

Coaxial

# Voltage Controlled Oscillator

ZX95-3000W+

Wide Band 2000 to 3000 MHz

## Features

- linear tuning characteristics
- low phase noise
- low pushing
- protected by US patent 6,790,049

## Applications

- r & d
- lab
- instrumentation
- wireless communications
- satellite systems
- defense systems
- SAP / SAB
- RFID



CASE STYLE: GB956

| Connectors | Model         | Price       | Qty.  |
|------------|---------------|-------------|-------|
| SMA        | ZX95-3000W-S+ | \$49.95 ea. | (1-9) |

### +RoHS Compliant

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

## Electrical Specifications

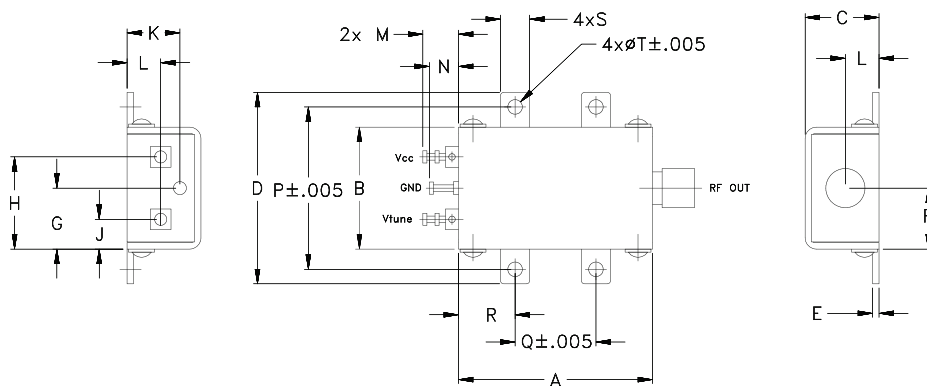
| MODEL NO.   | FREQ. (MHz) |      | POWER OUTPUT (dBm) | PHASE NOISE dBc/Hz SSB at offset frequencies,KHz |      |      |      | TUNING            |                       |               |                                 |      | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc) |      | PULLING pk-pk @12 dB Br (MHz) | PUSHING (MHz/V) | DC OPERATING POWER |      |
|-------------|-------------|------|--------------------|--------------------------------------------------|------|------|------|-------------------|-----------------------|---------------|---------------------------------|------|-----------------------------|-----------------|------|-------------------------------|-----------------|--------------------|------|
|             |             |      |                    |                                                  |      |      |      | VOLTAGE RANGE (V) | SENSI- TIVITY (MHz/V) | PORT CAP (pF) | 3 dB MODULATION BANDWIDTH (MHz) |      |                             |                 |      |                               |                 |                    |      |
|             | Typ.        | Min. |                    | Max.                                             | Typ. | 1    | 10   | 100               | 1000                  | Min.          | Max.                            | Typ. | Typ.                        | Typ.            | Typ. | Typ.                          | Max.            | Typ.               | Typ. |
| ZX95-3000W+ | 2000        | 3000 | +5.5               | -71                                              | -96  | -117 | -138 | 0.5               | 14                    | 84-125        | 20                              | 140  | -90                         | -22             | -10  | 13.5                          | 1.5             | 12                 | 35   |

## Maximum Ratings

|                                      |                |
|--------------------------------------|----------------|
| Operating Temperature                | -55°C to 85°C  |
| Storage Temperature                  | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc)   | 13V            |
| Absolute Max. Tuning Voltage (Vtune) | 16V            |
| All specifications                   | 50 ohm system  |

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

## Outline Drawing



## Outline Dimensions (inch mm)

| A     | B     | C     | D     | E    | F    | G    | H     | J    | K    | L    | M    | N    | P     | Q     | R    | S    | T    | wt.   |
|-------|-------|-------|-------|------|------|------|-------|------|------|------|------|------|-------|-------|------|------|------|-------|
| 1.20  | .75   | .46   | 1.18  | .04  | .38  | .38  | .57   | .18  | .33  | .21  | .22  | .18  | 1.00  | .50   | .35  | .18  | .106 | grams |
| 30.48 | 19.05 | 11.68 | 29.97 | 1.02 | 9.65 | 9.65 | 14.48 | 4.57 | 8.38 | 5.33 | 5.59 | 4.57 | 25.40 | 12.70 | 8.89 | 4.57 | 2.69 | 35.0  |



For detailed performance specs & shopping online see web site

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**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](http://www.minicircuits.com/MCLStore/terms.jsp).

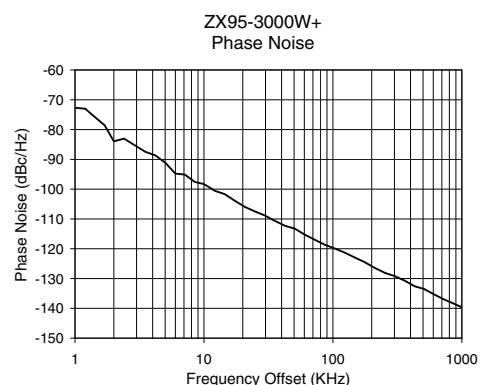
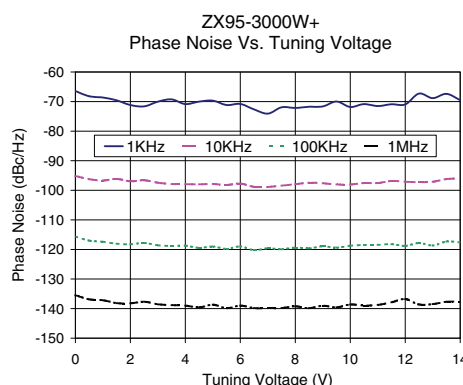
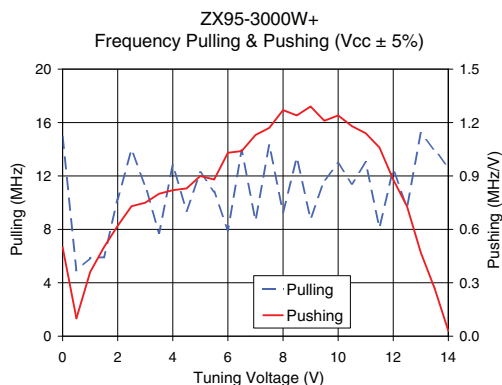
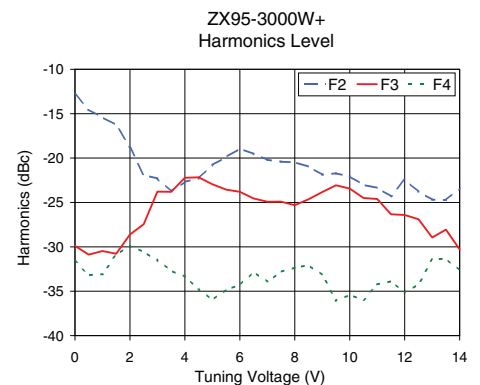
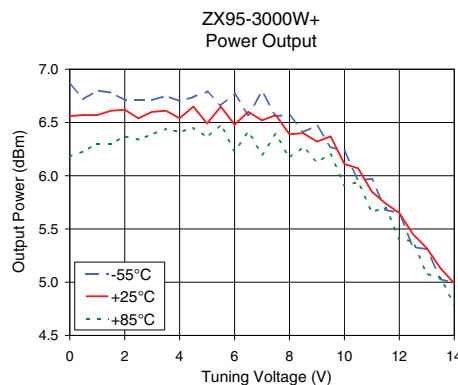
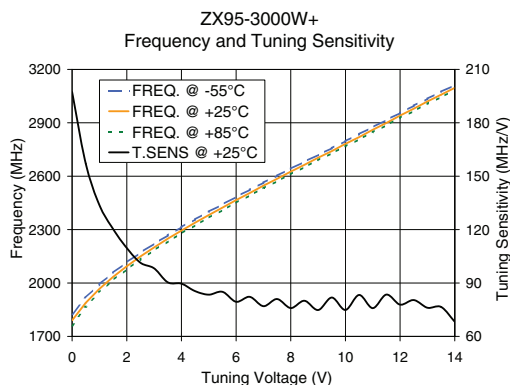
REV. OR  
M108877  
EDR-7891/2MP  
ZX95-3000W+  
RAV  
120905  
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# Performance Data & Curves\*

## ZX95-3000W+

| 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>2500 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      | 197.29                  | 1825.2             | 1790.1 | 1761.1 | 6.86                  | 6.56  | 6.18  | 26.73       | -12.8           | -29.9 | -31.6 | 0.50                     | 14.94                  | -66.4                              | -95.2 | -115.6 | -135.5 | 1.0                     | -72.71                                    |
| 0.50      | 157.09                  | 1917.9             | 1888.8 | 1866.8 | 6.72                  | 6.57  | 6.23  | 26.77       | -14.6           | -30.9 | -33.2 | 0.10                     | 4.93                   | -68.2                              | -96.3 | -117.0 | -136.9 | 2.0                     | -83.96                                    |
| 1.00      | 133.75                  | 1992.8             | 1967.3 | 1947.8 | 6.80                  | 6.57  | 6.30  | 26.81       | -15.4           | -30.5 | -33.1 | 0.36                     | 5.86                   | -68.6                              | -96.7 | -117.4 | -137.2 | 3.5                     | -87.45                                    |
| 1.50      | 120.38                  | 2057.8             | 2034.2 | 2016.5 | 6.78                  | 6.61  | 6.30  | 26.86       | -16.3           | -30.8 | -30.9 | 0.50                     | 5.91                   | -69.6                              | -96.2 | -118.0 | -138.1 | 6.0                     | -94.77                                    |
| 2.00      | 109.64                  | 2116.3             | 2094.4 | 2077.0 | 6.71                  | 6.62  | 6.37  | 26.90       | -18.8           | -28.6 | -29.9 | 0.62                     | 10.28                  | -71.2                              | -97.0 | -118.3 | -138.2 | 8.5                     | -97.58                                    |
| 3.00      | 98.24                   | 2220.7             | 2199.9 | 2184.0 | 6.71                  | 6.60  | 6.39  | 26.95       | -22.3           | -23.8 | -31.5 | 0.75                     | 11.26                  | -70.0                              | -97.4 | -118.6 | -138.6 | 10.0                    | -98.30                                    |
| 4.00      | 89.65                   | 2314.0             | 2294.2 | 2278.8 | 6.70                  | 6.54  | 6.41  | 26.99       | -22.7           | -22.2 | -33.4 | 0.82                     | 12.82                  | -70.8                              | -97.9 | -118.7 | -139.0 | 20.8                    | -105.97                                   |
| 5.00      | 83.47                   | 2400.8             | 2381.7 | 2366.2 | 6.79                  | 6.49  | 6.36  | 27.01       | -20.8           | -23.0 | -36.0 | 0.90                     | 12.26                  | -69.7                              | -97.9 | -119.0 | -138.7 | 35.5                    | -110.64                                   |
| 6.00      | 79.46                   | 2483.8             | 2466.0 | 2450.7 | 6.77                  | 6.48  | 6.23  | 27.04       | -18.9           | -23.8 | -34.3 | 1.03                     | 7.93                   | -70.8                              | -97.7 | -119.0 | -139.0 | 60.7                    | -115.29                                   |
| 6.50      | 82.21                   | 2524.1             | 2505.7 | 2491.8 | 6.57                  | 6.60  | 6.41  | 27.06       | -19.5           | -24.6 | -32.8 | 1.04                     | 13.91                  | -72.7                              | -98.8 | -120.3 | -139.8 | 86.7                    | -118.67                                   |
| 7.00      | 76.96                   | 2563.7             | 2546.8 | 2532.4 | 6.79                  | 6.52  | 6.20  | 27.07       | -20.2           | -24.9 | -33.9 | 1.13                     | 8.69                   | -74.1                              | -98.9 | -119.6 | -139.9 | 100.0                   | -119.64                                   |
| 8.00      | 75.93                   | 2642.2             | 2625.8 | 2611.5 | 6.57                  | 6.39  | 6.17  | 27.05       | -20.5           | -25.3 | -32.3 | 1.27                     | 9.29                   | -72.2                              | -97.9 | -119.4 | -139.2 | 148.1                   | -122.94                                   |
| 9.00      | 74.81                   | 2719.9             | 2703.8 | 2689.7 | 6.47                  | 6.32  | 6.13  | 27.05       | -21.9           | -23.8 | -33.2 | 1.29                     | 8.80                   | -71.6                              | -97.6 | -119.0 | -139.0 | 177.0                   | -124.53                                   |
| 10.00     | 74.84                   | 2796.9             | 2782.1 | 2767.9 | 6.23                  | 6.11  | 5.91  | 27.02       | -22.1           | -23.4 | -35.4 | 1.24                     | 12.94                  | -71.8                              | -98.0 | -118.7 | -138.6 | 211.6                   | -126.44                                   |
| 11.00     | 75.88                   | 2875.6             | 2861.1 | 2847.4 | 5.97                  | 5.85  | 5.66  | 26.97       | -23.4           | -24.6 | -34.2 | 1.14                     | 12.98                  | -71.5                              | -97.6 | -118.4 | -138.7 | 302.4                   | -129.18                                   |
| 12.00     | 77.84                   | 2955.3             | 2940.8 | 2927.7 | 5.65                  | 5.65  | 5.41  | 26.93       | -22.4           | -26.4 | -35.1 | 0.88                     | 12.49                  | -71.0                              | -97.1 | -118.8 | -136.8 | 361.5                   | -130.73                                   |
| 12.50     | 80.41                   | 2996.2             | 2979.7 | 2966.0 | 5.33                  | 5.45  | 5.38  | 26.88       | -23.8           | -26.9 | -34.2 | 0.73                     | 9.66                   | -67.3                              | -97.3 | -117.8 | -138.6 | 507.5                   | -133.47                                   |
| 13.00     | 76.08                   | 3035.0             | 3019.9 | 3006.9 | 5.31                  | 5.32  | 5.08  | 26.87       | -24.7           | -28.9 | -31.4 | 0.47                     | 15.20                  | -68.9                              | -97.1 | -118.7 | -138.5 | 606.7                   | -135.27                                   |
| 13.50     | 76.51                   | 3074.5             | 3058.0 | 3044.3 | 5.03                  | 5.13  | 5.04  | 26.83       | -24.7           | -28.1 | -31.3 | 0.27                     | 13.95                  | -67.4                              | -96.2 | -117.3 | -137.7 | 851.6                   | -138.28                                   |
| 14.00     | 68.26                   | 3111.4             | 3096.2 | 3082.4 | 4.99                  | 4.99  | 4.79  | 26.82       | -23.4           | -30.3 | -32.7 | 0.03                     | 12.65                  | -69.5                              | -96.0 | -117.6 | -137.6 | 1000.0                  | -139.63                                   |

\*at 25°C unless mentioned otherwise



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