

Coaxial

# Voltage Controlled Oscillator

## ZX95-1015+

Linear Tuning 750 to 1010 MHz

### Features

- low phase noise
- low pushing
- low pulling
- protected by US patent 6,790,049

### Applications

- r & d
- lab
- instrumentation
- wireless communications
- mobile TV



CASE STYLE: GB956

| Connectors | Model        |
|------------|--------------|
| SMA        | ZX95-1015-S+ |

**+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 (MHz) | PUSHING (MHz/V) | DC OPERATING POWER |      |
|------------|-------------|------|--------------------|---|------|------|------|--------|-------------------|----------------------|---------------|---------------------------------|-----------------------------|-----------------|------|----------------------------|-----------------|--------------------|------|
|            | Min.        | Max. |                    | Typ.  | 1    | 10   | 100  | 1000   | VOLTAGE RANGE (V) | SENSI-TIVITY (MHz/V) | PORT CAP (pF) | 3 dB MODULATION BANDWIDTH (MHz) |                             | Typ.            | Typ. |                            |                 | Max.               | Typ. |
| ZX95-1015+ | 750         | 1010 | +6                 | -85   | -113 | -134 | -154 | 0.5    | 28                | 7-15                 | 70            | 35                              | -90                         | -20             | -10  | 1                          | 1.5             | 5                  | 35   |

### Maximum Ratings

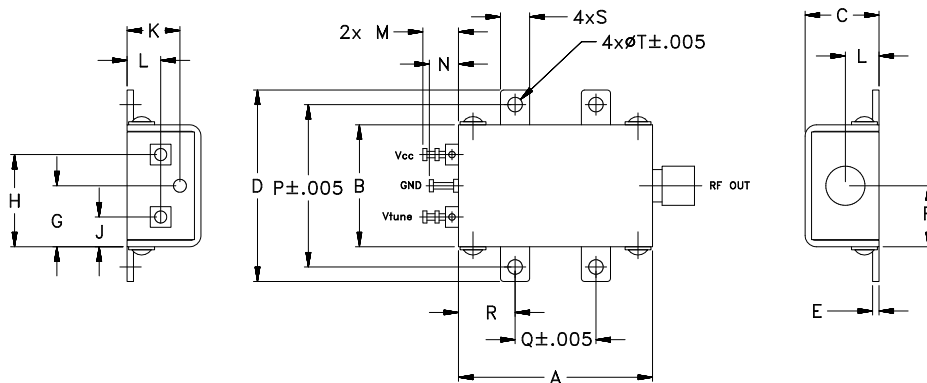
|                                      |                |
|--------------------------------------|----------------|
| Operating Temperature                | -55°C to 85°C  |
| Storage Temperature                  | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc)   | 6V             |
| Absolute Max. Tuning Voltage (Vtune) | 30V            |
| All specifications                   | 50 ohm system  |

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



NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note [AN-40-10](#).

### 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  |

#### 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.
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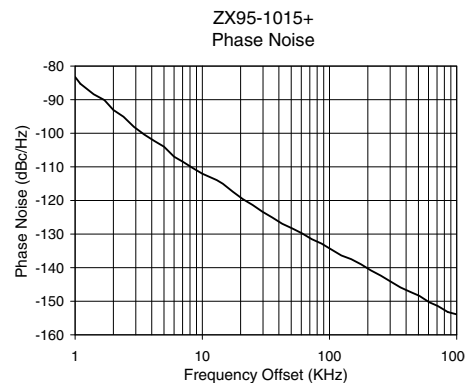
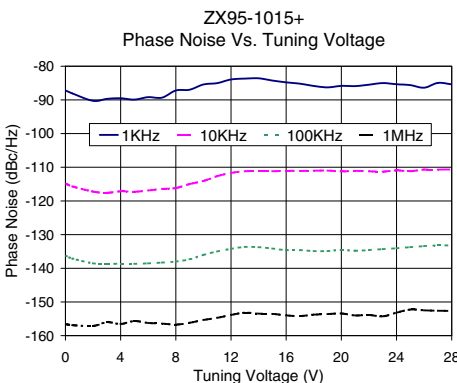
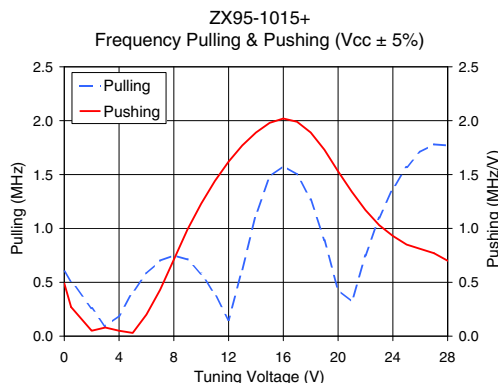
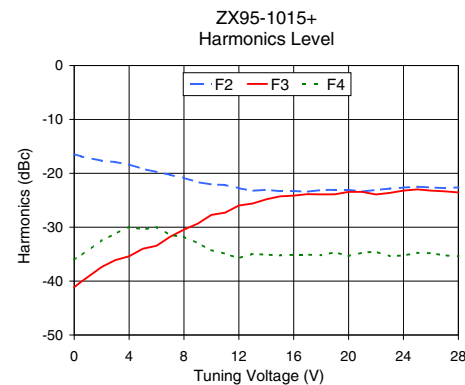
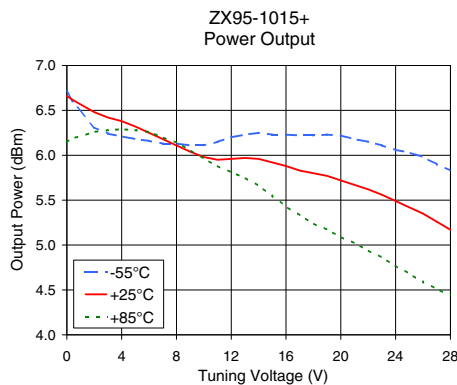
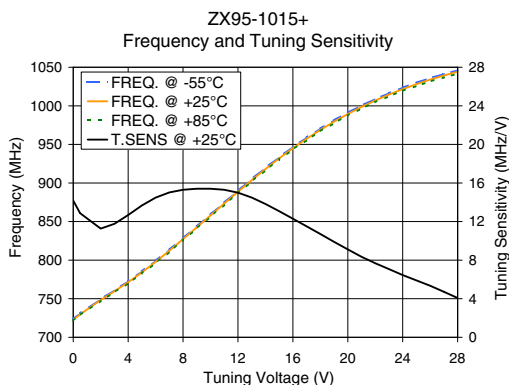
REV. A  
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ZX95-1015+  
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# Performance Data & Curves\*

# ZX95-1015+

| V TUNE | TUNE SENS (MHz/V) | FREQUENCY (MHz) |        |        | POWER OUTPUT (dBm) |       |       | Icc (mA) | HARMONICS (dBc) |       |       | FREQ. PUSH (MHz/V) | FREQ. PULL (MHz) | PHASE NOISE (dBc/Hz) at offsets |        |        |        | FREQ OFFSET (KHz) | PHASE NOISE at 880 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|---------------------------------|
|        |                   | -55°C           | +25°C  | +85°C  | -55°C              | +25°C | +85°C |          | F2              | F3    | F4    |                    |                  | 1kHz                            | 10kHz  | 100kHz | 1MHz   |                   |                                 |
| 0.00   | 14.17             | 723.9           | 722.6  | 721.6  | 6.71               | 6.66  | 6.15  | 23.06    | -16.5           | -41.1 | -36.0 | 0.49               | 0.60             | -87.2                           | -114.8 | -136.3 | -156.6 | 1.0               | -83.22                          |
| 0.50   | 12.87             | 731.0           | 729.7  | 728.7  | 6.58               | 6.61  | 6.19  | 23.09    | -16.9           | -40.1 | -35.3 | 0.27               | 0.51             | -88.1                           | -115.7 | -137.1 | -156.9 | 2.0               | -93.07                          |
| 2.00   | 11.27             | 749.7           | 748.4  | 747.3  | 6.31               | 6.48  | 6.26  | 23.12    | -17.7           | -37.4 | -32.4 | 0.05               | 0.26             | -90.3                           | -117.2 | -138.5 | -157.1 | 3.5               | -100.38                         |
| 4.00   | 12.68             | 772.9           | 771.4  | 770.0  | 6.21               | 6.38  | 6.29  | 23.06    | -18.4           | -35.4 | -29.9 | 0.05               | 0.19             | -89.5                           | -117.2 | -138.7 | -156.5 | 6.0               | -106.96                         |
| 6.00   | 14.48             | 799.1           | 797.7  | 796.2  | 6.16               | 6.25  | 6.26  | 22.93    | -19.8           | -33.5 | -30.0 | 0.20               | 0.58             | -89.2                           | -116.9 | -138.5 | -156.2 | 8.5               | -110.45                         |
| 8.00   | 15.29             | 828.5           | 827.2  | 825.7  | 6.13               | 6.11  | 6.14  | 22.82    | -20.9           | -30.5 | -31.8 | 0.71               | 0.75             | -87.2                           | -116.2 | -138.0 | -156.7 | 10.0              | -112.04                         |
| 10.00  | 15.40             | 859.1           | 857.9  | 856.3  | 6.11               | 5.98  | 5.96  | 22.74    | -22.1           | -27.7 | -34.3 | 1.23               | 0.58             | -85.4                           | -114.1 | -136.0 | -155.4 | 20.8              | -119.59                         |
| 11.00  | 15.30             | 874.5           | 873.3  | 871.7  | 6.15               | 5.95  | 5.88  | 22.69    | -22.2           | -27.3 | -34.9 | 1.44               | 0.39             | -85.0                           | -112.6 | -135.0 | -154.7 | 35.5              | -125.08                         |
| 12.00  | 14.99             | 889.9           | 888.6  | 886.9  | 6.20               | 5.96  | 5.81  | 22.68    | -22.8           | -26.0 | -35.7 | 1.62               | 0.15             | -83.9                           | -111.7 | -134.2 | -153.9 | 60.7              | -129.77                         |
| 13.00  | 14.49             | 905.1           | 903.6  | 901.9  | 6.23               | 5.97  | 5.75  | 22.70    | -23.2           | -25.6 | -34.9 | 1.77               | 0.62             | -83.7                           | -111.2 | -133.7 | -153.2 | 86.7              | -132.84                         |
| 14.00  | 13.82             | 919.7           | 918.1  | 916.4  | 6.25               | 5.96  | 5.66  | 22.71    | -23.1           | -24.8 | -35.1 | 1.89               | 1.13             | -83.6                           | -111.2 | -133.7 | -153.5 | 100.0             | -134.27                         |
| 15.00  | 13.07             | 933.6           | 931.9  | 930.3  | 6.23               | 5.92  | 5.55  | 22.72    | -23.3           | -24.3 | -35.2 | 1.98               | 1.48             | -84.3                           | -111.2 | -134.1 | -153.5 | 148.1             | -137.47                         |
| 16.00  | 12.30             | 946.8           | 945.0  | 943.4  | 6.23               | 5.88  | 5.43  | 22.72    | -23.3           | -24.1 | -35.1 | 2.02               | 1.58             | -84.8                           | -111.0 | -134.6 | -154.0 | 177.0             | -139.00                         |
| 17.00  | 11.51             | 959.1           | 957.3  | 955.6  | 6.22               | 5.83  | 5.33  | 22.72    | -23.4           | -23.9 | -35.1 | 1.99               | 1.50             | -85.2                           | -111.1 | -134.6 | -154.2 | 211.6             | -140.82                         |
| 18.00  | 10.71             | 970.6           | 968.8  | 967.1  | 6.22               | 5.80  | 5.24  | 22.73    | -23.1           | -23.9 | -35.2 | 1.89               | 1.27             | -85.9                           | -111.0 | -134.9 | -153.8 | 302.4             | -144.15                         |
| 20.00  | 9.12              | 991.2           | 989.4  | 987.5  | 6.22               | 5.72  | 5.09  | 22.82    | -23.1           | -23.4 | -35.3 | 1.53               | 0.43             | -85.8                           | -111.2 | -134.5 | -153.4 | 361.5             | -145.88                         |
| 22.00  | 7.68              | 1008.8          | 1006.9 | 1004.8 | 6.15               | 5.62  | 4.94  | 22.92    | -23.1           | -23.9 | -34.6 | 1.17               | 0.75             | -85.5                           | -111.2 | -134.6 | -153.9 | 507.5             | -148.37                         |
| 24.00  | 6.45              | 1023.5          | 1021.6 | 1019.4 | 6.06               | 5.49  | 4.77  | 22.98    | -22.6           | -23.2 | -35.3 | 0.93               | 1.37             | -85.4                           | -111.0 | -134.1 | -153.2 | 606.7             | -150.29                         |
| 26.00  | 5.35              | 1035.9          | 1034.0 | 1031.6 | 5.98               | 5.35  | 4.59  | 23.03    | -22.6           | -23.2 | -34.8 | 0.81               | 1.71             | -86.4                           | -110.7 | -133.4 | -152.5 | 851.6             | -153.21                         |
| 28.00  | 4.08              | 1046.0          | 1044.1 | 1041.4 | 5.83               | 5.17  | 4.44  | 23.07    | -22.6           | -23.6 | -35.4 | 0.70               | 1.77             | -85.4                           | -110.7 | -133.2 | -152.7 | 1000.0            | -153.92                         |

\*at 25°C unless mentioned otherwise



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