

# Voltage Controlled Oscillator

ZX95-835+

5V Tuning for PLL IC's 800 to 835 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	ZX95-835-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

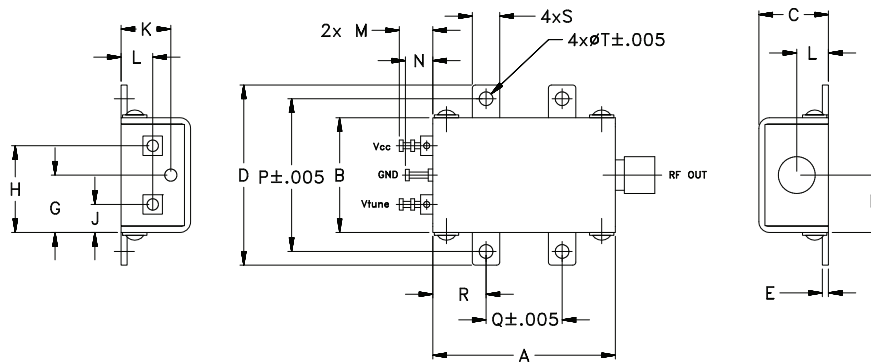
MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies, KHz				TUNING				NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER		
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)	SENSI- TIVITY (MHz/V)	PORT CAP (pF)		3 dB MODULATION BANDWIDTH (MHz)	Typ.			Max.	Typ.	Max.
ZX95-835+	800	835	-0.5	-89	-110	-130	-150	0.5	5	12-13	60	60	-90	-21	-13	1	0.5	5	15

## 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



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

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-774726  
ZX95-835+  
RAV  
120902  
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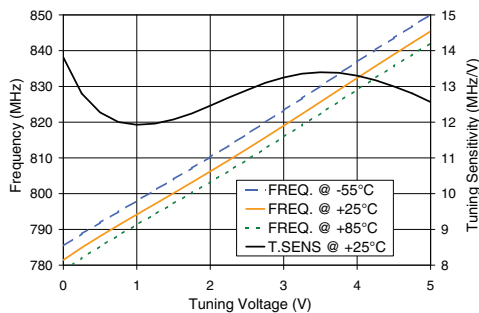
# Performance Data & Curves\*

# ZX95-835+

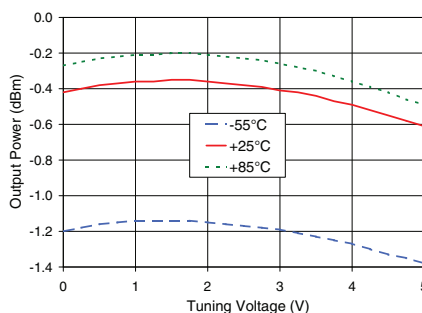
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 810 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	13.81	785.4	781.4	778.4	-1.20	-0.42	-0.27	9.54	-21.3	-41.5	-37.3	0.36	0.22	-86.3	-110.9	-130.6	-148.9	1.0	-87.38
0.50	12.27	791.9	788.1	785.3	-1.16	-0.38	-0.23	9.56	-21.3	-40.7	-37.8	0.42	0.28	-90.4	-110.7	-130.7	-150.2	2.0	-94.89
0.75	12.00	795.0	791.2	788.3	-1.15	-0.37	-0.22	9.57	-21.3	-40.3	-37.9	0.43	0.32	-88.7	-110.4	-130.2	-150.6	3.5	-101.37
1.00	11.93	798.0	794.2	791.3	-1.14	-0.36	-0.21	9.58	-21.3	-39.8	-37.6	0.44	0.35	-88.2	-109.8	-130.4	-149.3	6.0	-105.56
1.25	11.96	801.0	797.1	794.3	-1.14	-0.36	-0.21	9.58	-21.2	-39.4	-37.3	0.45	0.39	-90.2	-110.3	-130.7	-148.4	8.5	-107.51
1.50	12.08	804.0	800.1	797.3	-1.14	-0.35	-0.20	9.59	-21.2	-39.2	-37.1	0.47	0.43	-89.5	-110.7	-130.3	-150.2	10.0	-109.85
1.75	12.24	807.1	803.2	800.2	-1.14	-0.35	-0.20	9.60	-21.3	-39.0	-37.2	0.47	0.47	-90.8	-109.4	-130.3	-150.0	20.8	-116.09
2.00	12.46	810.2	806.2	803.3	-1.15	-0.36	-0.21	9.60	-21.4	-38.4	-37.5	0.48	0.51	-90.5	-110.3	-130.5	-149.0	35.5	-121.35
2.25	12.69	813.4	809.3	806.3	-1.16	-0.37	-0.22	9.61	-21.4	-38.3	-37.6	0.48	0.56	-88.3	-110.0	-130.0	-148.8	60.7	-126.07
2.50	12.90	816.7	812.5	809.5	-1.17	-0.38	-0.23	9.61	-21.3	-38.1	-37.4	0.48	0.60	-89.2	-110.0	-130.1	-150.1	86.7	-129.19
2.75	13.10	820.0	815.7	812.7	-1.18	-0.39	-0.24	9.62	-21.2	-37.8	-36.9	0.48	0.68	-87.7	-110.6	-129.8	-149.7	100.0	-130.36
3.00	13.25	823.3	819.0	815.9	-1.19	-0.41	-0.26	9.62	-21.1	-37.3	-36.6	0.48	0.75	-88.8	-110.6	-130.3	-148.7	148.1	-133.63
3.25	13.36	826.7	822.3	819.2	-1.21	-0.42	-0.28	9.63	-21.1	-36.9	-36.9	0.48	0.81	-88.0	-109.6	-130.5	-151.5	177.0	-135.40
3.50	13.40	830.1	825.7	822.5	-1.23	-0.44	-0.30	9.63	-21.1	-36.6	-37.3	0.47	0.88	-88.2	-110.6	-130.3	-149.3	211.6	-136.46
3.75	13.38	833.5	829.0	825.8	-1.25	-0.47	-0.33	9.64	-21.0	-36.3	-37.3	0.46	0.93	-87.0	-110.0	-130.0	-149.3	302.4	-139.81
4.00	13.30	836.9	832.3	829.1	-1.27	-0.49	-0.36	9.64	-21.0	-35.9	-37.1	0.45	0.97	-87.4	-109.9	-130.1	-148.8	361.5	-141.28
4.25	13.17	840.3	835.7	832.4	-1.30	-0.52	-0.39	9.64	-20.8	-35.5	-36.9	0.44	1.00	-86.5	-109.4	-129.8	-150.0	507.5	-144.38
4.50	13.00	843.6	839.0	835.7	-1.33	-0.55	-0.42	9.65	-20.7	-35.3	-36.7	0.43	1.02	-87.6	-109.5	-129.6	-148.8	600.0	-145.60
4.75	12.80	846.9	842.2	838.9	-1.35	-0.58	-0.46	9.65	-20.6	-35.2	-36.9	0.42	1.03	-87.7	-109.3	-129.8	-148.5	851.6	-148.65
5.00	12.56	850.1	845.4	842.1	-1.38	-0.61	-0.49	9.65	-20.7	-35.1	-37.2	0.42	1.02	-88.2	-108.8	-129.4	-148.7	1000.0	-149.43

\*at 25°C unless mentioned otherwise

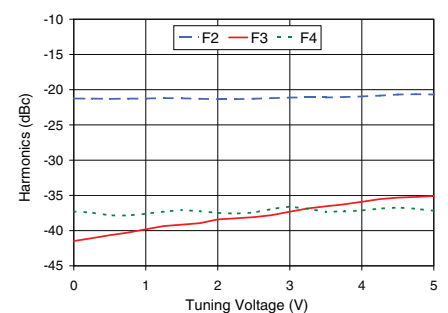
ZX95-835+  
Frequency and Tuning Sensitivity



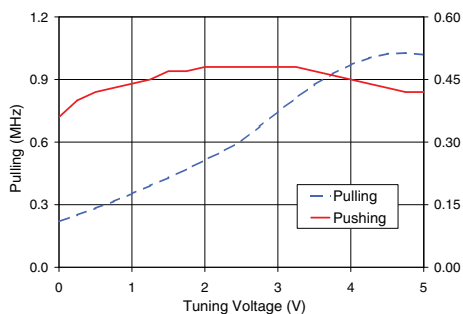
ZX95-835+  
Power Output



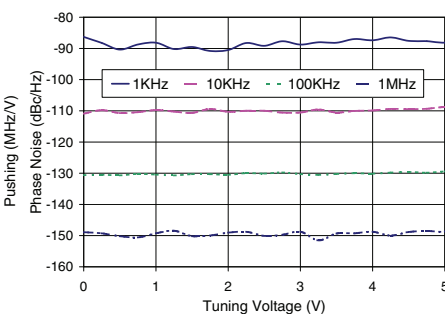
ZX95-835+  
Harmonics Level



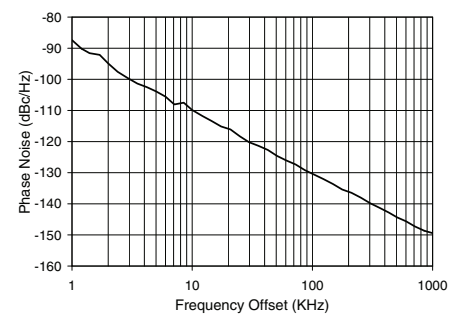
ZX95-835+  
Frequency Pulling & Pushing (Vcc ± 5%)



ZX95-835+  
Phase Noise Vs. Tuning Voltage



ZX95-835+  
Phase Noise



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