

# NON-CATALOG

Surface Mount

# Voltage Controlled Oscillator

# JTOS-850VW+

Wide Band 400 to 850 MHz

### Features

- excellent tuning linearity
- octave bandwidth
- low phase noise, -136 dBc/Hz at 1 MHz offset, typ.
- aqueous washable

### Applications

- cellular
- UHF
- wideband frequency synthesizers



CASE STYLE: BK377

### +RoHS Compliant

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

### Electrical Specifications

| FREQUENCY (MHz) | POWER OUTPUT (dBm) | TUNING VOLTAGE (V) | PHASE NOISE (dBc/Hz)            |      |       |        | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | TUNING SENSITIVITY (MHz/V) | HARMONICS (dBc) | 3 dB MODULATION BANDWIDTH (MHz) | DC OPERATING POWER |                   |
|-----------------|--------------------|--------------------|---------------------------------|------|-------|--------|-----------------------------|-----------------|----------------------------|-----------------|---------------------------------|--------------------|-------------------|
|                 |                    |                    | SSB at offset frequencies: Typ. |      |       |        |                             |                 |                            |                 |                                 | Vcc (volts)        | Current (mA) Max. |
| Min.            | Max.               | Typ.               | Min.                            | Max. | 1 kHz | 10 kHz | 100 kHz                     | 1 MHz           | Typ.                       | Typ.            | Typ.                            | 5                  | 20                |
| 400             | 850                | +6.0               | 0.5                             | 18   | -74   | -96    | -116                        | -136            | 6.0                        | 1.5             | 15-80                           | -20                | 0.185             |

### 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)   | 6V             |
| Absolute Max. Tuning Voltage (Vtune) | 20V            |
| All specifications                   | 50 ohm system  |

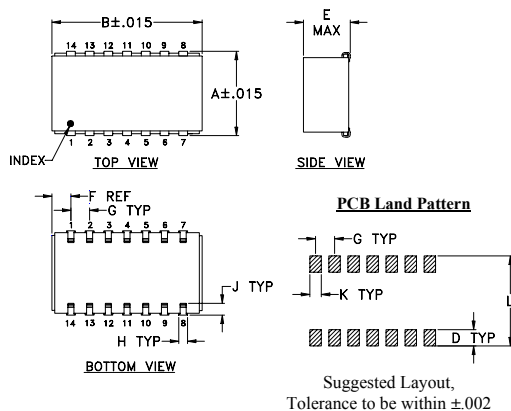
Permanent damage may occur if any of these limits are exceeded.

### Tape & Reel: F107

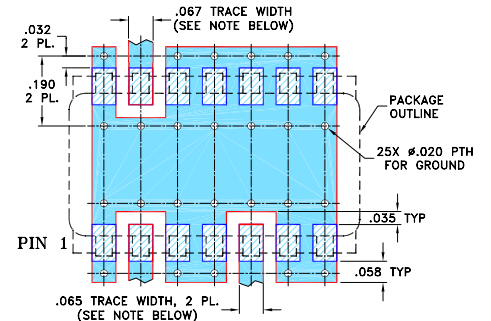
7" Reels with 10, 20, 50, 100 devices  
13" Reels with 200 devices

### Environmental Ratings: ENV65

### 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

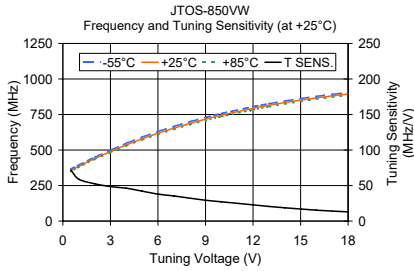
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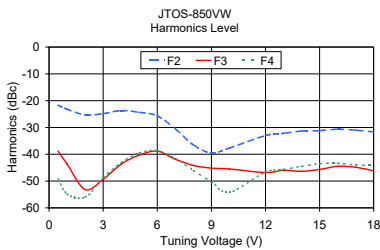
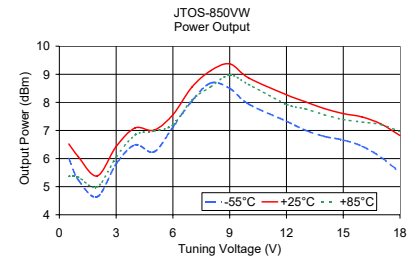
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## Performance Data & Curves

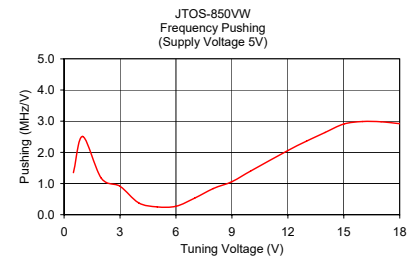
## JTOS-850VW+



| V<br>TUNE | TUNING<br>SENS.<br>(MHz/V) | FREQUENCY (MHz) |        |        | POWER OUTPUT (dBm) |       |       |
|-----------|----------------------------|-----------------|--------|--------|--------------------|-------|-------|
|           |                            | -55°C           | +25°C  | +85°C  | -55°C              | +25°C | +85°C |
| 0.50      | 71.96                      | 366.38          | 355.68 | 349.01 | 6.00               | 6.52  | 5.37  |
| 1.00      | 58.97                      | 393.77          | 385.16 | 380.30 | 5.24               | 6.07  | 5.34  |
| 2.00      | 52.59                      | 448.83          | 439.44 | 433.98 | 4.64               | 5.38  | 4.99  |
| 3.00      | 48.53                      | 498.80          | 488.55 | 482.39 | 5.81               | 6.43  | 6.05  |
| 4.00      | 46.26                      | 547.11          | 535.62 | 528.32 | 6.49               | 7.09  | 6.84  |
| 5.00      | 42.18                      | 591.08          | 578.72 | 570.49 | 6.24               | 7.01  | 6.98  |
| 6.00      | 37.97                      | 630.57          | 617.97 | 609.06 | 7.12               | 7.56  | 7.20  |
| 7.00      | 35.42                      | 666.84          | 654.03 | 644.73 | 8.04               | 8.54  | 8.08  |
| 8.00      | 32.27                      | 699.80          | 687.10 | 677.50 | 8.69               | 9.13  | 8.56  |
| 9.00      | 29.33                      | 729.67          | 717.14 | 707.32 | 8.50               | 9.37  | 8.97  |
| 10.00     | 27.12                      | 757.01          | 744.77 | 734.76 | 7.94               | 8.87  | 8.64  |
| 12.00     | 22.79                      | 805.03          | 793.55 | 783.42 | 7.33               | 8.27  | 7.93  |
| 13.00     | 20.60                      | 826.02          | 814.71 | 804.69 | 7.01               | 8.02  | 7.77  |
| 14.00     | 18.71                      | 845.12          | 833.90 | 823.95 | 6.79               | 7.78  | 7.56  |
| 15.00     | 16.94                      | 862.40          | 851.26 | 841.51 | 6.66               | 7.60  | 7.39  |
| 16.00     | 15.37                      | 878.01          | 866.99 | 857.49 | 6.44               | 7.48  | 7.30  |
| 17.00     | 14.11                      | 892.15          | 881.42 | 872.10 | 6.05               | 7.23  | 7.21  |
| 18.00     | 12.92                      | 905.11          | 894.66 | 885.40 | 5.51               | 6.82  | 6.96  |



| V<br>TUNE | HARMONICS (dBc) |        |        | FREQ. PUSHING<br>(MHz/V) |
|-----------|-----------------|--------|--------|--------------------------|
|           | F2              | F3     | F4     |                          |
| 0.50      | -21.66          | -38.83 | -49.16 | 1.35                     |
| 1.00      | -23.17          | -43.67 | -54.84 | 2.51                     |
| 2.00      | -25.33          | -53.17 | -56.00 | 1.17                     |
| 3.00      | -24.84          | -49.34 | -48.84 | 0.91                     |
| 4.00      | -23.67          | -43.67 | -43.17 | 0.38                     |
| 5.00      | -24.33          | -40.33 | -39.50 | 0.25                     |
| 6.00      | -25.67          | -38.84 | -38.67 | 0.27                     |
| 7.00      | -30.50          | -41.84 | -41.50 | 0.53                     |
| 8.00      | -36.50          | -44.17 | -46.00 | 0.84                     |
| 9.00      | -39.50          | -45.17 | -50.34 | 1.06                     |
| 10.00     | -37.67          | -45.50 | -54.17 | 1.40                     |
| 12.00     | -33.00          | -46.83 | -46.67 | 2.06                     |
| 13.00     | -32.17          | -46.00 | -45.67 | 2.36                     |
| 14.00     | -31.34          | -46.34 | -44.50 | 2.64                     |
| 15.00     | -31.16          | -45.66 | -43.50 | 2.91                     |
| 16.00     | -30.67          | -44.50 | -43.33 | 2.99                     |
| 17.00     | -31.00          | -44.84 | -44.00 | 2.98                     |
| 18.00     | -31.67          | -46.17 | -44.17 | 2.92                     |



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