

Coaxial

# Voltage Controlled Oscillator

ZX95-3050+

Linear Tuning 2850 to 3050 MHz

## Features

- linear tuning characteristics
- low pulling
- protected by US patent 6,790,049

## Applications

- r & d
- lab
- instrumentation
- wireless communications
- high capacity radio



CASE STYLE: GB956

| Connectors | Model        | Price       | Qty.  |
|------------|--------------|-------------|-------|
| SMA        | ZX95-3050-S+ | \$40.95 ea. | (1-9) |

### +RoHS Compliant

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

## Electrical Specifications

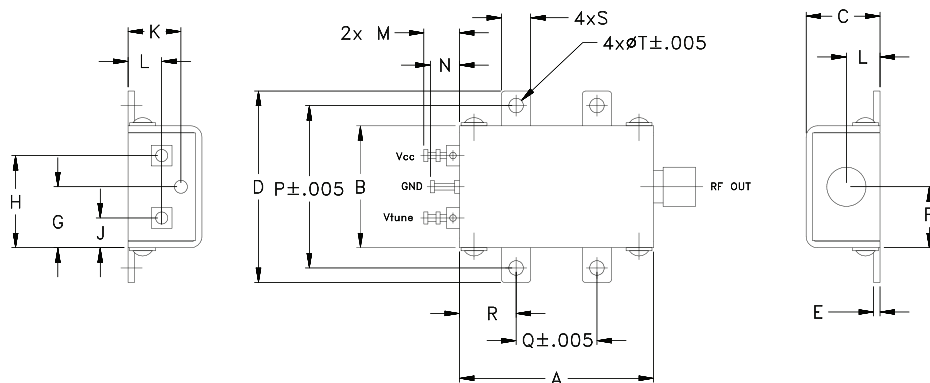
| MODEL NO.  | FREQ. (MHz) |      | POWER OUTPUT (dBm) | PHASE NOISE dBc/Hz SSB at offset frequencies,kHz |     |      |      | TUNING            |                       |               |                                 |                                      | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc) |      | PULLING pk-pk @12 dB <sub>r</sub> (MHz) | PUSHING (MHz/V) | DC OPERATING POWER |      |
|------------|-------------|------|--------------------|--------------------------------------------------|-----|------|------|-------------------|-----------------------|---------------|---------------------------------|--------------------------------------|-----------------------------|-----------------|------|-----------------------------------------|-----------------|--------------------|------|
|            |             |      |                    | Typ.                                             |     |      |      | VOLTAGE RANGE (V) | SENSI- TIVITY (MHz/V) | PORT CAP (pF) | 3 dB MODULATION BANDWIDTH (MHz) | V <sub>cc</sub> Current (volts) (mA) |                             |                 |      |                                         |                 |                    |      |
|            | Min.        | Max. |                    | Typ.                                             | 1   | 10   | 100  | 1000              | Min.                  | Max.          | Typ.                            | Typ.                                 |                             | Typ.            | Typ. |                                         |                 | Typ.               | Max. |
| ZX95-3050+ | 2850        | 3050 | +6                 | -73                                              | -99 | -120 | -141 | 0.5               | 12                    | 35-42         | 30                              | 20                                   | -90                         | -21             | -12  | 1                                       | 3               | 5                  | 44   |

## 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) | 14V            |
| 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  |

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ISO 9001 ISO 14001 AS 9100 CERTIFIED

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IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

**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).

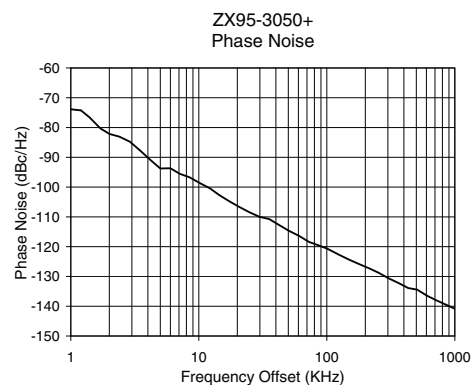
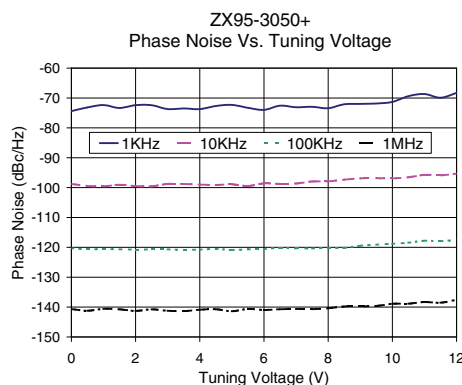
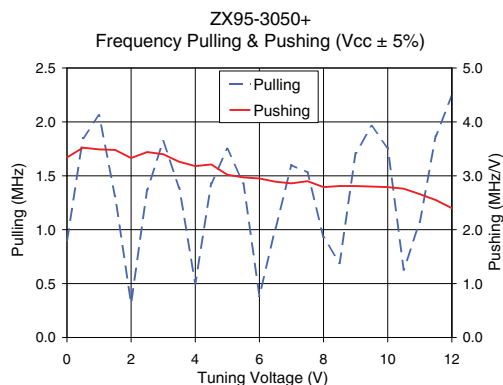
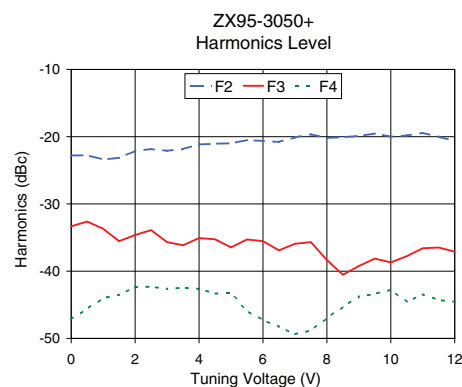
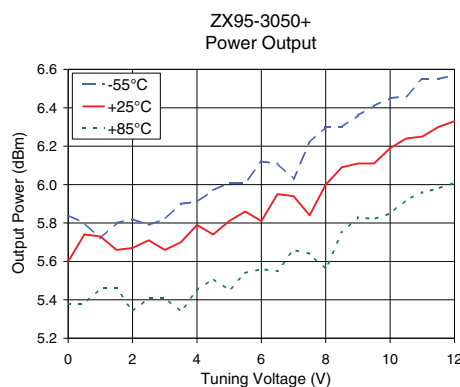
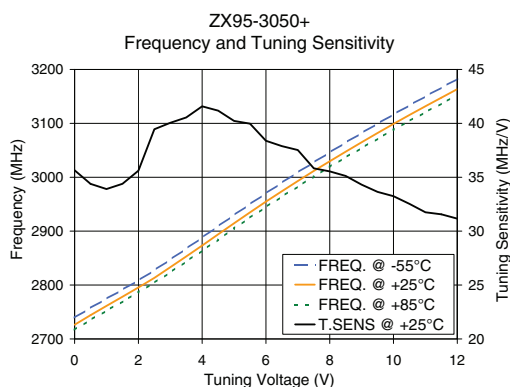
REV. OR  
M108877  
EDR-8116  
ZX95-3050+  
RAV  
120905  
Page 1 of 2

# Performance Data & Curves\*

# ZX95-3050+

| 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>2950 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      | 35.65                   | 2739.7             | 2726.3 | 2717.2 | 5.84                  | 5.60  | 5.38  | 36.12       | -22.8           | -33.3 | -47.1 | 3.34                     | 0.90                   | -74.4                              | -98.8 | -120.3 | -140.7 | 1.0                     | -73.87                                    |
| 0.50      | 34.38                   | 2757.4             | 2744.1 | 2735.5 | 5.80                  | 5.74  | 5.38  | 36.13       | -22.8           | -32.6 | -45.6 | 3.52                     | 1.85                   | -73.2                              | -99.4 | -120.7 | -141.2 | 2.0                     | -82.14                                    |
| 1.00      | 33.90                   | 2774.5             | 2761.3 | 2752.5 | 5.72                  | 5.73  | 5.46  | 36.17       | -23.4           | -33.7 | -44.0 | 3.49                     | 2.06                   | -72.4                              | -99.6 | -120.6 | -140.6 | 3.5                     | -87.82                                    |
| 1.50      | 34.39                   | 2791.4             | 2778.3 | 2769.4 | 5.80                  | 5.66  | 5.46  | 36.24       | -23.1           | -35.6 | -43.5 | 3.48                     | 1.31                   | -73.3                              | -99.1 | -120.6 | -140.8 | 6.0                     | -93.66                                    |
| 2.00      | 35.61                   | 2808.6             | 2795.5 | 2786.8 | 5.82                  | 5.67  | 5.34  | 36.34       | -22.1           | -34.6 | -42.4 | 3.33                     | 0.32                   | -72.4                              | -99.5 | -120.7 | -141.3 | 8.5                     | -96.73                                    |
| 2.50      | 39.45                   | 2827.4             | 2813.3 | 2804.4 | 5.79                  | 5.71  | 5.41  | 36.36       | -21.9           | -33.9 | -42.3 | 3.44                     | 1.37                   | -72.4                              | -99.6 | -120.7 | -140.7 | 10.0                    | -98.46                                    |
| 3.00      | 40.05                   | 2847.2             | 2833.0 | 2823.5 | 5.82                  | 5.66  | 5.41  | 36.41       | -22.1           | -35.7 | -42.6 | 3.40                     | 1.82                   | -73.7                              | -98.8 | -120.7 | -141.2 | 20.8                    | -106.70                                   |
| 4.00      | 41.58                   | 2888.0             | 2873.3 | 2863.8 | 5.91                  | 5.79  | 5.45  | 36.59       | -21.2           | -35.1 | -42.6 | 3.18                     | 0.50                   | -73.7                              | -99.0 | -120.7 | -140.9 | 35.5                    | -110.73                                   |
| 5.00      | 40.22                   | 2929.7             | 2914.7 | 2905.0 | 6.01                  | 5.81  | 5.45  | 36.76       | -21.0           | -36.5 | -43.3 | 3.02                     | 1.75                   | -72.3                              | -98.9 | -120.9 | -141.4 | 60.7                    | -116.39                                   |
| 6.00      | 38.38                   | 2970.1             | 2954.8 | 2944.7 | 6.12                  | 5.81  | 5.56  | 36.93       | -20.6           | -35.6 | -47.3 | 2.95                     | 0.39                   | -74.0                              | -98.6 | -120.6 | -141.0 | 86.7                    | -119.61                                   |
| 7.00      | 37.52                   | 3009.0             | 2992.9 | 2982.8 | 6.03                  | 5.94  | 5.66  | 37.12       | -20.1           | -35.9 | -49.4 | 2.86                     | 1.60                   | -73.1                              | -98.6 | -120.4 | -140.6 | 100.0                   | -120.60                                   |
| 8.00      | 35.54                   | 3046.1             | 3029.6 | 3019.5 | 6.30                  | 6.00  | 5.56  | 37.33       | -20.2           | -38.3 | -47.0 | 2.79                     | 0.93                   | -73.4                              | -97.9 | -120.2 | -140.4 | 148.1                   | -124.29                                   |
| 8.50      | 35.12                   | 3064.3             | 3047.4 | 3036.9 | 6.30                  | 6.09  | 5.75  | 37.42       | -20.1           | -40.5 | -45.3 | 2.81                     | 0.69                   | -72.1                              | -97.4 | -120.2 | -139.8 | 177.0                   | -125.77                                   |
| 9.00      | 34.31                   | 3081.9             | 3064.9 | 3054.3 | 6.36                  | 6.11  | 5.83  | 37.52       | -19.9           | -39.2 | -43.8 | 2.81                     | 1.71                   | -72.0                              | -96.9 | -119.5 | -139.8 | 211.6                   | -127.19                                   |
| 9.50      | 33.65                   | 3099.4             | 3082.1 | 3071.4 | 6.41                  | 6.11  | 5.82  | 37.63       | -19.5           | -38.1 | -43.4 | 2.80                     | 1.96                   | -71.8                              | -96.9 | -119.1 | -139.6 | 302.4                   | -130.60                                   |
| 10.00     | 33.24                   | 3116.7             | 3098.9 | 3088.1 | 6.45                  | 6.19  | 5.85  | 37.73       | -20.0           | -38.7 | -42.8 | 2.79                     | 1.76                   | -71.3                              | -96.9 | -118.8 | -138.9 | 361.5                   | -132.18                                   |
| 10.50     | 32.53                   | 3133.5             | 3115.5 | 3104.5 | 6.46                  | 6.24  | 5.92  | 37.84       | -19.8           | -37.8 | -44.6 | 2.76                     | 0.63                   | -69.4                              | -96.5 | -118.5 | -138.9 | 507.5                   | -134.42                                   |
| 11.00     | 31.75                   | 3149.9             | 3131.8 | 3120.7 | 6.55                  | 6.25  | 5.96  | 37.95       | -19.4           | -36.6 | -43.5 | 2.66                     | 1.07                   | -68.7                              | -95.8 | -117.8 | -138.3 | 606.7                   | -136.46                                   |
| 11.50     | 31.56                   | 3166.2             | 3147.7 | 3136.5 | 6.55                  | 6.30  | 5.98  | 38.05       | -20.0           | -36.5 | -44.3 | 2.55                     | 1.87                   | -69.9                              | -95.9 | -117.9 | -138.5 | 851.6                   | -139.49                                   |
| 12.00     | 31.16                   | 3182.3             | 3163.4 | 3152.1 | 6.57                  | 6.33  | 6.01  | 38.13       | -20.6           | -37.1 | -44.6 | 2.40                     | 2.24                   | -68.3                              | -95.3 | -117.5 | -137.6 | 1000.0                  | -140.85                                   |

\*at 25°C unless mentioned otherwise



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