

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 5.9GHz



CASE STYLE: GB956

Connectors	Model	Price	Qty.
SMA	ZX95-4540-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

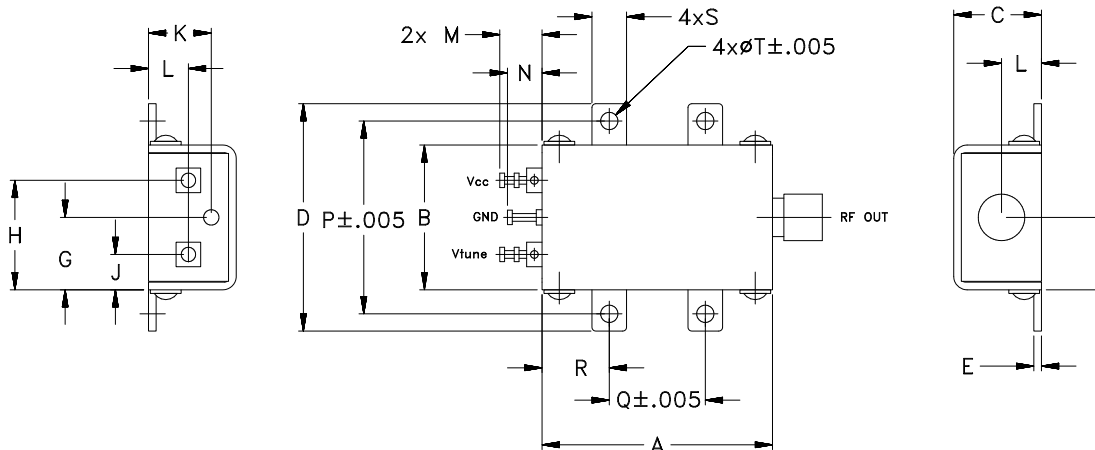
MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies, kHz				TUNING				NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER		
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)	SENSITIVITY (MHz/V)	PORT CAP (pF)		3 dB MODULATION BANDWIDTH (MHz)	Typ.			Typ.	Max.	Typ.
ZX95-4540+	4340	4540	+4	-66	-92	-113	-133	0.5	4.5	75 - 85	10	120	-90	-28	-18	5	1	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.

### 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



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

For detailed performance specs & shopping online see web site

REV. OR  
M118009  
ED-12963/2  
EDR-8607/1MCLF2  
ZX95-4540+  
MCL/RAV  
090906  
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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\*

# ZX95-4540+

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	96.99	4248.9	4227.6	4209.6	4.02	3.66	2.48	34.48	-33.6	-50.5	-51.7	0.18	1.23	-67.0	-93.3	-113.3	-133.3	1.0	-66.39
0.25	96.32	4274.6	4251.9	4233.9	3.78	3.71	2.65	34.48	-33.9	-50.3	-49.6	0.06	7.34	-67.2	-91.8	-112.6	-132.9	2.0	-75.29
0.50	89.16	4297.8	4275.9	4256.7	3.87	3.51	2.65	34.50	-33.8	-50.2	-48.3	0.07	6.02	-66.6	-90.7	-112.1	-132.1	3.5	-81.44
0.75	77.75	4317.7	4298.2	4279.8	4.02	3.55	2.48	34.61	-33.7	-49.6	-47.1	0.08	2.28	-68.8	-92.1	-113.4	-133.1	6.0	-87.27
1.00	77.67	4337.7	4317.7	4301.0	4.07	3.69	2.54	34.66	-34.0	-50.1	-46.5	0.06	2.51	-69.5	-91.9	-113.5	-133.5	8.5	-90.43
1.25	83.91	4359.4	4337.1	4319.9	3.98	3.76	2.68	34.64	-33.9	-50.3	-45.4	0.15	5.89	-69.0	-92.7	-113.0	-133.2	10.0	-91.87
1.50	82.80	4380.0	4358.1	4339.1	3.95	3.68	2.72	34.64	-33.5	-49.9	-45.1	0.08	6.05	-63.5	-90.3	-111.8	-131.7	20.8	-98.44
1.75	77.97	4399.4	4378.8	4359.8	4.00	3.66	2.66	34.74	-33.6	-49.5	-45.3	0.05	3.66	-67.2	-91.8	-112.7	-132.9	35.5	-103.32
2.00	76.10	4418.4	4398.2	4380.5	4.14	3.68	2.65	34.80	-33.6	-48.8	-46.2	0.05	2.17	-66.6	-91.8	-113.0	-133.2	60.7	-107.55
2.25	81.90	4439.1	4417.3	4399.9	4.28	3.80	2.70	34.83	-33.7	-48.5	-46.1	0.17	5.86	-66.8	-92.6	-113.0	-133.2	86.7	-111.03
2.50	82.33	4459.6	4437.7	4419.0	4.32	3.95	2.83	34.84	-33.5	-48.2	-46.1	0.43	6.07	-65.9	-92.4	-112.5	-132.3	100.0	-112.52
2.75	83.26	4480.5	4458.3	4439.3	4.28	4.01	2.96	34.89	-32.5	-47.5	-48.9	0.79	2.91	-67.3	-90.3	-112.5	-132.8	148.1	-115.96
3.00	83.77	4501.3	4479.1	4460.1	4.33	3.98	3.03	34.93	-31.8	-46.4	-44.8	0.80	1.46	-66.0	-91.6	-112.4	-132.6	211.6	-118.94
3.25	81.14	4521.6	4500.1	4480.9	4.37	4.01	2.97	35.00	-32.4	-46.3	-45.4	0.87	4.57	-65.6	-92.4	-113.2	-133.3	302.4	-122.20
3.50	85.13	4542.6	4520.4	4501.9	4.34	4.04	3.00	35.01	-33.5	-47.0	-46.9	1.00	5.55	-65.2	-92.3	-113.2	-132.9	361.5	-123.13
3.75	89.44	4564.7	4541.7	4522.7	4.35	4.03	3.02	35.00	-35.6	-47.9	-49.0	1.06	3.85	-64.2	-91.7	-112.3	-132.2	507.5	-126.72
4.00	87.47	4586.7	4564.0	4544.3	4.33	4.06	3.04	35.04	-36.4	-48.8	-51.5	1.25	1.24	-66.0	-92.4	-112.7	-132.6	606.7	-128.26
4.25	87.71	4608.9	4585.9	4566.6	4.27	4.02	3.08	35.06	-37.7	-47.9	-53.0	1.26	4.69	-67.9	-91.3	-112.5	-132.7	851.6	-131.13
4.50	87.77	4631.3	4607.8	4588.4	4.35	3.97	3.09	35.07	-38.8	-47.5	-49.5	1.30	6.11	-66.8	-90.7	-112.3	-132.2	1000.0	-132.07

\*at 25°C unless mentioned otherwise

