

## Voltage Controlled Oscillator

ROS-3555+

Linear Tuning 3000 to 3555 MHz

## Features

- linear tuning characteristics
- low phase noise
- low pushing & pulling
- aqueous washable

## Applications

- defense systems
- wireless communications
- SAP/ SAB
- satellite systems
- radar



CASE STYLE: CK605

PRICE: \$15.95 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 dBr (MHz) | PUSHING (MHz/V) | DC OPERATING POWER |      |
|-----------|-------------|------|--------------------|--------------------------------------------------|-----|------|------|-------------------|----------------------|---------------|---------------------------------|------|-----------------------------|-----------------|------|-----------------------------|-----------------|--------------------|------|
|           |             |      |                    |                                                  |     |      |      | VOLTAGE RANGE (V) | SENSI-TIVITY (MHz/V) | PORT CAP (pF) | 3 dB MODULATION BANDWIDTH (MHz) |      |                             |                 |      |                             |                 |                    |      |
|           | Min.        | Max. |                    | Typ.                                             | 1   | 10   | 100  | 1000              | Min.                 | Max.          | Typ.                            | Typ. |                             | Typ.            | Typ. | Typ.                        | Max.            | Typ.               | Typ. |
| ROS-3555+ | 3000        | 3555 | +5                 | -71                                              | -97 | -118 | -138 | 0.5               | 15                   | 60-70         | 12                              | 55   | -90                         | -25             | -15  | 1.5                         | 3               | 5                  | 41   |

## Pin Connections

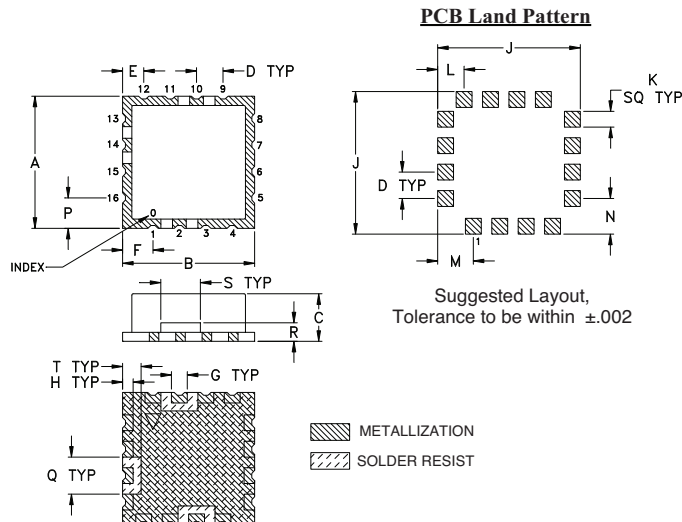
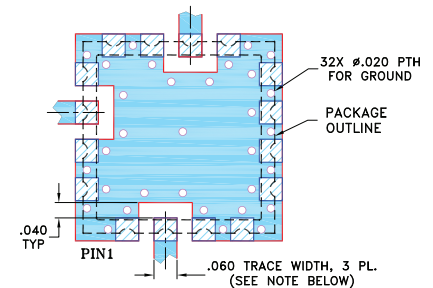
|        |                                |
|--------|--------------------------------|
| RF OUT | 10                             |
| VCC    | 14                             |
| V-TUNE | 2                              |
| GROUND | 1,3,4,5,6,7,8,9,11,12,13,15,16 |

## 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) | 16V            |
| 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:

- TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030"  $\pm$  .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- 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-3555+

| V<br>TUNE | TUNE<br>SENS<br>(MHz/V) | FREQUENCY<br>(MHz) |        |        | POWER OUTPUT<br>(dBm) |       |       | Icc<br>(mA) | HARMONICS (dBc) |       |       | FREQ.<br>PUSH<br>(MHz/V) | FREQ.<br>PULL<br>(MHz) | PHASE NOISE (dBc/Hz)<br>at offsets |       |        |        | FREQ<br>OFFSET<br>(KHz) | PHASE<br>NOISE at<br>3278 MHz<br>(dBc/Hz) |
|-----------|-------------------------|--------------------|--------|--------|-----------------------|-------|-------|-------------|-----------------|-------|-------|--------------------------|------------------------|------------------------------------|-------|--------|--------|-------------------------|-------------------------------------------|
|           |                         | -55°C              | +25°C  | +85°C  | -55°C                 | +25°C | +85°C |             | F2              | F3    | F4    |                          |                        | 1kHz                               | 10kHz | 100kHz | 1MHz   |                         |                                           |
| 0.00      | 113.54                  | 2799.8             | 2782.5 | 2764.9 | 5.50                  | 5.34  | 4.70  | 34.22       | -26.2           | -33.0 | -54.0 | 1.41                     | 2.22                   | -66.8                              | -92.8 | -113.4 | -133.8 | 1.0                     | -70.09                                    |
| 0.50      | 94.59                   | 2854.5             | 2839.2 | 2831.6 | 5.48                  | 5.26  | 4.58  | 34.28       | -26.0           | -34.7 | -56.0 | 2.05                     | 1.07                   | -68.7                              | -94.4 | -115.6 | -135.6 | 2.0                     | -78.93                                    |
| 1.00      | 83.58                   | 2900.2             | 2886.5 | 2879.1 | 5.42                  | 5.28  | 4.75  | 34.27       | -27.1           | -37.2 | -56.5 | 2.05                     | 2.07                   | -69.9                              | -95.6 | -116.2 | -136.0 | 3.5                     | -85.37                                    |
| 2.00      | 69.89                   | 2978.5             | 2966.1 | 2958.5 | 5.48                  | 5.27  | 4.82  | 34.31       | -26.9           | -38.6 | -57.7 | 2.43                     | 1.34                   | -70.4                              | -95.4 | -116.5 | -136.8 | 6.0                     | -90.90                                    |
| 3.00      | 64.51                   | 3047.6             | 3035.9 | 3028.0 | 5.40                  | 5.17  | 4.73  | 34.36       | -25.9           | -37.0 | -60.3 | 2.56                     | 1.36                   | -70.5                              | -96.1 | -117.1 | -137.4 | 8.5                     | -94.45                                    |
| 4.00      | 62.08                   | 3113.0             | 3101.1 | 3092.8 | 5.30                  | 5.07  | 4.82  | 34.40       | -26.2           | -39.7 | -58.4 | 2.56                     | 2.35                   | -70.4                              | -96.2 | -117.5 | -137.4 | 10.0                    | -96.04                                    |
| 5.00      | 61.06                   | 3174.7             | 3162.8 | 3154.2 | 5.21                  | 5.05  | 4.75  | 34.49       | -25.4           | -42.6 | -53.8 | 2.56                     | 2.27                   | -70.9                              | -95.7 | -117.9 | -137.8 | 20.8                    | -103.66                                   |
| 6.00      | 60.42                   | 3236.1             | 3224.2 | 3215.2 | 5.22                  | 4.98  | 4.74  | 34.56       | -24.7           | -39.0 | -56.3 | 2.69                     | 2.06                   | -72.8                              | -96.2 | -117.8 | -137.9 | 35.5                    | -108.90                                   |
| 7.00      | 61.06                   | 3297.3             | 3285.1 | 3275.8 | 5.10                  | 4.98  | 4.83  | 34.66       | -26.4           | -41.3 | -59.0 | 3.07                     | 1.34                   | -70.9                              | -96.9 | -118.0 | -138.3 | 60.7                    | -113.50                                   |
| 8.00      | 61.70                   | 3358.8             | 3346.6 | 3336.9 | 5.13                  | 4.97  | 4.77  | 34.82       | -26.6           | -43.0 | -57.3 | 3.07                     | 0.57                   | -71.5                              | -97.0 | -118.6 | -139.1 | 86.7                    | -116.93                                   |
| 9.00      | 63.74                   | 3422.0             | 3409.5 | 3399.5 | 4.90                  | 4.79  | 4.77  | 34.96       | -25.0           | -43.0 | -57.7 | 3.33                     | 0.43                   | -70.4                              | -97.5 | -118.5 | -138.8 | 100.0                   | -118.09                                   |
| 10.00     | 66.94                   | 3486.9             | 3474.0 | 3463.7 | 4.94                  | 4.93  | 4.73  | 35.13       | -25.2           | -44.8 | -59.4 | 3.33                     | 0.82                   | -69.5                              | -96.6 | -118.7 | -139.1 | 148.1                   | -121.59                                   |
| 11.00     | 68.74                   | 3554.3             | 3541.3 | 3530.8 | 5.02                  | 4.82  | 4.63  | 35.36       | -24.2           | -46.0 | -59.4 | 3.46                     | 0.97                   | -70.0                              | -96.2 | -119.0 | -139.1 | 177.0                   | -123.14                                   |
| 12.00     | 69.63                   | 3624.3             | 3610.7 | 3599.9 | 4.96                  | 4.85  | 4.73  | 35.57       | -23.8           | -45.8 | -59.6 | 2.94                     | 1.08                   | -69.8                              | -96.1 | -118.9 | -138.9 | 211.6                   | -124.82                                   |
| 12.50     | 68.61                   | 3659.1             | 3645.5 | 3634.7 | 5.10                  | 4.93  | 4.69  | 35.71       | -23.9           | -48.4 | -59.4 | 2.30                     | 1.53                   | -69.7                              | -95.5 | -118.5 | -138.7 | 302.4                   | -127.91                                   |
| 13.00     | 67.84                   | 3693.7             | 3679.8 | 3669.2 | 5.02                  | 4.98  | 4.67  | 35.80       | -23.8           | -48.3 | -59.5 | 1.28                     | 0.88                   | -68.4                              | -95.9 | -117.9 | -138.3 | 361.5                   | -129.48                                   |
| 13.50     | 64.77                   | 3727.4             | 3713.7 | 3703.3 | 4.91                  | 4.84  | 4.67  | 35.91       | -23.7           | -48.1 | -58.8 | 0.00                     | 1.23                   | -66.8                              | -95.4 | -117.8 | -137.7 | 507.5                   | -132.39                                   |
| 14.00     | 61.95                   | 3759.8             | 3746.1 | 3735.8 | 5.01                  | 4.81  | 4.58  | 36.01       | -24.0           | -46.1 | -59.5 | 1.28                     | 1.44                   | -68.7                              | -94.7 | -117.2 | -137.4 | 606.7                   | -133.97                                   |
| 14.50     | 59.26                   | 3791.0             | 3777.1 | 3767.0 | 4.92                  | 4.90  | 4.49  | 36.06       | -23.5           | -44.3 | -54.6 | 2.82                     | 1.13                   | -68.4                              | -94.2 | -116.8 | -137.1 | 851.6                   | -136.90                                   |
| 15.00     | 54.78                   | 3820.7             | 3806.7 | 3796.7 | 4.73                  | 4.71  | 4.48  | 36.12       | -24.0           | -45.3 | -45.3 | 4.22                     | 1.71                   | -67.1                              | -93.9 | -116.0 | -136.4 | 1000.0                  | -138.13                                   |

\*at 25°C unless mentioned otherwise

