

Coaxial

# Voltage Controlled Oscillator

## ZX95-78+

5V Tuning for PLL IC's 76 to 80 MHz

### Features

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



CASE STYLE: GB956

### Applications

- lab
- instrumentation
- wireless communications
- military & avionics

Connectors	Model	Price	Qty.
SMA	ZX95-78-S+	\$44.95 ea.	(1-9)

**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Electrical Specifications

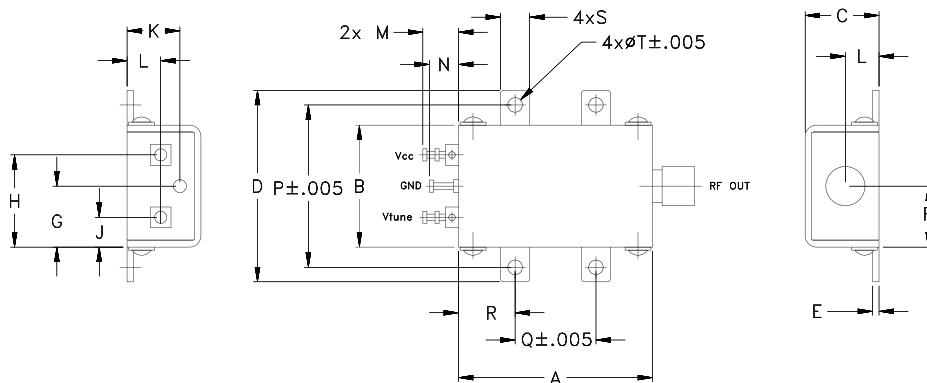
MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies, kHz				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER				
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)		PORT SENSITIVITY (MHz/V)	CAP MODULATION (pF)		3 dB BANDWIDTH (MHz)	Typ.			Typ.	Typ.	Typ.	Vcc (volts)	Current (mA)
	Min.	Max.							Min.	Max.												
ZX95-78+	76	80	+4	-96	-122	-142	-162	0.5	5	4	270	5	-90	-20	-10	0.01	0.1	5	25			

### 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	.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



For detailed performance specs & shopping online see web site

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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).

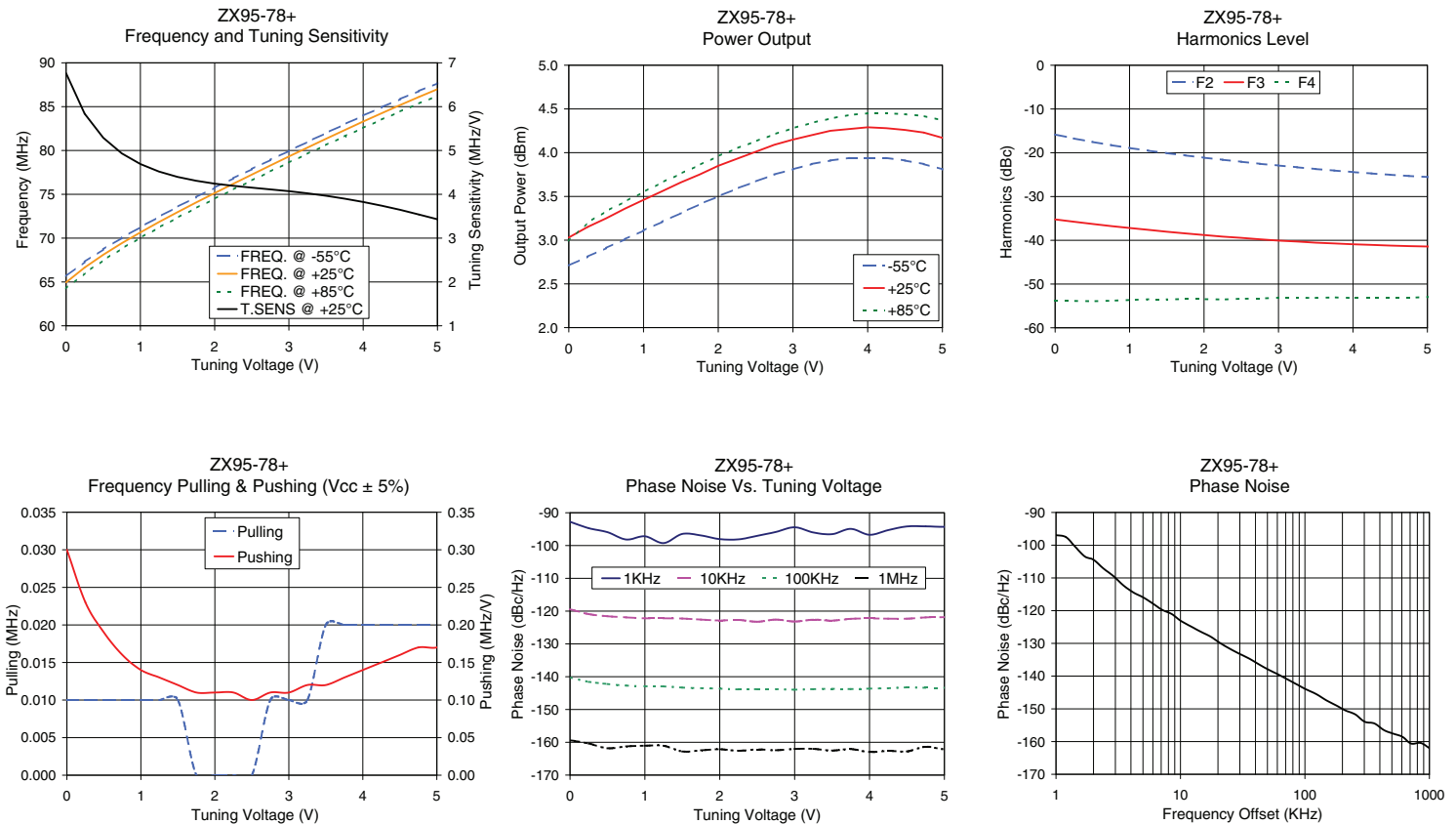
REV. OR  
M116540  
EDR-8433F2  
ZX95-78+  
RAV  
120830  
Page 1 of 2

# Performance Data & Curves\*

# ZX95-78+

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 78 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	6.76	65.7	65.0	64.2	2.71	3.03	2.99	17.83	-15.8	-35.2	-53.9	0.30	0.01	-92.8	-119.4	-140.2	-159.4	1.0	-96.93
0.50	5.29	68.7	68.1	67.5	2.91	3.25	3.33	17.93	-17.5	-36.3	-53.9	0.19	0.01	-95.9	-121.6	-142.2	-161.8	2.0	-104.44
0.75	4.93	70.0	69.4	68.8	3.01	3.36	3.44	17.98	-18.2	-36.8	-53.8	0.16	0.01	-98.2	-121.9	-142.7	-161.3	3.5	-112.36
1.00	4.69	71.3	70.7	70.0	3.11	3.46	3.55	18.01	-18.9	-37.2	-53.7	0.14	0.01	-97.2	-122.2	-142.9	-161.0	6.0	-117.83
1.25	4.52	72.4	71.8	71.2	3.21	3.56	3.66	18.04	-19.5	-37.6	-53.5	0.13	0.01	-99.3	-122.2	-143.0	-161.1	8.5	-121.03
1.50	4.40	73.6	73.0	72.3	3.31	3.66	3.76	18.07	-20.1	-38.0	-53.5	0.12	0.01	-96.5	-122.3	-143.3	-162.8	10.0	-123.06
1.75	4.31	74.7	74.1	73.4	3.41	3.75	3.86	18.10	-20.6	-38.4	-53.4	0.11	0.00	-96.9	-122.6	-143.5	-162.5	20.8	-129.88
2.00	4.24	75.8	75.1	74.5	3.50	3.85	3.96	18.13	-21.1	-38.8	-53.5	0.11	0.00	-98.1	-122.8	-143.6	-162.1	35.5	-134.61
2.25	4.19	76.8	76.2	75.5	3.59	3.93	4.05	18.15	-21.6	-39.2	-53.5	0.11	0.00	-98.1	-122.7	-143.9	-162.6	60.7	-139.46
2.50	4.15	77.9	77.2	76.6	3.67	4.01	4.13	18.17	-22.1	-39.5	-53.4	0.10	0.00	-97.0	-123.2	-143.8	-162.2	86.7	-142.61
2.75	4.11	78.9	78.3	77.6	3.75	4.09	4.21	18.20	-22.5	-39.8	-53.3	0.11	0.01	-95.9	-122.6	-143.8	-162.4	100.0	-143.89
3.00	4.07	80.0	79.3	78.6	3.81	4.15	4.28	18.22	-22.9	-40.1	-53.1	0.11	0.01	-94.4	-123.2	-144.0	-162.0	148.1	-147.37
3.25	4.02	81.0	80.3	79.6	3.87	4.20	4.34	18.24	-23.3	-40.3	-53.2	0.12	0.01	-96.0	-122.6	-143.8	-162.0	177.0	-148.90
3.50	3.97	82.0	81.3	80.6	3.91	4.25	4.39	18.25	-23.7	-40.6	-53.2	0.12	0.02	-96.5	-122.9	-143.7	-162.5	211.6	-150.51
3.75	3.90	83.0	82.3	81.6	3.94	4.27	4.43	18.27	-24.1	-40.7	-53.1	0.13	0.02	-94.9	-122.4	-143.8	-162.1	302.4	-153.95
4.00	3.83	84.0	83.3	82.6	3.94	4.29	4.45	18.28	-24.4	-40.9	-53.2	0.14	0.02	-96.7	-122.2	-143.6	-163.0	361.5	-154.46
4.25	3.74	84.9	84.3	83.5	3.94	4.28	4.45	18.29	-24.7	-41.1	-53.1	0.15	0.02	-95.3	-122.3	-143.5	-162.6	507.5	-157.54
4.50	3.65	85.9	85.2	84.5	3.91	4.26	4.44	18.31	-25.0	-41.2	-53.1	0.16	0.02	-94.2	-122.3	-143.3	-162.8	606.7	-158.54
4.75	3.54	86.8	86.1	85.4	3.87	4.23	4.42	18.31	-25.3	-41.3	-53.2	0.17	0.02	-94.2	-121.9	-143.4	-161.4	851.6	-160.43
5.00	3.43	87.7	87.0	86.2	3.81	4.17	4.37	18.32	-25.5	-41.4	-53.0	0.17	0.02	-94.3	-121.8	-143.4	-162.1	1000.0	-162.00

\*at 25°C unless mentioned otherwise



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