

Voltage Controlled Oscillator **ZX95-2800R-S+**

50Ω 1400 to 2800 MHz

The Big Deal:

- Wide Band
- Low Phase Noise
- Robust design and construction
- Rigid unibody construction



Generic photo used for illustration purposes only

CASE STYLE: GB956

Product Overview:

The ZX95-2800R-S+ is a Voltage Controlled Oscillator, designed to operate from 1400 to 2800 MHz for instrumentation applications. The ZX95-2800R-S+ is built using Mini-Circuits proven unibody construction (size of 1.20" x .75" x .46") which integrates the RF connectors with the case body to shield against unwanted signals and noise.

Key Features

Feature	Advantages
Wide Band: from 1400 to 2800 MHz	The model's wide bandwidth makes it suitable for a wide variety of applications, such as: CATV, military, test equipment etc...
Low Phase Noise: -91 dBc/Hz typ at 10kHz offset	Low phase noise improves system EVM (Error Vector Magnitude).
Good Pulling, 6 MHz typ.	Improves immunity against changes in output load.
Good Pushing, 4 MHz/V typ.	Provides increased immunity against noisy DC lines and improves output frequency stability vs. variations in supply voltage.

Coaxial

Voltage Controlled Oscillator

ZX95-2800R-S+

Wide Band 1400 to 2800 MHz

Features

- low phase noise, -91 dBc/Hz typ. @ 10kHz offset
- low pulling, 6 MHz typ.
- low pushing, 4 MHz/V typ.
- Protected by US Patent 6,790,049

Applications

- r & d
- lab
- instrumentation
- test equipment



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CASE STYLE: GB956

Connectors Model

SMA ZX95-2800R-S+

+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.	Typ.				VOLTAGE RANGE (V)	SENSI- TIVITY (MHz/V)	PORT CAP (pF)		3 dB MODULATION BANDWIDTH (MHz)	Typ.			Typ.	Max.	Typ.	Max.	Vcc	Current (mA)
					1	10	100	1000														
ZX95-2800R-S+	1400	2800	+3.5	-63	-91	-113	-134	0.5	25	42-107	80	10	-90	-15	-	6	4	5	30			

Maximum Ratings

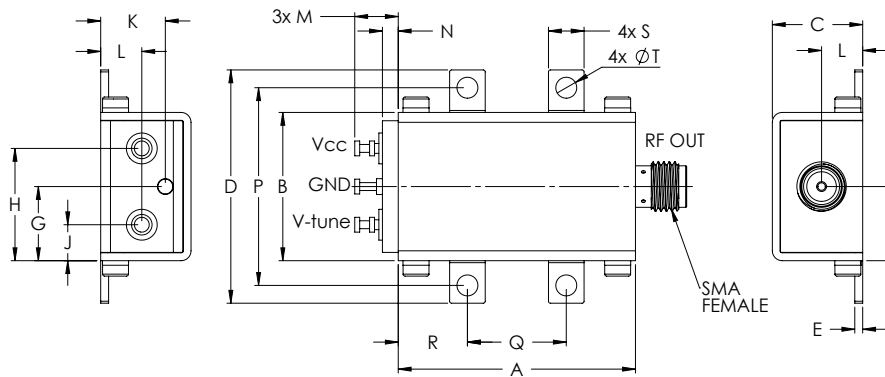
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	7V
Absolute Max. Tuning Voltage (Vtune)	27V
All specifications	50 ohm system

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

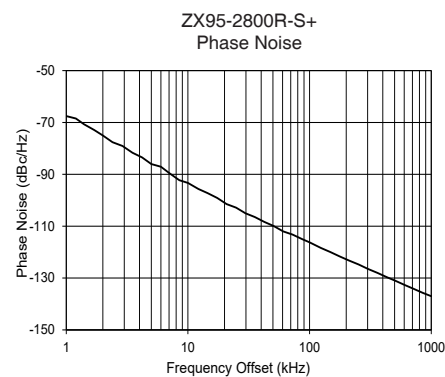
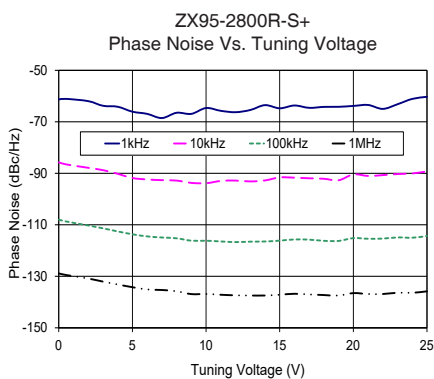
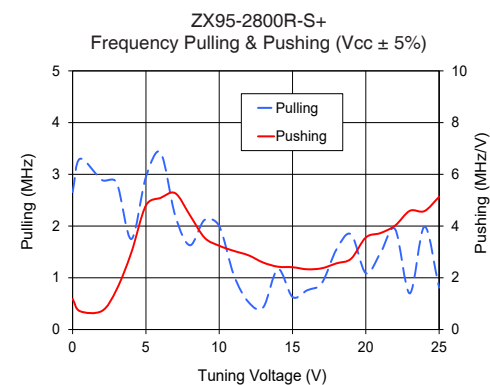
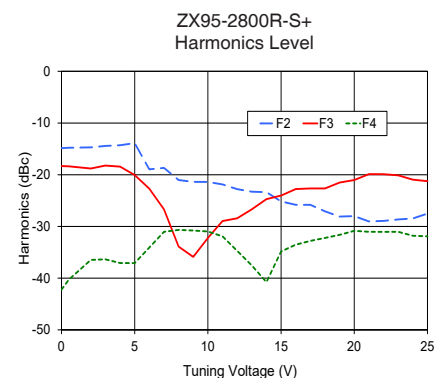
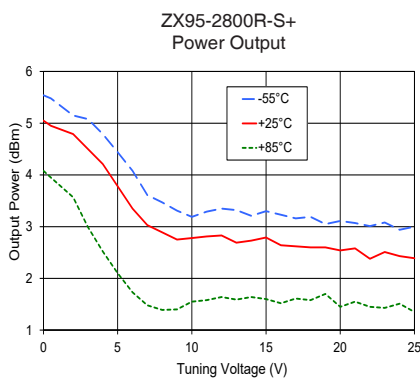
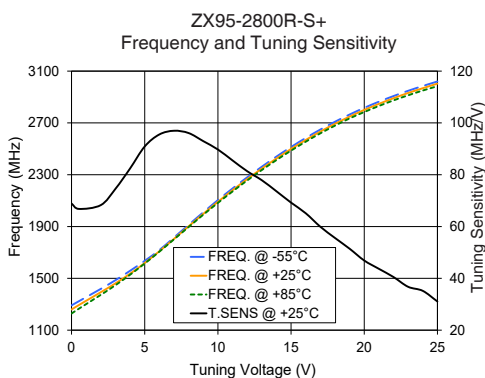


Outline Dimensions (inch/mm)

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	19.05	11.68	29.97	1.02	9.65	9.65	14.48	4.57	8.38	5.33	5.59	2.03	25.40	12.70	8.89	4.57	2.69	35.0

V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			I _{cc} (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (kHz)	PHASE NOISE at 2100 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	68.86	1291.5	1259.7	1228.4	5.54	5.05	4.08	24.06	-14.9	-18.3	-42.2	1.18	2.66	-61.31	-85.7	-108.0	-128.9	1.0	-67.54
0.50	66.80	1323.5	1294.1	1265.7	5.48	4.95	3.95	24.02	-14.8	-18.4	-40.3	0.71	3.30	-61.11	-86.5	-108.7	-129.5	2.0	-75.03
2.00	68.27	1418.8	1393.3	1372.7	5.15	4.79	3.57	23.94	-14.7	-18.8	-36.5	0.72	2.89	-61.98	-87.9	-110.3	-130.9	3.5	-81.67
3.00	74.55	1486.0	1461.6	1447.3	5.08	4.50	2.99	23.92	-14.4	-18.2	-36.4	1.55	2.84	-63.78	-88.8	-111.4	-132.1	6.0	-87.08
4.00	82.42	1558.6	1536.1	1528.1	4.79	4.21	2.52	23.88	-14.3	-18.4	-37.1	2.97	1.75	-64.16	-90.2	-112.6	-133.2	8.5	-92.27
6.00	95.53	1718.5	1709.4	1706.2	4.08	3.35	1.73	23.69	-19.0	-22.7	-34.1	5.09	3.42	-66.92	-92.4	-114.5	-135.1	10.0	-93.30
8.00	96.07	1913.1	1901.9	1896.6	3.47	2.89	1.39	23.57	-21.0	-33.9	-30.7	4.42	1.63	-66.49	-92.8	-115.3	-135.8	20.8	-101.47
9.00	92.95	2010.0	1998.0	1991.3	3.31	2.75	1.40	23.59	-21.4	-35.9	-30.8	3.55	2.12	-66.92	-93.7	-116.2	-136.9	35.5	-106.49
10.00	89.72	2104.0	2091.0	2082.6	3.19	2.78	1.55	23.61	-21.4	-32.2	-31.0	3.24	2.00	-64.65	-93.8	-116.2	-136.9	60.7	-112.01
11.00	85.50	2194.0	2180.7	2170.9	3.29	2.81	1.58	23.64	-21.9	-29.0	-31.9	3.04	1.05	-65.74	-93.0	-116.5	-137.2	86.7	-114.97
12.00	81.35	2279.9	2266.2	2255.8	3.35	2.83	1.64	23.67	-22.8	-28.4	-34.7	2.87	0.53	-66.27	-92.8	-116.7	-137.4	100.0	-116.24
13.00	77.87	2361.8	2347.5	2336.5	3.32	2.69	1.59	23.70	-23.3	-26.7	-37.5	2.59	0.43	-65.42	-93.2	-116.6	-137.5	148.1	-119.96
14.00	73.60	2440.3	2425.4	2413.5	3.21	2.73	1.64	23.73	-23.4	-24.7	-40.8	2.43	1.17	-63.53	-92.8	-116.5	-137.5	177.0	-121.66
16.00	65.13	2583.8	2568.2	2555.3	3.23	2.64	1.52	23.75	-25.8	-22.8	-33.5	2.33	0.76	-63.67	-91.7	-115.7	-136.8	211.6	-123.27
18.00	55.58	2709.2	2693.3	2679.2	3.19	2.60	1.58	23.77	-27.1	-22.7	-32.2	2.56	1.55	-64.21	-92.1	-116.2	-137.3	302.4	-126.51
19.00	51.43	2765.0	2748.8	2735.1	3.05	2.60	1.70	23.79	-28.1	-21.5	-31.6	2.74	1.84	-64.18	-92.7	-116.3	-137.5	361.5	-128.01
20.00	46.88	2816.5	2800.3	2784.4	3.11	2.54	1.45	23.78	-28.0	-21.0	-30.8	3.56	1.09	-63.84	-90.4	-115.2	-136.5	507.5	-131.07
21.00	43.67	2864.0	2847.1	2831.1	3.07	2.58	1.55	23.76	-29.0	-19.9	-31.0	3.73	1.48	-63.47	-91.0	-115.4	-136.9	606.7	-132.71
23.00	36.73	2948.2	2931.3	2913.7	3.08	2.51	1.43	23.75	-28.7	-20.1	-31.0	4.59	0.70	-63.18	-90.3	-114.9	-136.4	851.6	-135.72
25.00	31.06	3020.1	3003.2	2983.7	3.00	2.39	1.35	23.75	-27.5	-21.2	-31.9	5.13	0.81	-60.30	-89.3	-114.4	-135.8	1000.0	-137.02

*at 25°C unless mentioned otherwise



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.
- C. The parts covered by this specification document 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

