

# Surface Mount Voltage Controlled Oscillator

## JTOS-1025P

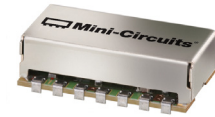
5V Tuning for PLL IC's 680 to 755 MHz

### Features

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

### Applications

- PLL circuitry
- measurement instrumentation
- frequency synthesizers



CASE STYLE: BK377  
PRICE: \$19.95 ea. QTY (20)

### Electrical Specifications

| FREQUENCY (MHz) |      | POWER OUTPUT (dBm) | TUNING VOLTAGE (V) |      | PHASE NOISE (dBc/Hz)<br>SSB at offset frequencies:<br>Typ. |        |         |       | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | TUNING SENSITIVITY (MHz/V) | HARMONICS (dBc) |      | 3 dB MODULATION BANDWIDTH (MHz) | POWER SUPPLY |                   |
|-----------------|------|--------------------|--------------------|------|--|--------|---------|-------|-----------------------------|-----------------|----------------------------|-----------------|------|---------------------------------|--------------|-------------------|
| Min.            | Max. | Typ.               | Min.               | Max. | 1 kHz  | 10 kHz | 100 kHz | 1 MHz | Typ.                        | Typ.            | Typ.                       | Typ.            | Max. | Typ.                            | Voltage (V)  | Current (mA) Max. |
| 680             | 755  | +9                 | 0.5                | 5.0  | -70  | -94    | -114    | -134  | 5.0                         | 0.6             | 30-40                      | -27             | -20  | 0.1                             | 12           | 22                |

### Pin Connections

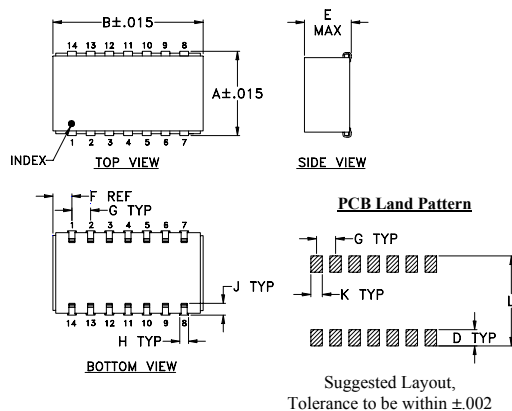
|        |                           |
|--------|---------------------------|
| RF OUT | 13                        |
| VCC    | 2                         |
| V-TUNE | 5                         |
| GROUND | 1,3,4,6,7,8,9,10,11,12,14 |

### Maximum Ratings

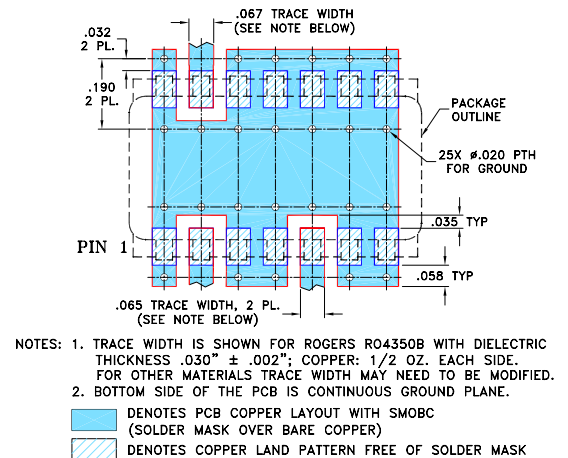
|                                      |                |
|--------------------------------------|----------------|
| Operating Temperature                | -55°C to 85°C  |
| Storage Temperature                  | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc)   | +16V           |
| Absolute 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 PIN: TB-04 Suggested PCB Layout (PL-005)



### Outline Dimensions (inch/mm)

| A     | B     | C  | D    | E    | F    | G    | H    | J    | K    | L     | wt    |
|-------|-------|----|------|------|------|------|------|------|------|-------|-------|
| .505  | .800  | -- | .100 | .250 | .100 | .100 | .047 | .065 | .065 | .525  | grams |
| 12.83 | 20.32 | -- | 2.54 | 6.35 | 2.54 | 2.54 | 1.19 | 1.65 | 1.65 | 13.34 | 3.0   |

### Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document 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](http://www.minicircuits.com/MCLStore/terms.jsp)

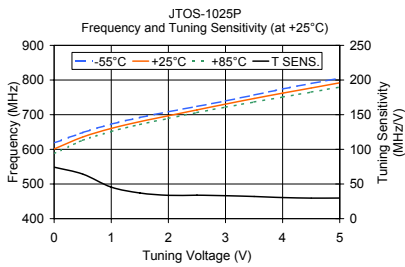


[www.minicircuits.com](http://www.minicircuits.com) P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

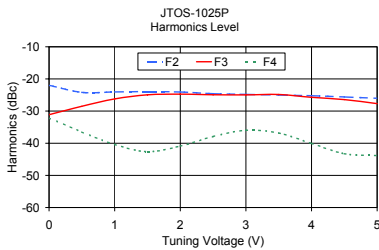
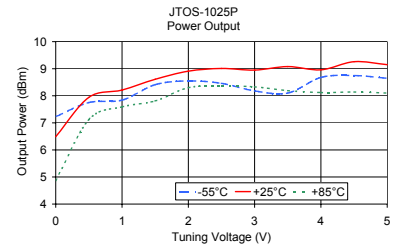
REV. C  
M149186  
JTOS-1025P  
FL/TD/CP  
141204  
Page 1 of 2

# Performance Data & Curves

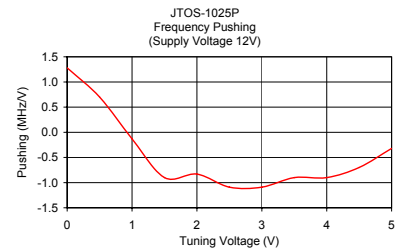
# JTOS-1025P



| V TUNE | TUNING SENS. (MHz/V) | FREQUENCY (MHz) |        |        | POWER OUTPUT (dBm) |       |       |
|--------|----------------------|-----------------|--------|--------|--------------------|-------|-------|
|        |                      | -55°C           | +25°C  | +85°C  | -55°C              | +25°C | +85°C |
| 0.00   | 74.25                | 618.42          | 600.96 | 587.81 | 7.23               | 6.49  | 4.87  |
| 0.50   | 64.32                | 648.48          | 635.61 | 626.06 | 7.75               | 7.94  | 7.12  |
| 1.00   | 45.46                | 672.76          | 660.32 | 651.44 | 7.84               | 8.21  | 7.59  |
| 1.50   | 37.02                | 691.93          | 679.74 | 671.51 | 8.41               | 8.61  | 7.81  |
| 2.00   | 33.63                | 708.39          | 696.92 | 689.26 | 8.55               | 8.91  | 8.30  |
| 2.50   | 33.85                | 723.86          | 713.86 | 706.14 | 8.46               | 9.01  | 8.36  |
| 3.00   | 33.14                | 739.79          | 730.49 | 721.74 | 8.18               | 8.95  | 8.33  |
| 3.50   | 32.01                | 756.87          | 746.67 | 736.54 | 8.10               | 9.08  | 8.19  |
| 4.00   | 30.49                | 774.28          | 762.14 | 750.97 | 8.68               | 8.96  | 8.12  |
| 4.50   | 29.59                | 790.17          | 777.03 | 765.28 | 8.75               | 9.26  | 8.14  |
| 5.00   | 29.72                | 805.25          | 791.89 | 779.85 | 8.65               | 9.15  | 8.10  |



| V TUNE | HARMONICS (dBc) |        |        | FREQ. PUSHING (MHz/V) |
|--------|-----------------|--------|--------|-----------------------|
|        | F2              | F3     | F4     |                       |
| 0.00   | -21.96          | -31.12 | -32.12 | 1.28                  |
| 0.50   | -24.17          | -28.51 | -36.51 | 0.70                  |
| 1.00   | -24.05          | -26.22 | -40.38 | -0.13                 |
| 1.50   | -23.94          | -24.94 | -42.60 | -0.90                 |
| 2.00   | -24.06          | -24.73 | -40.89 | -0.83                 |
| 2.50   | -24.58          | -24.92 | -37.92 | -1.09                 |
| 3.00   | -24.79          | -24.96 | -35.96 | -1.09                 |
| 3.50   | -25.00          | -24.83 | -36.83 | -0.90                 |
| 4.00   | -25.21          | -25.71 | -40.05 | -0.90                 |
| 4.50   | -25.59          | -26.42 | -43.25 | -0.70                 |
| 5.00   | -26.02          | -27.68 | -43.85 | -0.32                 |



## Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document 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](http://www.minicircuits.com/MCLStore/terms.jsp)

