

Coaxial

Voltage Controlled Oscillator

ZX95-595+

5V Tuning for PLL IC's 560 to 595 MHz

Features

- Linear tuning characteristics
- Low phase noise
- Low pushing
- Low pulling
- 0.5-5V tuning voltage range
- Protected by US patent 6,790,049



CASE STYLE: GB956

| Connectors | Model | Price | Qty. |
|------------|-------------|-------------|-------|
| SMA | ZX95-595-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.

Applications

- R&D
- LAB
- Instrumentation
- PLL circuitry
- Wireless microphones

Electrical Specifications

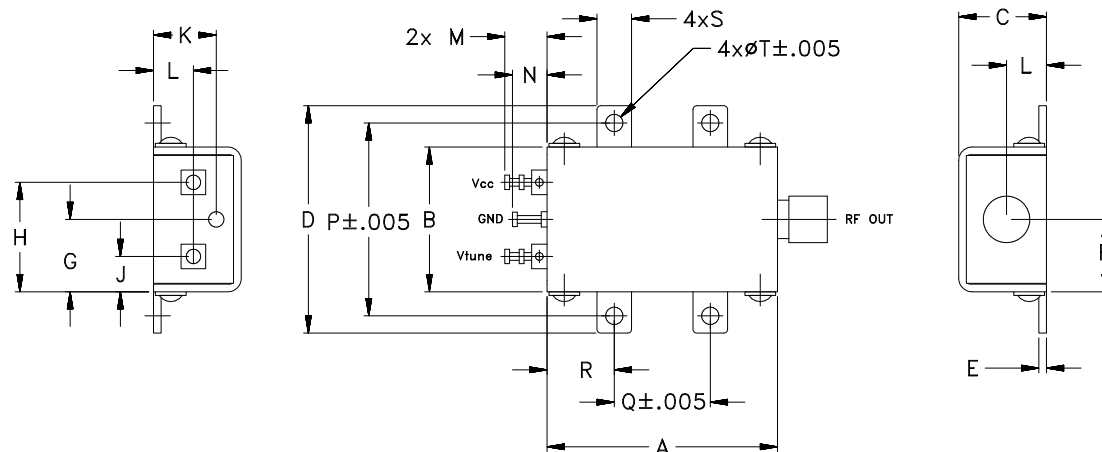
| MODEL NO. | FREQ. (MHz) | | POWER OUTPUT (dBm) | PHASE NOISE dBc/Hz SSB at offset frequencies, KHz | | | | TUNING | | | | | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc) | | PULLING pk-pk @ 12 dB (MHz) | PUSHING (MHz/V) | DC OPERATING POWER | |
|-----------|-------------|------|--------------------|---|------|------|------|--------|-------------------|---------------------|---------------|---------------------------------|-----------------------------|-----------------|------|-----------------------------|-----------------|--------------------|------|
| | 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. |
| ZX95-595+ | 560 | 595 | -0.5 | -89 | -112 | -132 | -151 | 0.5 | 5 | 12 - 13 | 70 | 80 | -90 | -19 | -10 | 0.4 | 0.1 | 5 | 17 |

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) | 7V |
| 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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ISO 9001 ISO 14001 AS 9100 CERTIFIED

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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.

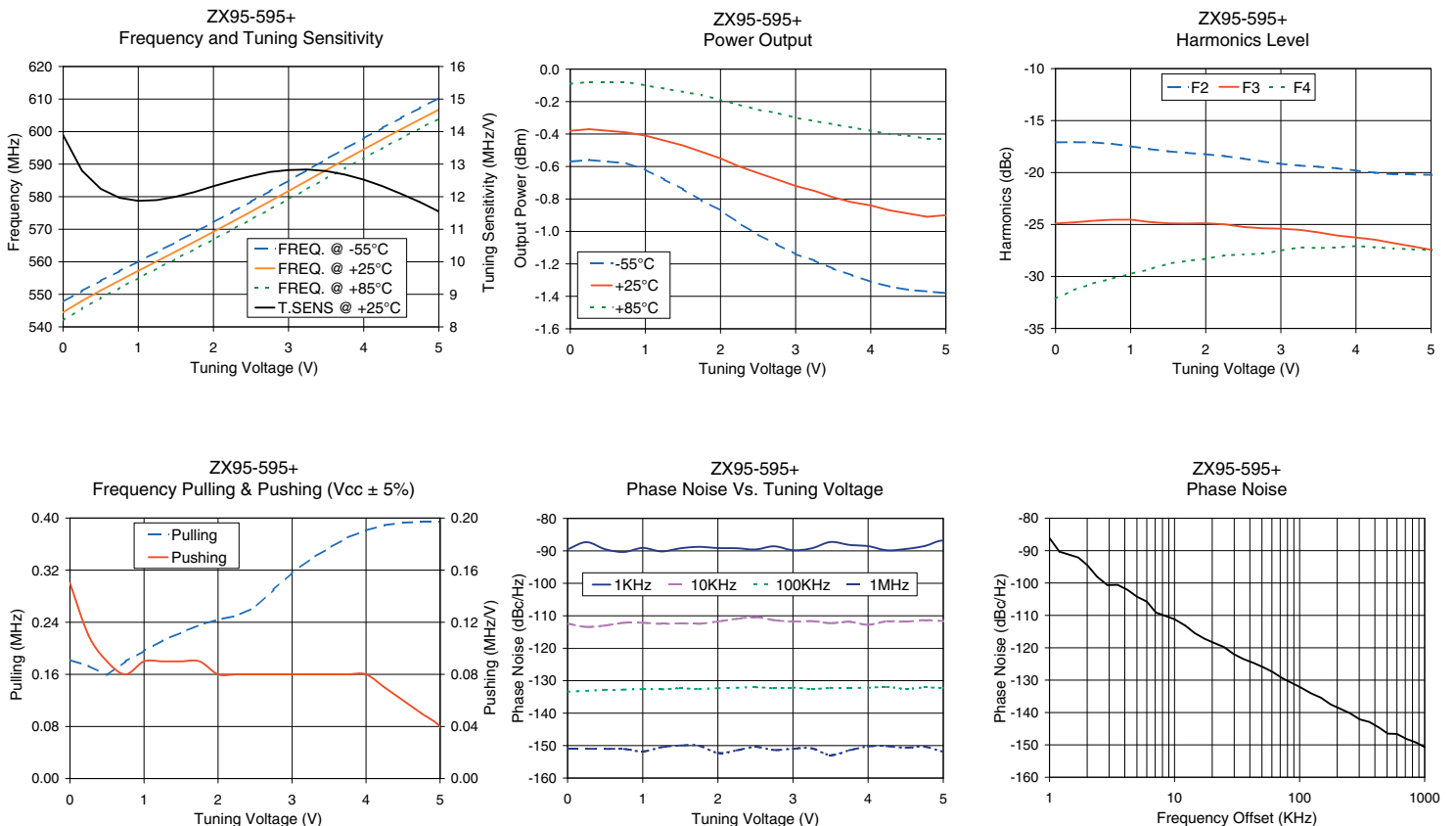
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Performance Data & Curves*

ZX95-595+

| 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 578 MHz (dBc/Hz) |
|--------|-------------------|-----------------|-------|-------|--------------------|-------|-------|----------|-----------------|-------|-------|--------------------|------------------|---------------------------------|--------|--------|--------|-------------------|---------------------------------|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 13.89 | 547.7 | 544.5 | 542.0 | -0.57 | -0.38 | -0.09 | 11.66 | -17.1 | -24.9 | -32.1 | 0.15 | 0.18 | -89.5 | -112.4 | -133.4 | -150.9 | 1.0 | -86.14 |
| 0.50 | 12.24 | 554.1 | 551.2 | 548.9 | -0.57 | -0.38 | -0.08 | 11.66 | -17.1 | -24.6 | -30.7 | 0.09 | 0.16 | -89.5 | -113.0 | -132.8 | -151.0 | 2.0 | -94.45 |
| 0.75 | 11.96 | 557.1 | 554.2 | 552.0 | -0.58 | -0.39 | -0.08 | 11.66 | -17.2 | -24.5 | -30.2 | 0.08 | 0.18 | -90.4 | -112.2 | -132.8 | -151.0 | 3.5 | -100.57 |
| 1.00 | 11.87 | 560.1 | 557.2 | 555.0 | -0.62 | -0.41 | -0.10 | 11.66 | -17.5 | -24.5 | -29.8 | 0.09 | 0.20 | -89.1 | -112.2 | -132.6 | -151.8 | 6.0 | -105.73 |
| 1.25 | 11.90 | 563.0 | 560.2 | 558.0 | -0.68 | -0.44 | -0.12 | 11.66 | -17.7 | -24.8 | -29.3 | 0.09 | 0.21 | -90.2 | -112.5 | -132.7 | -150.5 | 8.5 | -110.21 |
| 1.50 | 12.00 | 566.0 | 563.2 | 560.9 | -0.74 | -0.47 | -0.14 | 11.66 | -18.0 | -24.9 | -28.8 | 0.09 | 0.22 | -89.2 | -112.4 | -132.4 | -150.0 | 10.0 | -111.19 |
| 1.75 | 12.14 | 569.1 | 566.2 | 563.9 | -0.81 | -0.51 | -0.16 | 11.66 | -18.1 | -24.9 | -28.5 | 0.09 | 0.24 | -88.8 | -112.5 | -132.5 | -150.0 | 20.8 | -118.55 |
| 2.00 | 12.32 | 572.1 | 569.2 | 566.9 | -0.87 | -0.55 | -0.19 | 11.67 | -18.2 | -24.9 | -28.3 | 0.08 | 0.24 | -89.1 | -111.8 | -132.3 | -152.3 | 35.5 | -123.49 |
| 2.25 | 12.48 | 575.3 | 572.3 | 569.9 | -0.95 | -0.60 | -0.22 | 11.67 | -18.4 | -25.0 | -28.0 | 0.08 | 0.25 | -89.2 | -111.0 | -132.2 | -151.5 | 60.7 | -127.44 |
| 2.50 | 12.63 | 578.5 | 575.4 | 573.0 | -1.02 | -0.64 | -0.25 | 11.68 | -18.7 | -25.2 | -27.9 | 0.08 | 0.26 | -89.6 | -110.4 | -132.0 | -150.4 | 86.7 | -130.88 |
| 2.75 | 12.76 | 581.7 | 578.6 | 576.1 | -1.08 | -0.68 | -0.27 | 11.69 | -18.9 | -25.4 | -27.8 | 0.08 | 0.29 | -88.6 | -111.4 | -132.3 | -151.4 | 100.0 | -132.07 |
| 3.00 | 12.82 | 584.9 | 581.8 | 579.3 | -1.14 | -0.72 | -0.30 | 11.71 | -19.2 | -25.4 | -27.5 | 0.08 | 0.32 | -89.8 | -111.8 | -132.1 | -151.0 | 148.1 | -135.42 |
| 3.25 | 12.84 | 588.2 | 585.0 | 582.4 | -1.18 | -0.75 | -0.32 | 11.73 | -19.3 | -25.5 | -27.2 | 0.08 | 0.34 | -89.2 | -111.7 | -132.6 | -150.8 | 177.0 | -137.47 |
| 3.50 | 12.79 | 591.5 | 588.2 | 585.6 | -1.23 | -0.79 | -0.34 | 11.74 | -19.4 | -25.8 | -27.3 | 0.08 | 0.35 | -87.3 | -112.3 | -132.2 | -152.9 | 211.6 | -138.85 |
| 3.75 | 12.68 | 594.7 | 591.4 | 588.7 | -1.27 | -0.82 | -0.36 | 11.76 | -19.6 | -26.1 | -27.2 | 0.08 | 0.37 | -88.2 | -111.8 | -132.3 | -151.5 | 302.4 | -142.10 |
| 4.00 | 12.52 | 597.9 | 594.5 | 591.9 | -1.31 | -0.84 | -0.38 | 11.78 | -19.8 | -26.3 | -27.1 | 0.08 | 0.38 | -88.5 | -112.8 | -132.2 | -150.3 | 361.5 | -142.92 |
| 4.25 | 12.32 | 601.1 | 597.7 | 595.0 | -1.34 | -0.87 | -0.40 | 11.80 | -20.0 | -26.5 | -27.2 | 0.07 | 0.39 | -89.8 | -111.7 | -131.9 | -150.2 | 507.5 | -146.53 |
| 4.50 | 12.08 | 604.2 | 600.7 | 598.0 | -1.36 | -0.89 | -0.41 | 11.83 | -20.2 | -26.8 | -27.3 | 0.06 | 0.39 | -89.4 | -111.8 | -132.5 | -150.7 | 600.0 | -146.62 |
| 4.75 | 11.83 | 607.3 | 603.8 | 601.0 | -1.37 | -0.91 | -0.43 | 11.85 | -20.2 | -27.1 | -27.4 | 0.05 | 0.39 | -88.5 | -111.4 | -132.1 | -150.3 | 851.6 | -149.24 |
| 5.00 | 11.54 | 610.3 | 606.7 | 604.0 | -1.38 | -0.90 | -0.43 | 11.87 | -20.2 | -27.4 | -27.5 | 0.04 | 0.39 | -86.8 | -111.6 | -132.2 | -151.8 | 1000.0 | -150.67 |

*at 25°C unless mentioned otherwise



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