*Coaxial*

# Voltage Controlled Oscillator

# ZX95-4540+

## 5V Tuning for PLL IC's 4340 to 4540 MHz

### Features

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

### Applications

- r & d
- lab
- instrumentation
- wireless communications
- WiMAX 5.9 GHz

CASE STYLE: GB956

| Connectors | Model |
|---|---|
| **SMA** | ZX95-4540-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 Typ. | | | | TUNING | | | | | NON HARMONIC SPURIOUS (dBc) | HARMONICS (dBc) | | PULLING pk-pk @12 dBr (MHz) | PUSHING (MHz/V) | DC OPERATING POWER | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | VOLTAGE RANGE (V) | | SENSI-TIVITY (MHz/V) | PORT CAP (pF) | 3 dB MODULATION BANDWIDTH (MHz) | | | | | | Vcc (volts) | Current (mA) |
| | Min. | Max. | Typ. | 1 | 10 | 100 | 1000 | Min. | Max. | Typ. | Typ. | Typ. | Typ. | Typ. | Max. | Typ. | Typ. | | Max. |
| ZX95-4540+ | 4340 | 4540 | +5 | -68 | -93 | -117 | -137 | 0.5 | 4.5 | 53-85 | 14 | 140 | -90 | -28 | -18 | 3.5 | 4 | 5 | 45 |

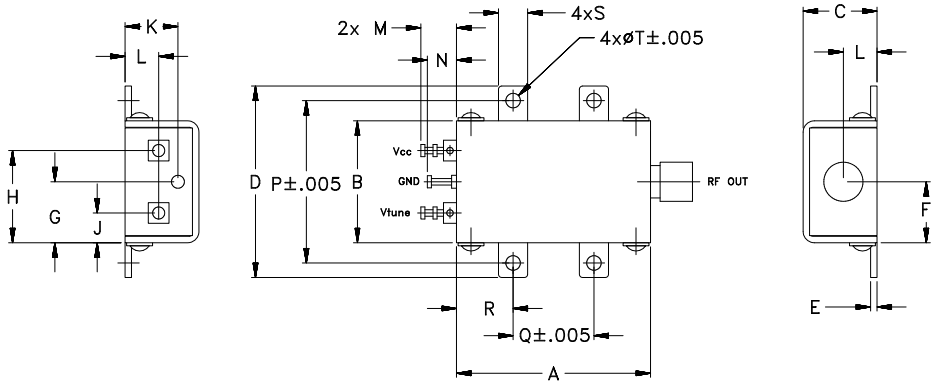
### Maximum Ratings

| | |
|---|---|
| Operating Temperature | -55°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Absolute Max. Supply Voltage (Vcc) | 7.0V |
| Absolute Max. Tuning Voltage (Vtune) | 6.5V |
| 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**

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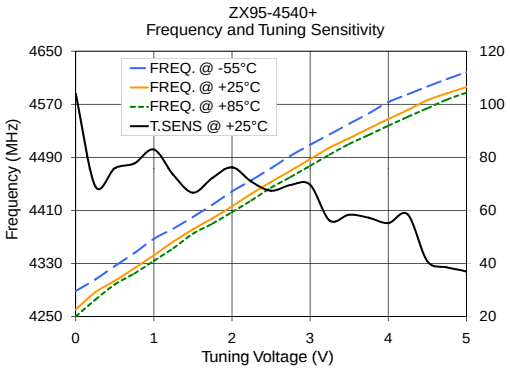
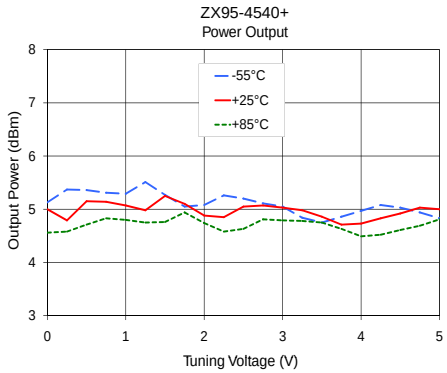
# Performance Data & Curves*

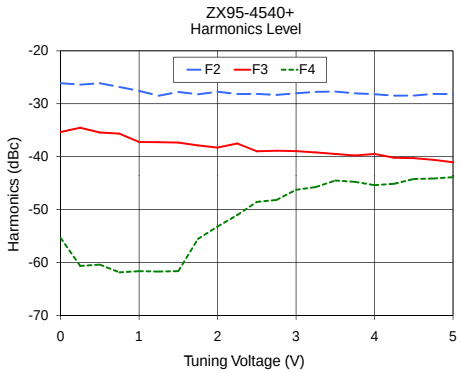
# ZX95-4540+

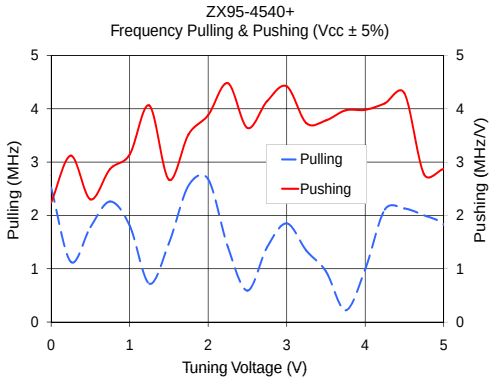
| V TUNE | TUNE SENS (MHz/V) | FREQUENCY (MHz) | | | POWER OUTPUT (dBm) | | | Icc (mA) | HARMONICS (dBc) | | | FREQ. PUSH (MHz/V) | FREQ. PULL (MHz) | PHASE NOISE (dBc/Hz) at offsets | | | | FREQ OFFSET (kHz) | PHASE NOISE at 4440 MHz (dBc/Hz) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | -55°C | +25°C | +85°C | -55°C | +25°C | +85°C | | F2 | F3 | F4 | | | 1kHz | 10kHz | 100kHz | 1MHz | | |
| 0.00 | 103.93 | 4288.6 | 4260.8 | 4250.2 | 5.13 | 5.00 | 4.56 | 36.01 | -26.1 | -35.3 | -55.3 | 2.24 | 2.52 | -69.15 | -95.7 | -117.6 | -137.8 | 1.0 | -67.39 |
| 0.25 | 69.10 | 4306.1 | 4286.8 | 4275.6 | 5.37 | 4.79 | 4.58 | 36.07 | -26.4 | -34.5 | -60.6 | 3.12 | 1.13 | -67.98 | -94.0 | -116.1 | -136.3 | 2.0 | -75.96 |
| 0.50 | 75.91 | 4326.2 | 4304.0 | 4298.6 | 5.36 | 5.15 | 4.71 | 36.31 | -26.1 | -35.4 | -60.4 | 2.30 | 1.78 | -72.23 | -97.3 | -119.7 | -139.8 | 3.5 | -82.93 |
| 0.75 | 77.72 | 4345.8 | 4323.0 | 4315.0 | 5.31 | 5.14 | 4.83 | 36.26 | -26.8 | -35.6 | -61.9 | 2.87 | 2.26 | -70.48 | -95.5 | -118.0 | -138.5 | 6.0 | -88.30 |
| 1.00 | 82.96 | 4367.3 | 4342.4 | 4334.1 | 5.29 | 5.07 | 4.80 | 36.22 | -27.6 | -37.2 | -61.6 | 3.14 | 1.81 | -70.36 | -94.7 | -117.6 | -137.9 | 8.5 | -91.62 |
| 1.25 | 73.35 | 4382.7 | 4363.2 | 4353.3 | 5.51 | 4.98 | 4.75 | 36.16 | -28.5 | -37.3 | -61.7 | 4.06 | 0.72 | -66.84 | -92.6 | -115.5 | -136.0 | 10.0 | -93.21 |
| 1.50 | 66.68 | 4400.3 | 4381.5 | 4375.0 | 5.27 | 5.25 | 4.76 | 36.36 | -27.8 | -37.3 | -61.6 | 2.67 | 1.48 | -69.76 | -96.9 | -119.5 | -140.1 | 20.8 | -100.50 |
| 1.75 | 72.27 | 4418.7 | 4398.2 | 4390.2 | 5.05 | 5.10 | 4.94 | 36.33 | -28.2 | -37.9 | -55.5 | 3.52 | 2.56 | -67.80 | -93.8 | -117.6 | -138.0 | 35.5 | -105.82 |
| 2.00 | 76.28 | 4438.6 | 4416.3 | 4407.5 | 5.08 | 4.88 | 4.74 | 36.28 | -27.7 | -38.3 | -53.2 | 3.88 | 2.68 | -68.09 | -93.5 | -116.6 | -137.1 | 60.7 | -110.91 |
| 2.25 | 70.81 | 4455.7 | 4435.3 | 4425.4 | 5.26 | 4.85 | 4.58 | 36.23 | -28.2 | -37.5 | -51.0 | 4.48 | 1.41 | -68.13 | -93.3 | -115.5 | -136.0 | 86.7 | -114.43 |
| 2.50 | 67.42 | 4473.7 | 4453.0 | 4444.4 | 5.20 | 5.05 | 4.63 | 36.31 | -28.1 | -39.0 | -48.6 | 3.64 | 0.59 | -68.87 | -93.8 | -117.2 | -137.9 | 100.0 | -115.68 |
| 2.75 | 69.58 | 4492.5 | 4469.9 | 4460.5 | 5.11 | 5.07 | 4.81 | 36.30 | -28.3 | -38.9 | -48.2 | 4.14 | 1.40 | -68.46 | -92.9 | -116.0 | -136.4 | 148.1 | -119.27 |
| 3.00 | 69.66 | 4509.0 | 4487.3 | 4477.2 | 5.05 | 5.03 | 4.79 | 36.30 | -28.0 | -39.0 | -46.3 | 4.42 | 1.85 | -66.79 | -92.0 | -115.2 | -135.9 | 177.0 | -120.90 |
| 3.25 | 56.21 | 4524.7 | 4504.7 | 4494.3 | 4.84 | 4.98 | 4.78 | 36.40 | -27.8 | -39.2 | -45.7 | 3.73 | 1.34 | -68.79 | -93.8 | -116.6 | -137.1 | 211.6 | -122.36 |
| 3.50 | 58.39 | 4540.6 | 4518.7 | 4510.2 | 4.75 | 4.86 | 4.75 | 36.48 | -27.7 | -39.5 | -44.5 | 3.78 | 0.95 | -68.89 | -92.8 | -116.2 | -136.7 | 302.4 | -125.59 |
| 3.75 | 57.25 | 4556.2 | 4533.3 | 4523.7 | 4.86 | 4.71 | 4.63 | 36.50 | -28.0 | -39.8 | -44.8 | 3.97 | 0.22 | -66.89 | -91.9 | -115.4 | -136.0 | 361.5 | -127.15 |
| 4.00 | 55.25 | 4573.1 | 4547.6 | 4537.6 | 4.97 | 4.73 | 4.49 | 36.53 | -28.2 | -39.5 | -45.4 | 3.98 | 0.99 | -66.61 | -91.9 | -115.1 | -135.8 | 507.5 | -130.25 |
| 4.25 | 58.50 | 4584.9 | 4561.5 | 4551.0 | 5.08 | 4.83 | 4.52 | 36.55 | -28.5 | -40.2 | -45.1 | 4.10 | 2.11 | -66.41 | -91.5 | -114.7 | -135.5 | 606.7 | -131.80 |
| 4.50 | 40.89 | 4596.6 | 4576.1 | 4563.9 | 5.03 | 4.92 | 4.61 | 36.61 | -28.5 | -40.3 | -44.2 | 4.29 | 2.13 | -67.35 | -93.5 | -115.8 | -136.9 | 851.6 | -134.81 |

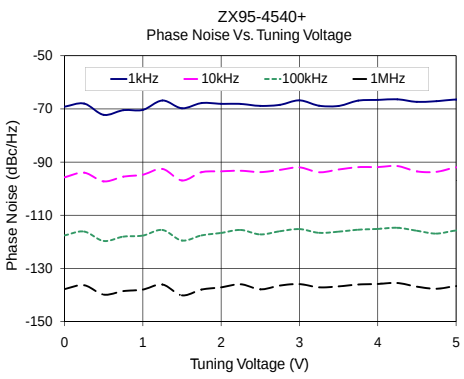
*at 25°C unless mentioned otherwise

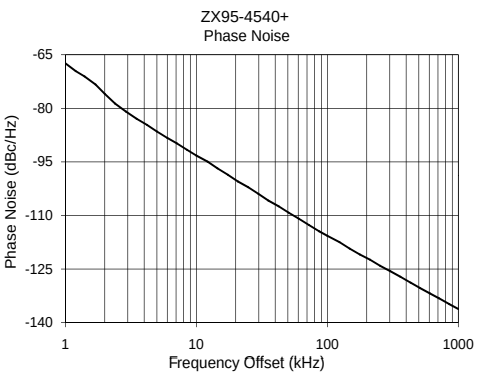
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