

Voltage Controlled Oscillator

ZX95-3800AR-S+

50Ω 1900 to 3700 MHz

The Big Deal:

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



CASE STYLE: GB956

Product Overview:

The ZX95-3800AR-S+ is a Voltage Controlled Oscillator, designed to operate from 1900 to 3700 MHz for point-to-point system applications. The ZX95-3800AR-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 1900 to 3700 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: -88 dBc/Hz typ at 10 kHz offset	Low phase noise improves system EVM (Error Vector Magnitude).
High Power Output, +6 dBm typ.	Reduces amplification requirements and improves immunity to external noise sources.
Good Pulling, 2 MHz typ.	Improves immunity against changes in output load.

Coaxial

Voltage Controlled Oscillator

ZX95-3800AR-S+

Wide Band 1900 to 3700 MHz

Features

- low phase noise, -88 dBc/Hz typ. @ 10kHz offset
- high power output, +6 dBm typ.
- low pulling, 2 MHz typ.
- wide band
- protected by US patent 6,790,049

Applications

- wireless communications
- point-to-point systems
- r & d
- instrumentation



CASE STYLE: GB956

Connectors	Model
SMA	ZX95-3800AR-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.	1	10	100	1000	VOLTAGE RANGE (V)		SENSI- TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	Typ.	Typ.	Typ.			Max.	Typ.	Max.	Vcc	Current (mA)
									Min.	Max.													
ZX95-3800AR-S+	1900	3700	+6	-61	-88	-110	-130	0.5	20	60 - 150	50	10	-90	-22	-10	2	6	6	55				

Maximum Ratings

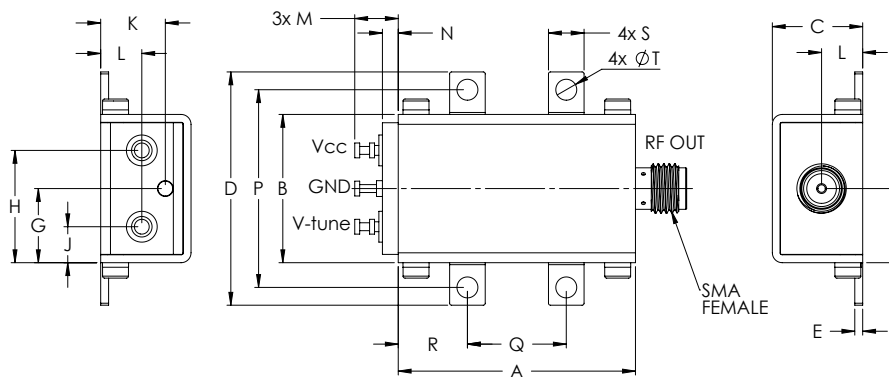
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	7V
Absolute Max. Tuning Voltage (Vtune)	21V
All specifications	50 ohm system

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)

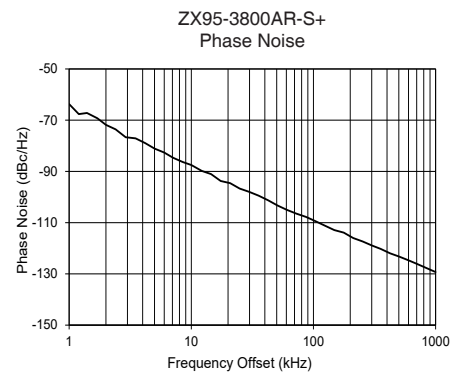
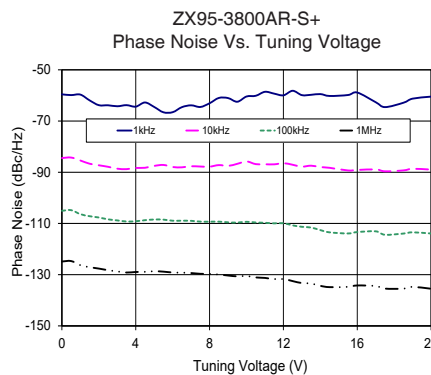
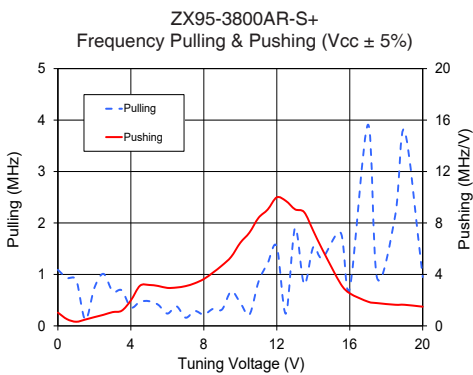
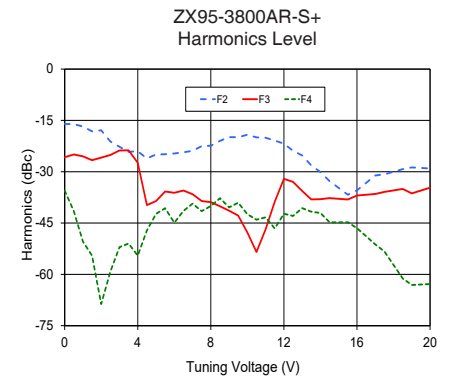
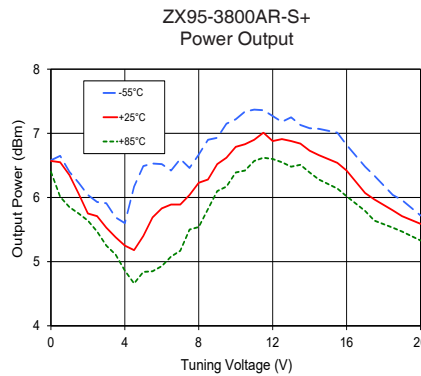
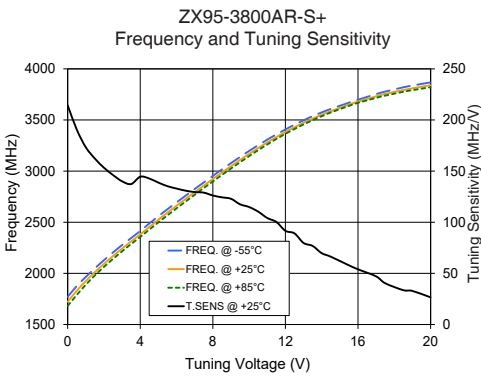
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
1.20	.75	.46	1.18	.04	.38	.38	.57	.18	.33	.21	.22	.08	1.00	.50	.35	.18	.106	grams
30.48	19.15	11.61	30.07	1.02	9.53	9.53	14.43	4.62	8.31	5.28	5.59	2.03	25.40	12.70	8.89	4.57	2.69	35.0

Performance Data & Curves*

ZX95-3800AR-S+

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 2800 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	214.35	1770.9	1722.4	1681.7	6.58	6.57	6.40	44.58	-16.1	-25.8	-35.5	1.03	1.09	-59.59	-84.5	-105.1	-124.9	1.0	-63.74
1.00	173.25	1964.8	1924.9	1889.5	6.40	6.35	5.85	44.93	-16.8	-25.5	-50.4	0.32	0.90	-59.69	-85.4	-106.4	-126.3	2.0	-71.82
2.00	153.28	2128.6	2092.6	2063.7	6.04	5.75	5.64	45.25	-17.9	-25.9	-68.7	0.68	0.74	-63.81	-87.3	-107.7	-127.6	3.5	-77.09
3.00	139.98	2276.7	2242.3	2216.1	5.91	5.53	5.25	45.47	-22.7	-23.8	-52.1	1.07	0.67	-64.23	-88.6	-108.8	-128.7	6.0	-82.63
4.00	144.47	2414.1	2381.0	2356.6	5.60	5.25	4.86	45.46	-24.0	-27.4	-54.5	1.98	0.36	-64.38	-88.3	-109.1	-129.0	8.5	-86.31
5.00	138.71	2558.4	2524.6	2499.0	6.49	5.40	4.84	45.55	-25.0	-38.6	-42.3	3.18	0.48	-64.51	-87.5	-108.5	-128.7	10.0	-87.49
6.00	132.90	2693.5	2661.5	2636.1	6.52	5.83	4.93	45.70	-24.7	-36.2	-44.9	2.95	0.24	-66.54	-88.0	-108.9	-129.2	20.8	-94.58
7.00	129.47	2824.7	2793.4	2768.9	6.60	5.89	5.17	45.77	-23.9	-36.6	-39.3	3.09	0.16	-63.87	-87.7	-109.0	-129.4	35.5	-99.44
8.00	126.13	2952.6	2922.6	2898.9	6.67	6.23	5.54	46.04	-22.4	-38.9	-40.0	3.64	0.22	-63.06	-87.8	-109.3	-129.7	60.7	-105.00
9.00	122.90	3077.6	3047.8	3025.5	6.93	6.52	6.10	46.50	-19.9	-41.4	-40.4	4.70	0.32	-61.04	-87.5	-109.6	-130.3	86.7	-107.74
10.00	114.85	3196.8	3168.0	3146.7	7.22	6.79	6.39	46.93	-19.2	-47.8	-42.4	6.46	0.45	-60.43	-85.8	-109.4	-130.5	100.0	-109.05
11.00	104.10	3307.1	3280.6	3260.9	7.37	6.90	6.57	47.25	-20.1	-46.8	-43.3	8.40	0.86	-58.60	-86.9	-109.7	-131.3	148.1	-112.88
12.00	91.57	3406.8	3382.8	3364.6	7.27	6.88	6.60	47.20	-21.8	-32.1	-42.3	9.99	1.54	-59.97	-86.5	-109.9	-131.7	177.0	-113.88
13.00	79.70	3496.0	3473.1	3456.8	7.25	6.88	6.48	46.90	-25.3	-35.6	-40.7	9.06	1.90	-59.90	-87.8	-111.3	-133.3	211.6	-115.99
14.00	69.71	3573.7	3551.4	3537.3	7.08	6.73	6.39	46.58	-30.1	-38.0	-42.1	7.39	1.53	-59.49	-88.0	-112.6	-134.4	302.4	-118.97
15.50	57.83	3668.7	3650.6	3638.4	7.01	6.54	6.14	46.35	-36.7	-38.1	-44.8	3.27	1.81	-59.85	-89.3	-113.9	-134.7	355.1	-120.24
17.00	47.01	3752.9	3731.6	3716.7	6.48	6.07	5.79	46.14	-31.1	-36.5	-51.2	1.88	3.91	-62.66	-88.9	-113.1	-134.4	498.5	-123.17
17.50	40.29	3777.1	3755.1	3738.5	6.34	5.97	5.64	46.07	-30.8	-35.9	-53.3	1.77	0.93	-64.56	-89.7	-114.4	-135.4	595.9	-124.64
19.00	32.78	3836.4	3809.8	3792.1	5.96	5.71	5.47	45.81	-28.7	-36.3	-63.1	1.64	3.80	-61.26	-88.7	-113.5	-134.8	982.3	-129.13
20.00	26.49	3867.4	3840.1	3820.8	5.72	5.59	5.33	45.66	-29.1	-34.7	-62.9	1.49	0.95	-60.48	-89.0	-113.9	-135.5	1000.0	-129.28

*at 25°C unless mentioned otherwise



Additional Notes

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

