

# Voltage Controlled Oscillator

## ZX95-5150A+

Frequency Doubling 5020 to 5145 MHz

### Features

- Frequency based on multiplication of carrier frequency
- Linear tuning characteristics
- Low phase noise
- Low pushing
- Low pulling
- 5V tuning voltage range
- Protected by US patent 6,790,049

### Applications

- R&D
- LAB
- Instrumentation
- Wireless communications
- Point-to-point radio



CASE STYLE: GB956

Connectors	Model	Price	Qty.
SMA	ZX95-5150A-S+	\$ 54.95 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

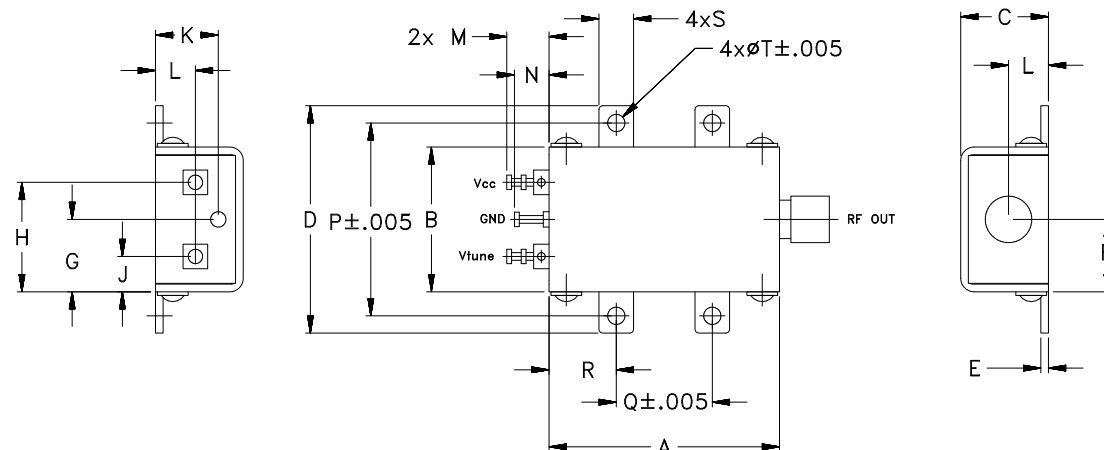
MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies, kHz				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc) Max.			PULLING pk-pk @12 dBr (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
	F 2X(1/2F)			1	10	100	1000	VOLTAGE RANGE (V)		PORT TIVITY (MHz/V)	CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)		F0.5	F1.5	F2			Vcc (volts)	Current (mA)
	Min.	Max.						Typ.	Min.											
ZX95-5150A+	5020	5145	+3.5	-73	-104	-126	-146	0.5	5	75 - 90	14	120	-90	-25	-15	-15	0.7	2.5	5	32

### 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



For detailed performance specs & shopping online see web site

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)

**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\*

# ZX95-5150A+

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 5083 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F0.5	F1.5	F2			1KHz	10KHz	100KHz	1MHz		
0.00	80.82	4887.6	4880.5	4868.5	1.29	0.59	-0.46	22.77	-35.7	-31.0	-38.7	0.92	0.06	-72.2	-101.2	-124.9	-144.3	1.0	-74.02
0.25	76.64	4907.4	4900.7	4889.3	1.85	0.97	0.01	23.09	-35.6	-32.2	-35.8	1.18	0.79	-75.2	-102.7	-125.3	-146.5	2.0	-82.72
0.50	74.30	4926.4	4919.8	4908.6	2.62	1.45	0.40	23.33	-35.5	-30.6	-36.8	1.38	1.09	-74.3	-103.3	-126.4	-145.2	3.5	-90.57
0.75	72.46	4944.8	4938.4	4927.2	3.10	1.99	0.70	23.57	-35.4	-36.4	-34.5	1.50	0.69	-76.2	-104.4	-126.2	-146.3	6.0	-96.80
1.00	71.64	4962.9	4956.5	4945.5	3.46	2.40	1.26	23.80	-35.4	-32.2	-34.2	1.59	0.14	-75.2	-104.2	-126.5	-146.6	8.5	-101.44
1.25	72.58	4980.8	4974.4	4963.4	3.69	2.68	1.56	24.02	-35.4	-33.5	-33.8	1.69	0.84	-74.5	-101.3	-126.2	-147.0	10.0	-102.91
1.50	74.67	4999.0	4992.6	4981.2	3.86	2.84	1.64	24.17	-35.2	-42.7	-33.3	1.85	1.15	-73.8	-102.6	-127.9	-146.7	20.8	-111.48
1.75	76.36	5017.9	5011.3	4999.7	4.10	3.09	1.74	24.29	-35.1	-37.9	-32.4	1.99	0.76	-74.8	-102.6	-125.9	-147.2	35.5	-116.70
2.00	77.64	5037.0	5030.3	5018.6	4.31	3.28	2.13	24.43	-34.9	-34.9	-31.6	2.11	0.27	-73.8	-101.4	-126.4	-146.3	60.7	-121.11
2.25	79.61	5056.3	5049.8	5037.9	4.47	3.48	2.44	24.59	-34.7	-36.4	-31.2	2.23	1.05	-72.9	-103.1	-126.1	-146.2	86.7	-124.96
2.50	82.82	5076.2	5069.7	5057.4	4.66	3.63	2.60	24.71	-34.6	-35.1	-30.6	2.37	1.12	-74.5	-103.5	-125.8	-145.8	100.0	-125.38
2.75	85.86	5096.8	5090.4	5077.7	4.67	3.69	2.71	24.79	-34.6	-29.9	-31.3	2.54	0.40	-73.2	-103.2	-125.8	-145.9	148.1	-128.48
3.00	88.79	5118.3	5111.8	5098.7	4.82	3.72	2.73	24.88	-34.5	-29.0	-31.5	2.63	0.56	-72.3	-103.3	-125.4	-146.7	177.0	-129.26
3.25	89.86	5140.5	5134.0	5120.6	4.98	3.87	2.70	24.98	-34.1	-27.9	-30.9	2.55	1.05	-72.9	-102.9	-125.6	-146.2	211.6	-129.97
3.50	90.47	5162.8	5156.5	5142.9	5.17	3.92	2.92	25.11	-33.7	-23.8	-30.2	2.22	0.59	-74.4	-102.6	-126.5	-146.2	302.4	-132.26
3.75	91.17	5185.4	5179.1	5165.5	4.88	3.61	2.94	25.19	-33.2	-26.2	-29.3	1.58	0.36	-73.4	-103.4	-125.8	-147.2	361.5	-133.53
4.00	89.03	5208.3	5201.9	5188.0	5.11	3.66	2.58	25.25	-33.1	-24.3	-29.3	0.60	0.94	-72.9	-102.0	-125.0	-144.6	507.5	-137.92
4.25	84.92	5230.6	5224.2	5210.6	5.21	3.66	2.61	25.34	-32.7	-24.1	-28.6	0.64	0.63	-71.1	-100.0	-123.7	-143.2	606.7	-139.97
4.50	80.43	5251.8	5245.4	5232.3	4.88	3.64	2.74	25.44	-32.3	-26.2	-27.8	1.99	0.28	-71.2	-98.8	-120.9	-141.2	851.6	-143.23
5.00	70.63	5291.1	5284.4	5271.7	4.97	3.46	2.50	25.49	-31.4	-26.1	-25.6	4.27	0.86	-69.1	-95.7	-117.6	-138.1	1000.0	-145.23

\*at 25°C unless mentioned otherwise

