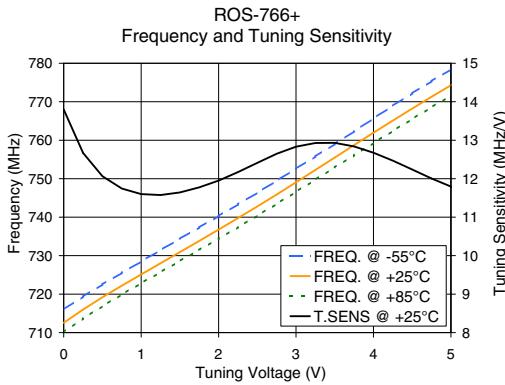


Performance Data & Curves*

ROS-766+

| 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 744 MHz (dBc/Hz) |
|--------|-------------------|-----------------|-------|-------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|---------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 13.80 | 716.0 | 712.6 | 710.1 | -0.37 | 0.11 | 0.26 | 12.82 | -22.6 | -35.3 | -30.1 | 0.03 | 0.17 | -88.4 | -113.5 | -133.8 | -153.2 | 1.0 | -91.24 |
| 0.50 | 12.07 | 722.5 | 719.2 | 716.9 | -0.29 | 0.20 | 0.35 | 12.88 | -22.7 | -35.9 | -30.3 | 0.05 | 0.19 | -91.8 | -113.5 | -134.2 | -153.8 | 2.0 | -97.68 |
| 0.75 | 11.75 | 725.5 | 722.2 | 719.9 | -0.24 | 0.24 | 0.39 | 12.91 | -22.7 | -36.2 | -30.1 | 0.07 | 0.21 | -90.9 | -113.5 | -134.2 | -153.2 | 3.5 | -102.70 |
| 1.00 | 11.60 | 728.5 | 725.1 | 722.8 | -0.20 | 0.28 | 0.42 | 12.93 | -22.6 | -36.5 | -29.9 | 0.08 | 0.23 | -91.4 | -113.7 | -134.5 | -153.7 | 6.0 | -108.51 |
| 1.25 | 11.58 | 731.4 | 728.0 | 725.7 | -0.15 | 0.32 | 0.45 | 12.96 | -22.6 | -36.8 | -29.9 | 0.08 | 0.25 | -91.7 | -114.2 | -134.4 | -153.8 | 8.5 | -112.82 |
| 1.50 | 11.64 | 734.4 | 730.9 | 728.6 | -0.11 | 0.35 | 0.48 | 12.98 | -22.6 | -37.0 | -30.0 | 0.08 | 0.28 | -92.2 | -114.4 | -134.4 | -154.0 | 10.0 | -113.20 |
| 1.75 | 11.78 | 737.3 | 733.8 | 731.5 | -0.06 | 0.39 | 0.51 | 13.01 | -22.6 | -37.2 | -30.2 | 0.07 | 0.30 | -90.1 | -114.5 | -134.6 | -154.1 | 20.8 | -120.76 |
| 2.00 | 11.95 | 740.3 | 736.8 | 734.4 | -0.01 | 0.41 | 0.53 | 13.03 | -22.8 | -37.3 | -30.4 | 0.05 | 0.32 | -91.9 | -113.3 | -134.7 | -153.4 | 35.5 | -125.35 |
| 2.25 | 12.17 | 743.3 | 739.8 | 737.4 | 0.03 | 0.43 | 0.54 | 13.05 | -22.9 | -37.4 | -30.6 | 0.02 | 0.35 | -90.6 | -113.7 | -134.1 | -153.7 | 60.7 | -129.03 |
| 2.50 | 12.41 | 746.4 | 742.8 | 740.4 | 0.06 | 0.43 | 0.55 | 13.06 | -22.9 | -37.3 | -31.1 | 0.02 | 0.37 | -89.7 | -113.8 | -133.9 | -154.1 | 86.7 | -132.72 |
| 2.75 | 12.65 | 749.5 | 745.9 | 743.5 | 0.08 | 0.42 | 0.54 | 13.08 | -22.9 | -37.4 | -31.2 | 0.06 | 0.41 | -91.7 | -113.2 | -133.7 | -153.5 | 100.0 | -134.10 |
| 3.00 | 12.83 | 752.6 | 749.1 | 746.6 | 0.08 | 0.40 | 0.54 | 13.09 | -22.8 | -37.5 | -31.6 | 0.10 | 0.46 | -92.2 | -112.9 | -133.5 | -152.8 | 148.1 | -137.83 |
| 3.25 | 12.93 | 755.8 | 752.3 | 749.8 | 0.06 | 0.39 | 0.53 | 13.11 | -22.7 | -37.5 | -31.6 | 0.12 | 0.49 | -90.5 | -113.1 | -133.9 | -152.9 | 177.0 | -138.73 |
| 3.50 | 12.93 | 759.0 | 755.5 | 752.9 | 0.01 | 0.37 | 0.53 | 13.13 | -22.7 | -37.6 | -31.5 | 0.13 | 0.52 | -89.6 | -113.2 | -133.4 | -153.1 | 211.6 | -140.50 |
| 3.75 | 12.84 | 762.3 | 758.7 | 756.1 | -0.05 | 0.37 | 0.53 | 13.15 | -22.8 | -37.8 | -31.3 | 0.12 | 0.54 | -89.6 | -113.3 | -133.6 | -153.8 | 302.4 | -142.96 |
| 4.00 | 12.68 | 765.7 | 762.0 | 759.3 | -0.11 | 0.37 | 0.53 | 13.17 | -22.9 | -38.3 | -31.2 | 0.12 | 0.56 | -90.0 | -112.9 | -133.6 | -153.4 | 361.5 | -144.55 |
| 4.25 | 12.47 | 769.0 | 765.1 | 762.4 | -0.14 | 0.37 | 0.54 | 13.20 | -22.9 | -39.1 | -31.1 | 0.12 | 0.56 | -89.6 | -113.5 | -133.9 | -153.6 | 507.5 | -148.48 |
| 4.50 | 12.24 | 772.2 | 768.2 | 765.5 | -0.16 | 0.38 | 0.54 | 13.23 | -22.8 | -39.8 | -31.0 | 0.13 | 0.57 | -91.5 | -113.8 | -133.8 | -153.1 | 600.0 | -149.33 |
| 4.75 | 12.01 | 775.4 | 771.3 | 768.6 | -0.16 | 0.39 | 0.55 | 13.25 | -22.7 | -40.4 | -30.7 | 0.14 | 0.56 | -91.1 | -113.8 | -134.0 | -154.2 | 851.6 | -152.19 |
| 5.00 | 11.79 | 778.4 | 774.3 | 771.6 | -0.15 | 0.39 | 0.54 | 13.27 | -22.6 | -40.9 | -30.7 | 0.17 | 0.55 | -90.3 | -113.2 | -133.9 | -153.1 | 1000.0 | -153.81 |

*at 25°C unless mentioned otherwise



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