

Coaxial

# Voltage Controlled Oscillator

## ZX95-1124+

5V Tuning for PLL IC's 1109 to 1124 MHz

### Features

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

### Applications

- r & d
- lab
- instrumentation
- wireless communications
- 900MHz GSM EDGE



CASE STYLE: GB956

| Connectors | Model        | Price        | Qty.  |
|------------|--------------|--------------|-------|
| SMA        | ZX95-1124-S+ | \$ 44.95 ea. | (1-9) |

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

### Electrical Specifications

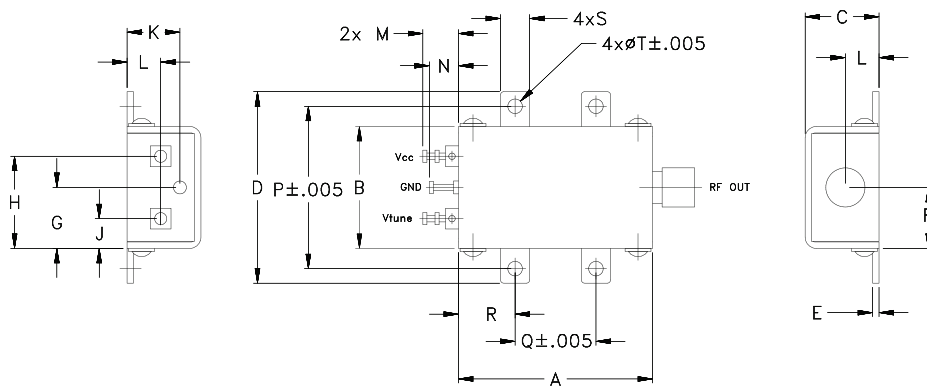
| MODEL NO.  | FREQ. (MHz) |      | POWER OUTPUT (dBm) | PHASE NOISE dBc/Hz SSB at offset frequencies,kHz |      |      |      | TUNING |                   |      |                     |          | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc)                 |      | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | DC OPERATING POWER |      |      |      |             |              |
|------------|-------------|------|--------------------|--|------|------|------|--------|-------------------|------|---------------------|----------|-----------------------------|---------------------------------|------|-----------------------------|-----------------|--------------------|------|------|------|-------------|--------------|
|            | Min.        | Max. |                    | Typ.   | 1    | 10   | 100  | 1000   | VOLTAGE RANGE (V) |      | PORT TIVITY (MHz/V) | CAP (pF) |                             | 3 dB MODULATION BANDWIDTH (MHz) | Typ. |                             |                 | Typ.               | Max. | Typ. | Max. | Vcc (volts) | Current (mA) |
|            |             |      |                    |  |      |      |      |        | Min.              | Max. |                     |          |                             |                                 |      |                             |                 |                    |      |      |      |             |              |
| ZX95-1124+ | 1109        | 1124 | +6                 | -89  | -116 | -137 | -157 | 0.5    | 4.5               | 14   | 38                  | 50       | -90                         | -25                             | -15  | 0.4                         | 0.4             | 5                  | 33   |      |      |             |              |

### Maximum Ratings

|                                      |                |
|--------------------------------------|----------------|
| Operating Temperature                | -55°C to 85°C  |
| Storage Temperature                  | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc)   | 6.5V           |
| Absolute Max. Tuning Voltage (Vtune) | 7.0V           |
| 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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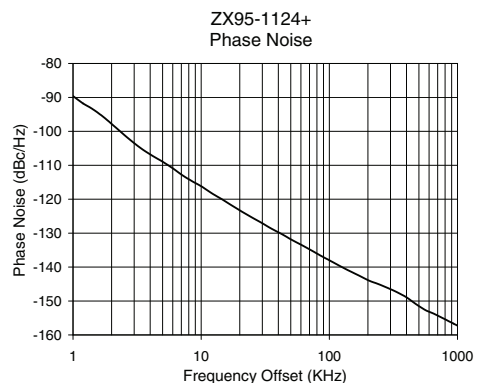
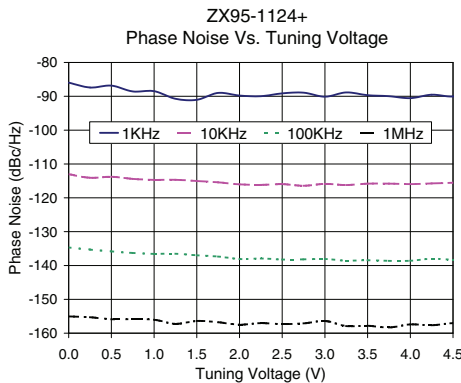
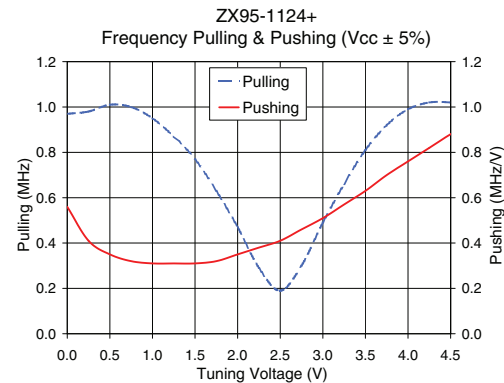
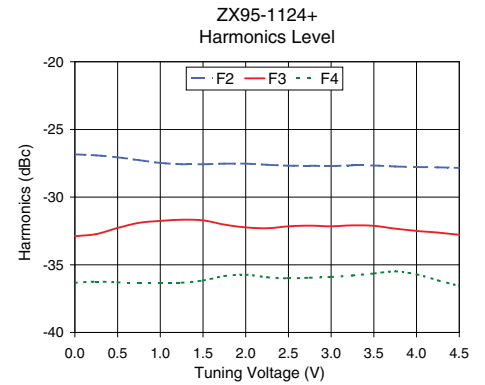
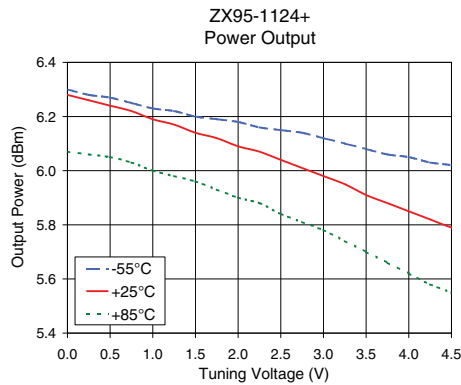
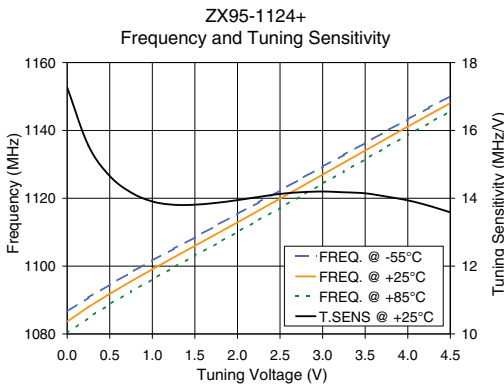
REV. OR  
M122038  
EDR-9566F2  
ZX95-1124+  
RAV  
120902  
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# Performance Data & Curves\*

# ZX95-1124+

| 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 1117 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
|        |                   | -55°C           | +25°C  | +85°C  | -55°C              | +25°C | +85°C |          | F2              | F3    | F4    |                    |                  | 1kHz                            | 10kHz  | 100kHz | 1MHz   |                   |                                  |
| 0.00   | 17.27             | 1086.6          | 1083.6 | 1080.2 | 6.30               | 6.28  | 6.07  | 25.71    | -26.8           | -32.9 | -36.3 | 0.56               | 0.97             | -86.0                           | -113.0 | -134.7 | -155.1 | 1.0               | -89.61                           |
| 0.25   | 15.55             | 1090.7          | 1088.0 | 1084.8 | 6.28               | 6.26  | 6.06  | 25.71    | -26.9           | -32.7 | -36.2 | 0.41               | 0.98             | -87.4                           | -114.1 | -135.3 | -155.3 | 2.0               | -97.81                           |
| 0.50   | 14.66             | 1094.5          | 1091.9 | 1088.8 | 6.27               | 6.24  | 6.05  | 25.70    | -27.1           | -32.3 | -36.3 | 0.35               | 1.01             | -86.8                           | -113.8 | -135.8 | -155.9 | 3.5               | -105.38                          |
| 0.75   | 14.17             | 1098.1          | 1095.5 | 1092.5 | 6.25               | 6.22  | 6.03  | 25.69    | -27.3           | -31.9 | -36.3 | 0.32               | 1.00             | -88.6                           | -114.4 | -136.3 | -155.9 | 6.0               | -110.88                          |
| 1.00   | 13.91             | 1101.6          | 1099.1 | 1096.1 | 6.23               | 6.19  | 6.00  | 25.69    | -27.5           | -31.8 | -36.3 | 0.31               | 0.95             | -88.5                           | -114.7 | -136.6 | -156.0 | 8.5               | -114.71                          |
| 1.25   | 13.81             | 1105.1          | 1102.5 | 1099.6 | 6.22               | 6.17  | 5.98  | 25.68    | -27.6           | -31.7 | -36.3 | 0.31               | 0.87             | -90.7                           | -114.7 | -136.5 | -157.2 | 10.0              | -116.18                          |
| 1.50   | 13.81             | 1108.5          | 1106.0 | 1103.1 | 6.20               | 6.14  | 5.96  | 25.66    | -27.6           | -31.7 | -36.2 | 0.31               | 0.77             | -91.0                           | -115.0 | -137.0 | -156.4 | 20.8              | -123.68                          |
| 1.75   | 13.86             | 1111.9          | 1109.4 | 1106.6 | 6.19               | 6.12  | 5.93  | 25.65    | -27.5           | -32.0 | -35.8 | 0.32               | 0.63             | -89.0                           | -115.4 | -137.3 | -156.8 | 35.5              | -128.72                          |
| 2.00   | 13.94             | 1115.4          | 1112.9 | 1110.1 | 6.18               | 6.09  | 5.90  | 25.64    | -27.5           | -32.2 | -35.7 | 0.35               | 0.47             | -89.8                           | -116.0 | -138.1 | -157.5 | 60.7              | -133.48                          |
| 2.25   | 14.04             | 1118.8          | 1116.4 | 1113.6 | 6.16               | 6.07  | 5.88  | 25.62    | -27.6           | -32.3 | -35.9 | 0.38               | 0.29             | -90.0                           | -116.2 | -137.9 | -157.0 | 86.7              | -136.76                          |
| 2.50   | 14.13             | 1122.3          | 1119.9 | 1117.2 | 6.15               | 6.04  | 5.84  | 25.62    | -27.7           | -32.2 | -36.0 | 0.41               | 0.19             | -89.1                           | -115.9 | -138.2 | -157.3 | 100.0             | -138.00                          |
| 2.75   | 14.18             | 1125.8          | 1123.4 | 1120.7 | 6.14               | 6.01  | 5.81  | 25.61    | -27.7           | -32.1 | -36.0 | 0.46               | 0.30             | -88.9                           | -116.4 | -138.2 | -157.1 | 170.8             | -142.53                          |
| 3.00   | 14.20             | 1129.3          | 1127.0 | 1124.3 | 6.12               | 5.98  | 5.78  | 25.60    | -27.7           | -32.2 | -35.9 | 0.51               | 0.49             | -90.1                           | -115.9 | -138.1 | -156.4 | 204.2             | -144.01                          |
| 3.25   | 14.18             | 1132.8          | 1130.5 | 1127.9 | 6.10               | 5.95  | 5.74  | 25.60    | -27.7           | -32.1 | -35.8 | 0.57               | 0.66             | -88.9                           | -116.2 | -138.6 | -157.9 | 286.7             | -146.18                          |
| 3.50   | 14.15             | 1136.3          | 1134.1 | 1131.5 | 6.08               | 5.91  | 5.70  | 25.59    | -27.7           | -32.1 | -35.6 | 0.63               | 0.81             | -89.7                           | -115.8 | -138.4 | -157.8 | 336.6             | -147.39                          |
| 3.75   | 14.05             | 1139.8          | 1137.6 | 1135.1 | 6.06               | 5.88  | 5.66  | 25.59    | -27.7           | -32.3 | -35.5 | 0.70               | 0.92             | -90.0                           | -115.8 | -138.6 | -158.3 | 472.5             | -150.89                          |
| 4.00   | 13.94             | 1143.3          | 1141.1 | 1138.6 | 6.05               | 5.85  | 5.62  | 25.59    | -27.8           | -32.5 | -35.7 | 0.76               | 0.99             | -90.5                           | -115.9 | -138.6 | -157.4 | 564.9             | -152.72                          |
| 4.25   | 13.78             | 1146.7          | 1144.6 | 1142.2 | 6.03               | 5.82  | 5.58  | 25.59    | -27.8           | -32.6 | -36.2 | 0.82               | 1.02             | -89.5                           | -115.7 | -138.0 | -157.7 | 931.1             | -156.67                          |
| 4.50   | 13.59             | 1150.1          | 1148.1 | 1145.7 | 6.02               | 5.79  | 5.55  | 25.60    | -27.9           | -32.8 | -36.5 | 0.88               | 1.02             | -90.0                           | -115.5 | -138.3 | -157.0 | 1000.0            | -157.25                          |

\*at 25°C unless mentioned otherwise



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