

Coaxial

# Voltage Controlled Oscillator

## ZX95-645+

5V Tuning for PLL IC's 610 to 645 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

### Applications

- r & d
- lab
- instrumentation
- PLL circuitry
- wireless microphones



CASE STYLE: GB956

Connectors	Model	Price	Qty.
SMA	ZX95-645-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

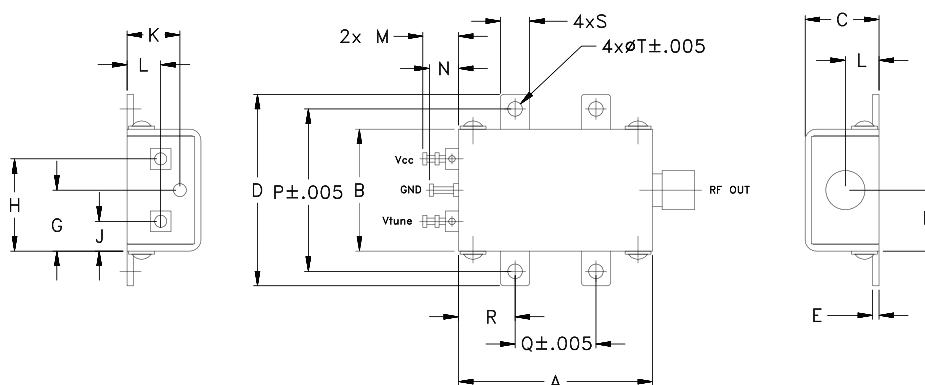
MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies, KHz				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)	SENSI- TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)		Typ.	Typ.			Typ.	Typ.
ZX95-645+	610	645	0	-88	-112	-132	-151	0.5	5	12-13	60	50	-90	-24	-16	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	.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).

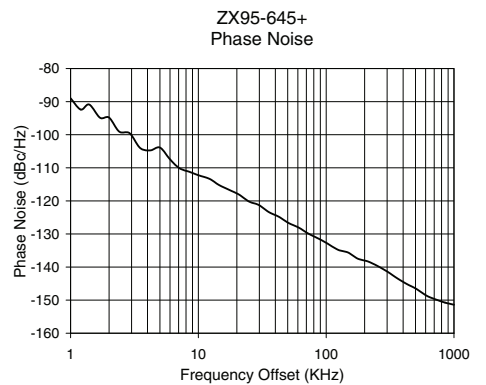
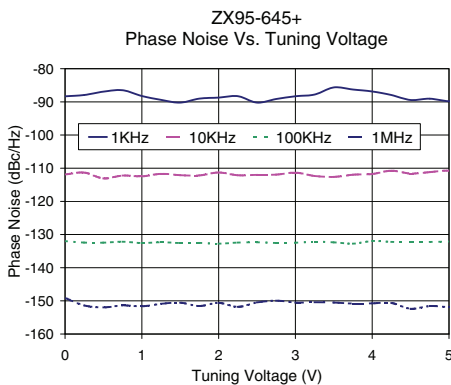
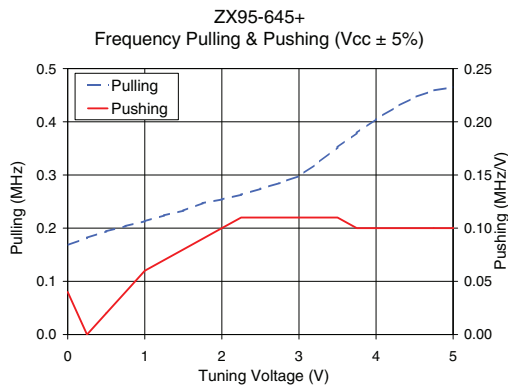
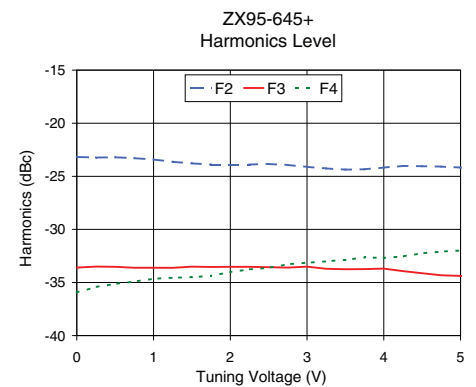
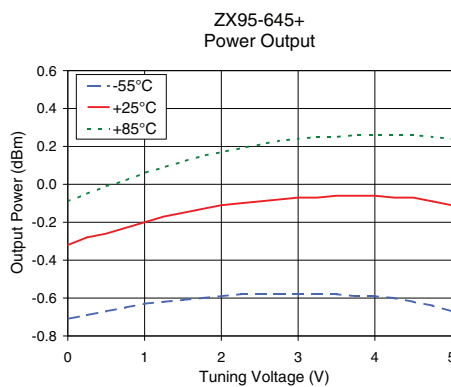
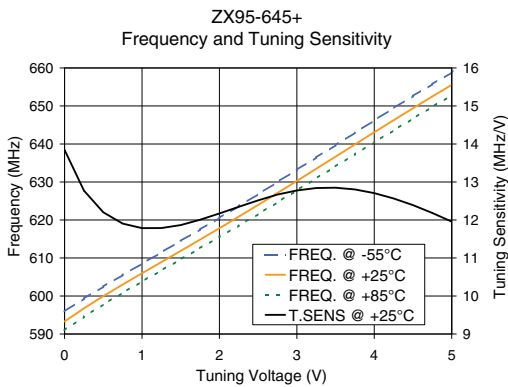
REV. OR  
M108877  
EDR-7747/15  
ZX95-645+  
RAV  
120830  
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# Performance Data & Curves\*

# ZX95-645+

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 626 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	13.84	595.9	593.3	591.0	-0.71	-0.32	-0.09	11.87	-23.2	-33.6	-36.0	0.04	0.17	-88.3	-111.9	-132.0	-149.1	1.0	-89.00
0.50	12.20	602.5	600.0	597.8	-0.67	-0.26	-0.01	11.90	-23.2	-33.5	-35.1	0.02	0.19	-86.9	-113.1	-132.5	-152.0	2.0	-94.82
0.75	11.90	605.5	603.0	600.8	-0.65	-0.23	0.02	11.91	-23.3	-33.6	-34.9	0.04	0.20	-86.5	-112.2	-132.2	-151.4	3.5	-104.01
1.00	11.79	608.5	606.0	603.8	-0.63	-0.20	0.06	11.93	-23.4	-33.6	-34.7	0.06	0.21	-88.2	-112.5	-132.6	-151.7	6.0	-107.43
1.25	11.79	611.5	608.9	606.7	-0.62	-0.17	0.09	11.94	-23.6	-33.6	-34.6	0.07	0.22	-89.4	-111.7	-132.3	-150.9	8.5	-111.21
1.50	11.87	614.5	611.9	609.7	-0.61	-0.15	0.12	11.95	-23.8	-33.5	-34.5	0.08	0.23	-90.2	-112.1	-132.6	-150.6	10.0	-112.24
1.75	12.01	617.5	614.8	612.6	-0.60	-0.13	0.15	11.96	-23.9	-33.5	-34.4	0.09	0.25	-89.0	-112.2	-132.5	-151.5	20.8	-118.10
2.00	12.17	620.6	617.8	615.5	-0.59	-0.11	0.17	11.98	-23.9	-33.5	-34.0	0.10	0.25	-88.7	-111.3	-132.8	-150.6	35.5	-123.37
2.25	12.35	623.7	620.9	618.5	-0.58	-0.10	0.19	11.99	-23.9	-33.5	-33.8	0.11	0.26	-88.3	-112.1	-132.4	-151.8	60.7	-128.03
2.50	12.52	626.8	624.0	621.6	-0.58	-0.09	0.21	12.00	-23.8	-33.6	-33.6	0.11	0.27	-90.2	-112.0	-132.3	-150.5	86.7	-131.37
2.75	12.67	630.0	627.1	624.7	-0.58	-0.08	0.23	12.01	-23.9	-33.6	-33.3	0.11	0.29	-89.1	-112.0	-132.6	-149.9	100.0	-132.66
3.00	12.78	633.2	630.3	627.8	-0.58	-0.07	0.24	12.02	-24.1	-33.5	-33.1	0.11	0.30	-88.3	-111.4	-132.5	-150.5	148.1	-135.58
3.25	12.84	636.5	633.5	630.9	-0.58	-0.07	0.25	12.03	-24.3	-33.7	-33.0	0.11	0.32	-87.8	-112.4	-132.2	-150.4	177.0	-137.49
3.50	12.85	639.7	636.7	634.1	-0.58	-0.06	0.25	12.04	-24.4	-33.8	-32.9	0.11	0.35	-85.6	-112.6	-132.4	-150.5	211.6	-138.28
3.75	12.80	643.0	639.9	637.3	-0.59	-0.06	0.26	12.05	-24.3	-33.7	-32.6	0.10	0.38	-86.3	-112.0	-132.8	-150.8	302.4	-141.42
4.00	12.71	646.2	643.1	640.4	-0.59	-0.06	0.26	12.06	-24.2	-33.7	-32.7	0.10	0.41	-86.9	-111.7	-132.0	-150.8	361.5	-143.46
4.25	12.57	649.4	646.3	643.6	-0.60	-0.07	0.26	12.07	-24.0	-33.9	-32.5	0.10	0.43	-87.9	-110.8	-132.2	-150.6	507.5	-146.59
4.50	12.39	652.6	649.4	646.7	-0.62	-0.07	0.26	12.08	-24.1	-34.1	-32.3	0.10	0.45	-89.5	-111.6	-132.3	-152.4	606.7	-148.59
4.75	12.18	655.7	652.5	649.8	-0.64	-0.09	0.25	12.10	-24.1	-34.3	-32.1	0.10	0.46	-89.0	-111.2	-132.2	-151.6	851.6	-150.75
5.00	11.96	658.8	655.5	652.8	-0.67	-0.11	0.24	12.10	-24.2	-34.4	-32.0	0.10	0.46	-89.8	-110.8	-132.1	-151.9	1000.0	-151.39

\*at 25°C unless mentioned otherwise



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