

Coaxial

# Voltage Controlled Oscillator

## ZX95-1185+

5V Tuning for PLL IC's 1185 MHz

### Features

- Linear tuning characteristics
- Low phase noise
- Low pulling
- Low pushing
- Protected by US patent 6,790,049



CASE STYLE: GB956

### Applications

- R&D
- LAB
- Instrumentation
- Wireless communications
- Cellular infrastructure

| Connectors | Model        | Price       | Qty.  |
|------------|--------------|-------------|-------|
| SMA        | ZX95-1185-S+ | \$44.95 ea. | (1-9) |

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

*The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.*

### Electrical Specifications

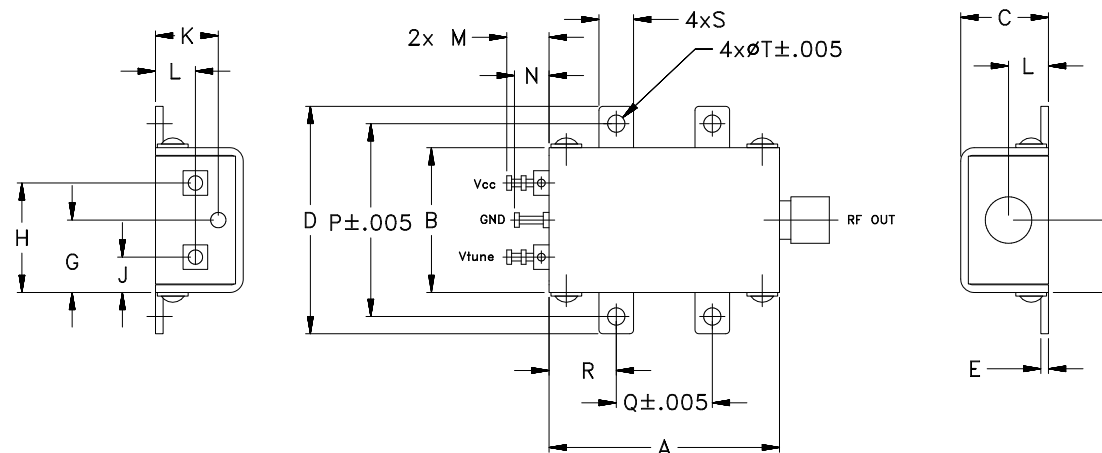
| MODEL NO.  | FREQ. (MHz) |      | POWER OUTPUT (dBm) | PHASE NOISE dBc/Hz SSB at offset frequencies, kHz |      |      |      | TUNING |                   |                     |               | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc)                 |      | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | DC OPERATING POWER |      |      |      |             |              |
|------------|-------------|------|--------------------|---|------|------|------|--------|-------------------|---------------------|---------------|-----------------------------|---------------------------------|------|-----------------------------|-----------------|--------------------|------|------|------|-------------|--------------|
|            | Min.        | Max. |                    | Typ.  | 1    | 10   | 100  | 1000   | VOLTAGE RANGE (V) | SENSITIVITY (MHz/V) | PORT CAP (pF) |                             | 3 dB MODULATION BANDWIDTH (MHz) | Typ. |                             |                 | Typ.               | Max. | Typ. | Typ. | Vcc (volts) | Current (mA) |
|            |             |      |                    |   |      |      |      |        |                   |                     |               |                             |                                 |      |                             |                 |                    |      |      |      |             |              |
| ZX95-1185+ | 1185        |      | +3                 | -83   | -108 | -128 | -148 | 0.5    | 3.9               | 30                  | 20            | 100                         | -90                             | -20  | -12                         | 1               | 0.2                | 5    | 35   |      |             |              |

### 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) | 6V             |
| 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  | .45   | .57   | .18  | .33  | .21  | .22  | .18  | 1.00  | .50   | .35  | .18  | .106 | GRAM |
| 30.48 | 19.05 | 11.68 | 29.97 | 1.02 | 9.65 | 11.43 | 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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REV. OR  
 M113462  
 EDR-8583F2  
 ZX95-1185+  
 RAV  
 090830  
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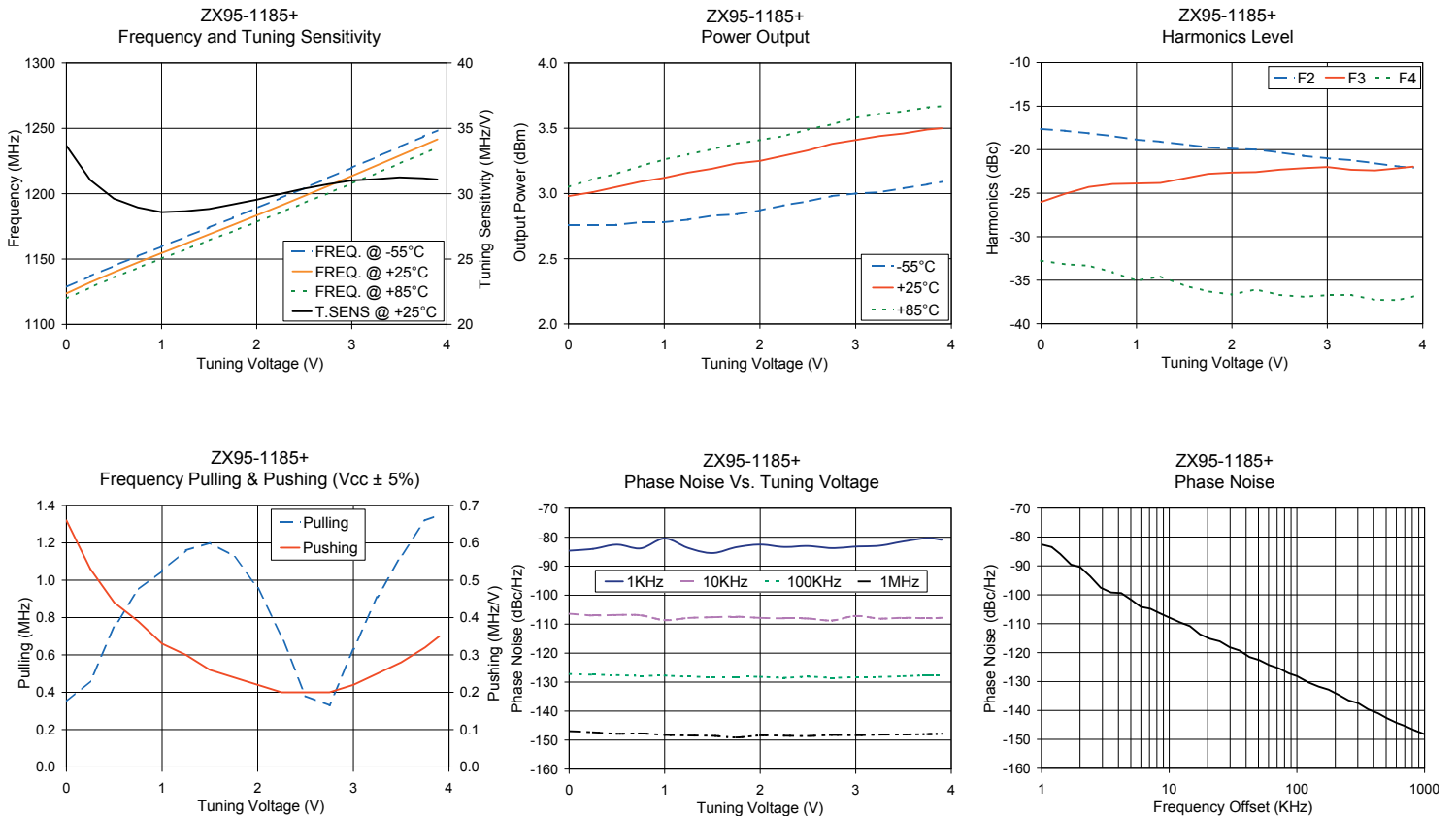
**Notes:** 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established 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).

# Performance Data & Curves\*

# ZX95-1185+

| 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 1185 MHz (dBc/Hz) |
|--------|-------------------|-----------------|--------|--------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|----------------------------------|
|        |                   | -55°C           | +25°C  | +85°C  | -55°C              | +25°C | +85°C |          | F2              | F3    | F4    |                    |                  | 1kHz                            | 10kHz  | 100kHz | 1MHz   |                   |                                  |
| 0.00   | 33.66             | 1128.6          | 1123.7 | 1119.7 | 2.76               | 2.98  | 3.05  | 25.44    | -17.6           | -26.0 | -32.8 | 0.66               | 0.35             | -84.6                           | -106.4 | -127.2 | -146.9 | 1.0               | -82.57                           |
| 0.25   | 31.05             | 1136.9          | 1132.2 | 1128.2 | 2.76               | 3.01  | 3.11  | 25.49    | -17.8           | -25.1 | -33.2 | 0.53               | 0.46             | -84.0                           | -107.0 | -127.4 | -147.3 | 2.0               | -90.38                           |
| 0.50   | 29.61             | 1144.7          | 1139.9 | 1135.9 | 2.76               | 3.05  | 3.15  | 25.52    | -18.1           | -24.3 | -33.3 | 0.44               | 0.75             | -82.6                           | -106.8 | -127.6 | -147.8 | 3.5               | -99.20                           |
| 0.75   | 28.94             | 1152.2          | 1147.3 | 1143.2 | 2.78               | 3.09  | 3.21  | 25.56    | -18.4           | -23.9 | -34.1 | 0.39               | 0.95             | -83.8                           | -107.0 | -127.8 | -147.7 | 6.0               | -104.18                          |
| 1.00   | 28.59             | 1159.6          | 1154.6 | 1150.3 | 2.78               | 3.12  | 3.26  | 25.60    | -18.9           | -23.9 | -35.1 | 0.33               | 1.05             | -80.5                           | -108.6 | -127.7 | -148.2 | 8.5               | -106.45                          |
| 1.25   | 28.66             | 1166.9          | 1161.7 | 1157.3 | 2.80               | 3.16  | 3.30  | 25.64    | -19.1           | -23.8 | -34.6 | 0.30               | 1.16             | -83.8                           | -107.9 | -128.1 | -148.4 | 10.0              | -107.88                          |
| 1.50   | 28.83             | 1174.2          | 1168.9 | 1164.3 | 2.83               | 3.19  | 3.34  | 25.67    | -19.4           | -23.3 | -35.6 | 0.26               | 1.20             | -85.5                           | -107.6 | -128.2 | -148.5 | 20.8              | -115.22                          |
| 1.75   | 29.18             | 1181.6          | 1176.1 | 1171.3 | 2.84               | 3.23  | 3.38  | 25.71    | -19.7           | -22.8 | -36.3 | 0.24               | 1.13             | -83.4                           | -107.4 | -128.2 | -149.1 | 35.5              | -119.27                          |
| 2.00   | 29.54             | 1189.0          | 1183.4 | 1178.4 | 2.87               | 3.25  | 3.41  | 25.74    | -19.9           | -22.6 | -36.7 | 0.22               | 0.96             | -82.5                           | -107.8 | -128.2 | -148.4 | 60.7              | -124.30                          |
| 2.25   | 29.99             | 1196.6          | 1190.8 | 1185.6 | 2.91               | 3.29  | 3.44  | 25.78    | -20.0           | -22.6 | -36.1 | 0.20               | 0.70             | -83.4                           | -108.0 | -128.5 | -148.5 | 86.7              | -127.18                          |
| 2.50   | 30.39             | 1204.3          | 1198.3 | 1192.9 | 2.94               | 3.33  | 3.49  | 25.81    | -20.3           | -22.3 | -36.7 | 0.20               | 0.38             | -83.0                           | -108.1 | -128.1 | -148.6 | 100.0             | -128.10                          |
| 2.75   | 30.73             | 1212.0          | 1205.9 | 1200.3 | 2.98               | 3.38  | 3.53  | 25.85    | -20.7           | -22.1 | -36.9 | 0.20               | 0.33             | -83.8                           | -108.7 | -128.5 | -148.2 | 211.6             | -134.56                          |
| 3.00   | 31.01             | 1219.9          | 1213.5 | 1207.8 | 3.00               | 3.41  | 3.58  | 25.89    | -21.0           | -22.0 | -36.7 | 0.22               | 0.63             | -83.2                           | -107.2 | -128.3 | -148.3 | 302.4             | -137.48                          |
| 3.25   | 31.11             | 1227.8          | 1221.3 | 1215.4 | 3.01               | 3.44  | 3.61  | 25.92    | -21.2           | -22.3 | -36.7 | 0.25               | 0.91             | -82.9                           | -108.1 | -128.2 | -148.1 | 361.5             | -139.62                          |
| 3.50   | 31.25             | 1235.7          | 1229.1 | 1223.0 | 3.04               | 3.46  | 3.63  | 25.96    | -21.6           | -22.4 | -37.3 | 0.28               | 1.13             | -81.5                           | -107.8 | -128.0 | -148.1 | 507.5             | -142.71                          |
| 3.75   | 31.18             | 1243.6          | 1236.9 | 1230.7 | 3.07               | 3.49  | 3.66  | 26.00    | -21.9           | -22.1 | -37.3 | 0.32               | 1.32             | -80.3                           | -108.0 | -127.7 | -148.0 | 606.7             | -144.34                          |
| 3.90   | 31.09             | 1248.4          | 1241.6 | 1235.3 | 3.09               | 3.50  | 3.67  | 26.02    | -22.1           | -22.0 | -36.9 | 0.35               | 1.35             | -80.9                           | -107.8 | -127.7 | -147.8 | 1000.0            | -148.20                          |

\*at 25°C unless mentioned otherwise



For detailed performance specs & shopping online see web site

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