NON-CATALOG

Coaxial

Voltage Controlled Oscillator

ZX95-2390-S+

5V Tuning for PLL ICs 2320 to 2390 MHz

Generic photo used for illustration purposes only

CASE STYLE: GB956

Connectors	Model
SMA	ZX95-2390-S+

+RoHS Compliant

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

Features

- low phase noise, -106 dBc/Hz typ. @ 10kHz offset
- linear tuning characteristics
- low pulling, 1 MHz typ.
- low pushing, 0.2 MHz/V typ.
- protected by US patent 6,790,049

Applications

- r & d
- lab and instrumentation
- defense communications & radar
- satellite digital audio radio service

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 dBr (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
				Typ.				VOLTAGE RANGE (V)		SENSI-TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)						Vcc (volts)	Current (mA)
	Min.	Max.	Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Typ.		Max.
ZX95-2390-S+	2320	2390	+4.5	-81	-106	-127	-147	0.5	5	31 - 35	20	180	-90	-17	-	1	0.2	5	43

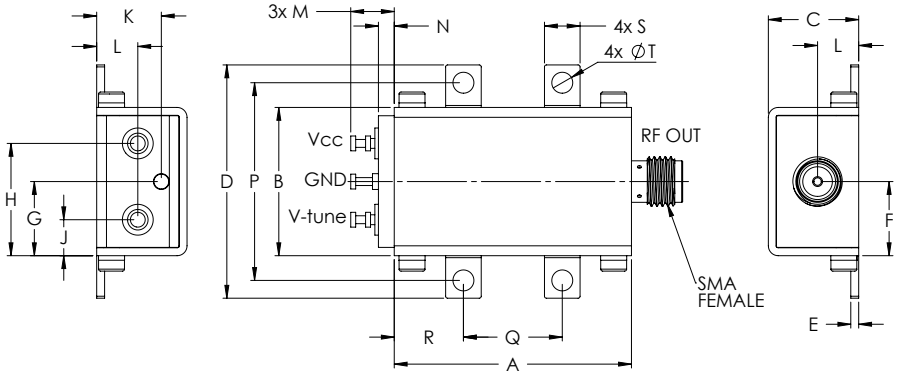
Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	6.2V
Absolute Max. Tuning Voltage (Vtune)	7.0V
All specifications	50 ohm system

Permanent damage may occur if any of these limits are exceeded.

NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note AN-40-10 .

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**	**.08**	**1.00**	**.50**	**.35**	**.18**	**.106**	grams
30.48	19.15	11.61	30.07	1.02	9.53	9.53	14.43	4.62	8.31	5.28	5.59	2.03	25.40	12.70	8.89	4.57	2.69	35.0

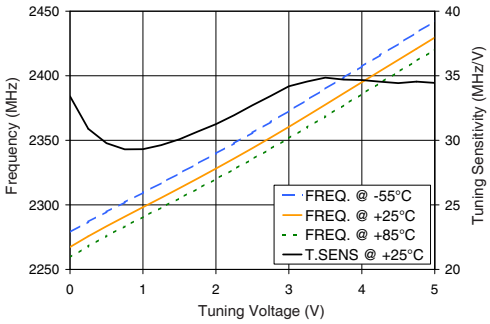
Performance Data & Curves*

ZX95-2390-S+

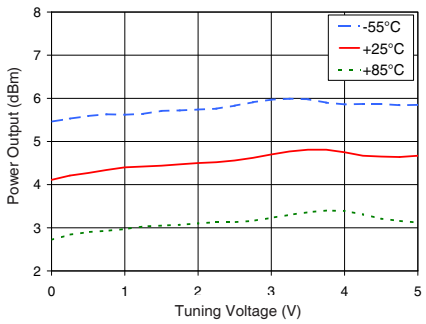
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (kHz)	PHASE NOISE at 2355 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	33.41	2278.9	2267.3	2259.4	5.46	4.11	2.72	35.53	-17.3	-39.2	-39.7	0.33	1.72	-80.4	-106.6	-126.8	-146.8	1.0	-80.89
0.50	29.78	2294.6	2283.4	2275.9	5.59	4.27	2.90	35.62	-17.6	-36.2	-37.0	0.39	1.71	-83.2	-106.4	-127.6	-147.8	2.0	-90.01
0.75	29.30	2302.0	2290.8	2283.4	5.63	4.34	2.93	35.66	-17.6	-35.9	-36.8	0.40	1.55	-82.7	-107.2	-127.5	-146.9	3.5	-95.13
1.00	29.31	2309.4	2298.2	2290.6	5.62	4.40	2.97	35.69	-17.7	-36.5	-37.2	0.40	1.26	-80.9	-107.3	-127.8	-148.3	6.0	-102.43
1.25	29.63	2316.9	2305.5	2297.8	5.64	4.42	3.03	35.72	-17.7	-36.1	-35.4	0.40	0.85	-82.0	-107.1	-127.7	-147.0	8.5	-105.11
1.50	30.08	2324.4	2312.9	2305.1	5.71	4.44	3.05	35.75	-17.8	-34.7	-33.5	0.40	0.30	-79.8	-106.6	-127.3	-147.9	10.0	-106.26
1.75	30.68	2332.0	2320.4	2312.4	5.72	4.47	3.07	35.79	-17.8	-33.0	-34.0	0.38	0.40	-81.0	-106.7	-127.3	-147.1	20.8	-113.92
2.00	31.25	2339.8	2328.1	2319.9	5.74	4.50	3.10	35.82	-17.2	-33.6	-33.2	0.37	0.99	-82.2	-106.8	-127.7	-147.3	35.5	-119.35
2.25	31.95	2347.7	2335.9	2327.6	5.76	4.52	3.13	35.86	-16.8	-34.9	-30.8	0.34	1.37	-81.0	-106.8	-127.5	-147.4	60.7	-123.33
2.50	32.72	2355.9	2343.9	2335.5	5.83	4.56	3.13	35.89	-16.8	-34.6	-30.5	0.30	1.49	-81.1	-106.8	-128.1	-147.3	86.7	-126.56
2.75	33.44	2364.2	2352.1	2343.5	5.91	4.62	3.16	35.91	-17.2	-32.9	-31.1	0.24	1.41	-80.7	-106.0	-127.2	-147.5	100.0	-127.43
3.00	34.18	2372.7	2360.4	2351.7	5.97	4.70	3.23	35.94	-17.1	-31.6	-29.9	0.18	1.20	-80.3	-106.9	-127.8	-147.3	148.1	-131.15
3.25	34.55	2381.3	2369.0	2360.0	5.99	4.77	3.30	35.96	-17.1	-32.3	-28.9	0.10	0.86	-81.0	-106.4	-127.5	-147.2	177.0	-132.62
3.50	34.85	2389.9	2377.6	2368.5	5.98	4.81	3.36	35.99	-16.9	-31.4	-31.2	0.01	0.45	-79.3	-105.9	-127.2	-146.8	211.6	-134.17
3.75	34.70	2398.6	2386.3	2377.1	5.90	4.81	3.40	36.03	-16.8	-30.0	-30.2	0.12	0.09	-79.8	-104.5	-126.6	-146.6	302.4	-136.13
4.00	34.67	2407.3	2395.0	2385.8	5.86	4.75	3.39	36.06	-16.7	-29.3	-29.6	0.25	0.59	-80.5	-105.3	-126.6	-146.6	361.5	-138.87
4.25	34.54	2416.0	2403.7	2394.5	5.87	4.67	3.31	36.08	-17.0	-30.2	-31.4	0.39	1.05	-79.5	-104.6	-126.1	-146.4	507.5	-140.71
4.50	34.43	2424.7	2412.3	2403.0	5.87	4.65	3.21	36.11	-16.7	-31.6	-31.3	0.52	1.34	-78.9	-104.6	-125.9	-146.0	606.7	-142.60
4.75	34.55	2433.4	2420.9	2411.6	5.84	4.64	3.16	36.11	-16.2	-29.6	-30.5	0.66	1.39	-78.8	-104.1	-125.5	-145.5	851.6	-146.62
5.00	34.45	2442.1	2429.5	2420.0	5.85	4.67	3.12	36.12	-16.3	-28.8	-31.4	0.78	1.23	-79.4	-103.6	-125.1	-145.2	1000.0	-147.37

*at 25°C unless mentioned otherwise

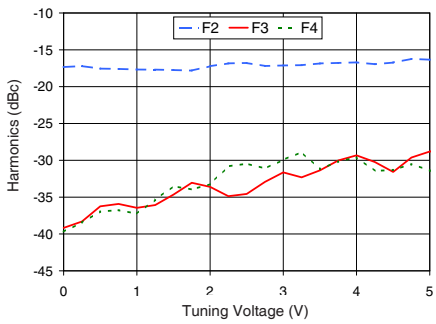
ZX95-2390-S+
Frequency and Tuning Sensitivity



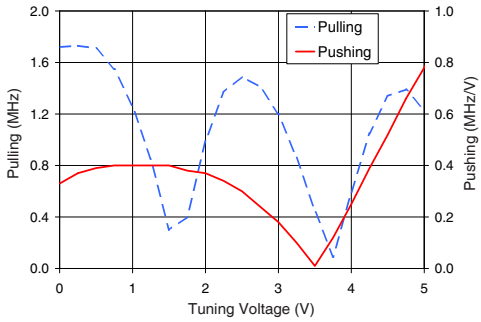
ZX95-2390-S+
Power Output



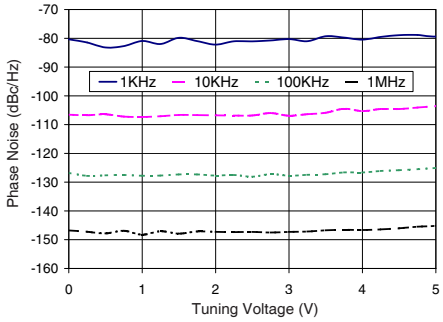
ZX95-2390-S+
Harmonics Level



ZX95-2390-S+
Frequency Pulling & Pushing (Vcc ± 5%)



ZX95-2390-S+
Phase Noise Vs. Tuning Voltage



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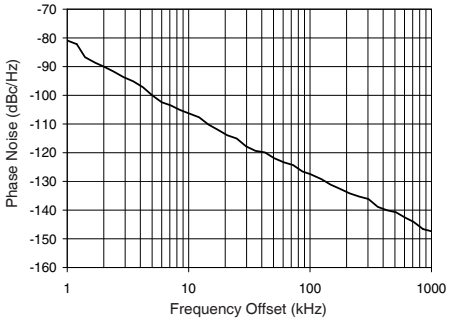
Phase Noise



Additional Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

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