

Surface Mount Voltage Controlled Oscillator

ROS-675PV+

5V Tuning for PLL IC's 655 to 675 MHz



CASE STYLE: CK605
PRICE: \$19.95 ea. QTY (5-49)

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Features

- low phase noise, -107 dBc/Hz at 10 kHz offset
- linear tuning, 10-14 MHz/V typ.
- 5V power supply
- aqueous washable
- protected by US patent 6,424,241

Applications

- PLL circuitry
- UHF
- instrumentation

Electrical Specifications

| FREQUENCY (MHz) | | POWER OUTPUT (dBm) | TUNING VOLTAGE (V) | | PHASE NOISE (dBc/Hz) SSB at offset frequencies: Typ. | | | | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | TUNING SENSITIVITY (MHz/V) | HARMONICS (dBc) | | 3 dB MODULATION BANDWIDTH (MHz) | DC OPERATING POWER | |
|-----------------|------|--------------------|--------------------|------|--|--------|---------|-------|-----------------------------|-----------------|----------------------------|-----------------|------|---------------------------------|--------------------|-------------------|
| Min. | Max. | Typ. | Min. | Max. | 1 kHz | 10 kHz | 100 kHz | 1 MHz | Typ. | Typ. | Typ. | Typ. | Max. | Typ. | Voltage (V) | Current (mA) Max. |
| 655 | 675 | 0 | 0.5 | 5.0 | -85 | -107 | -127 | -145 | 1.0 | 0.5 | 10-14 | -23 | -10 | 5.0 | 5 | 15 |

Pin Connections

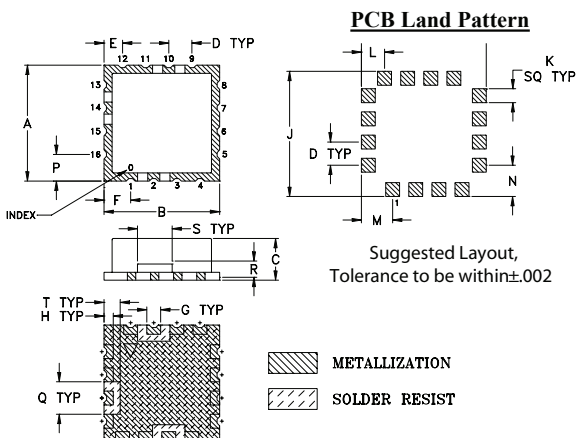
| | |
|--------|--------------------------------|
| RF OUT | 10 |
| VCC | 14 |
| V-TUNE | 2 |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

Maximum Ratings

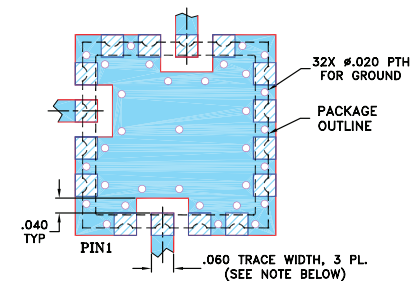
| | |
|--------------------------------------|----------------|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | +6V |
| Absolute Max. Tuning Voltage (Vtune) | +6V |

all specifications: 50 ohm system
Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Demo Board MCL PIN: 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 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 |



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I/F/R/F MICROWAVE COMPONENTS

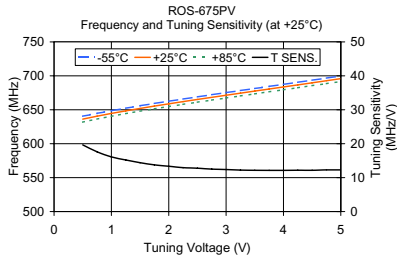
Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp.

For detailed performance specs & shipping online see web site

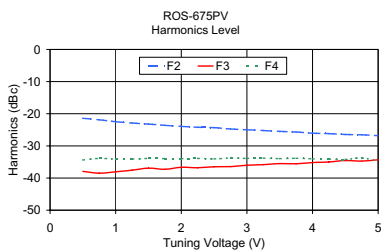
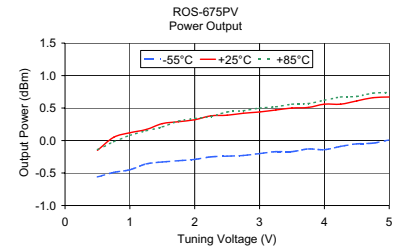
REV. F
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Performance Data & Curves

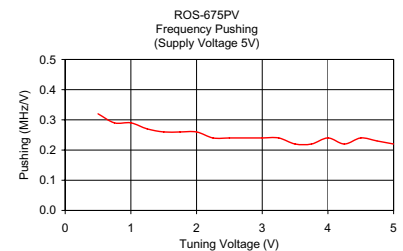
ROS-675PV+



| V TUNE | TUNING SENS. (MHz/V) | FREQUENCY (MHz) | | | POWER OUTPUT (dBm) | | |
|--------|----------------------|-----------------|--------|--------|--------------------|-------|-------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C |
| 0.50 | 19.66 | 640.48 | 636.17 | 631.77 | -0.56 | -0.15 | -0.14 |
| 0.75 | 17.62 | 644.72 | 640.57 | 636.32 | -0.49 | 0.05 | -0.02 |
| 1.00 | 16.11 | 648.68 | 644.60 | 640.44 | -0.45 | 0.12 | 0.08 |
| 1.25 | 15.21 | 652.41 | 648.40 | 644.29 | -0.36 | 0.17 | 0.15 |
| 1.50 | 14.40 | 655.94 | 652.00 | 647.94 | -0.33 | 0.26 | 0.21 |
| 1.75 | 13.77 | 659.33 | 655.45 | 651.40 | -0.31 | 0.29 | 0.30 |
| 2.00 | 13.35 | 662.65 | 658.78 | 654.75 | -0.29 | 0.32 | 0.34 |
| 2.25 | 12.94 | 665.87 | 662.02 | 657.99 | -0.25 | 0.38 | 0.37 |
| 2.50 | 12.77 | 669.06 | 665.21 | 661.18 | -0.24 | 0.39 | 0.44 |
| 2.75 | 12.51 | 672.20 | 668.34 | 664.31 | -0.23 | 0.42 | 0.46 |
| 3.00 | 12.39 | 675.29 | 671.44 | 667.39 | -0.20 | 0.44 | 0.50 |
| 3.25 | 12.22 | 678.35 | 674.49 | 670.44 | -0.17 | 0.47 | 0.52 |
| 3.50 | 12.17 | 681.39 | 677.53 | 673.47 | -0.17 | 0.50 | 0.56 |
| 3.75 | 12.15 | 684.44 | 680.57 | 676.49 | -0.13 | 0.51 | 0.57 |
| 4.00 | 12.14 | 687.48 | 683.60 | 679.51 | -0.14 | 0.56 | 0.62 |
| 4.25 | 12.19 | 690.56 | 686.65 | 682.53 | -0.09 | 0.56 | 0.67 |
| 4.50 | 12.17 | 693.64 | 689.69 | 685.56 | -0.05 | 0.61 | 0.68 |
| 4.75 | 12.29 | 696.72 | 692.77 | 688.61 | -0.04 | 0.66 | 0.73 |
| 5.00 | 12.29 | 699.81 | 695.84 | 691.67 | 0.01 | 0.67 | 0.74 |



| V TUNE | HARMONICS (dBc) | | | FREQ. PUSHING (MHz/V) |
|--------|-----------------|--------|--------|-----------------------|
| | F2 | F3 | F4 | |
| 0.50 | -21.40 | -37.92 | -34.38 | 0.32 |
| 0.75 | -21.87 | -38.49 | -33.89 | 0.29 |
| 1.00 | -22.46 | -38.05 | -34.08 | 0.29 |
| 1.25 | -22.89 | -37.55 | -34.08 | 0.27 |
| 1.50 | -23.20 | -36.92 | -33.90 | 0.26 |
| 1.75 | -23.59 | -37.29 | -33.95 | 0.26 |
| 2.00 | -23.91 | -36.65 | -33.97 | 0.26 |
| 2.25 | -24.20 | -36.80 | -33.88 | 0.24 |
| 2.50 | -24.30 | -36.49 | -34.03 | 0.24 |
| 2.75 | -24.72 | -36.44 | -33.77 | 0.24 |
| 3.00 | -24.98 | -36.03 | -33.89 | 0.24 |
| 3.25 | -25.21 | -35.84 | -33.81 | 0.24 |
| 3.50 | -25.48 | -35.49 | -33.95 | 0.22 |
| 3.75 | -25.68 | -35.57 | -33.85 | 0.22 |
| 4.00 | -26.05 | -35.18 | -34.02 | 0.24 |
| 4.25 | -26.18 | -34.99 | -34.10 | 0.22 |
| 4.50 | -26.45 | -34.56 | -34.19 | 0.24 |
| 4.75 | -26.53 | -34.72 | -33.76 | 0.23 |
| 5.00 | -26.83 | -34.32 | -34.69 | 0.22 |



For detailed performance specs & shopping online see web site

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