Voltage Controlled Oscillator ZX95-1200WR-S+

50Ω 612 to 1200 MHz

The Big Deal:

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

Generic photo used for illustration purposes only

CASE STYLE: GB956

Product Overview:

The ZX95-1200WR-S+ is a Voltage Controlled Oscillator, designed to operate from 612 to 1200 MHz for cellular applications. The ZX95-1200WR-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 612 to 1200 MHz	The model's wide bandwidth makes it suitable for a wide variety of applications, such as: CATV, military, test equipment etc...
Linear Tuning Sensitivity Ratio: 1.47:1 typ.	Optimal for loop filter design.
Low Phase Noise: -97 dBc/Hz typ at 10 kHz offset	Low phase noise improves system EVM (Error Vector Magnitude).
High Power Output, +9 dBm typ.	Reduces amplification requirements and improves immunity to external noise sources.
Good Pushing, 0.45 MHz/V typ.	Provides increased immunity against noisy DC lines and improves output frequency stability vs. variations in supply voltage.

Coaxial

Voltage Controlled Oscillator

ZX95-1200WR-S+

Wide Band 612 to 1200 MHz

Features

- low phase noise, -97 dBc/Hz typ. @ 10kHz offset
- high power output, +9 dBm typ.
- low pushing, 0.45 MHz/V typ.
- protected by US patent 6,790,049

Applications

- r&d
- wireless communications
- cellular
- test equipment

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CASE STYLE: GB956

Connectors	Model
SMA	ZX95-1200WR-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 Typ.				TUNING VOLTAGE RANGE (V)		SENSI-TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dBr (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
	Min.	Max.	Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Typ.	Vcc (volts)	Current (mA) Max.
ZX95-1200WR-S+	612	1200	+9	-71	-97	-119	-139	0.5	18	42 - 62	85	20	-90	-20	-10	9	0.45	12	35

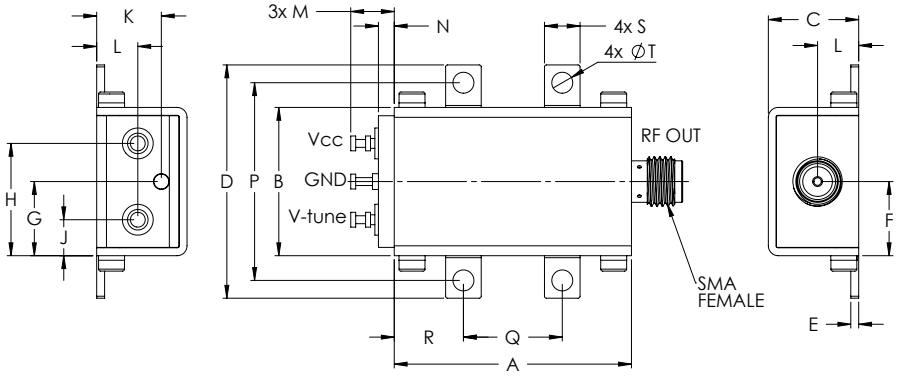
Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	15V
Absolute Max. Tuning Voltage (Vtune)	25V
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

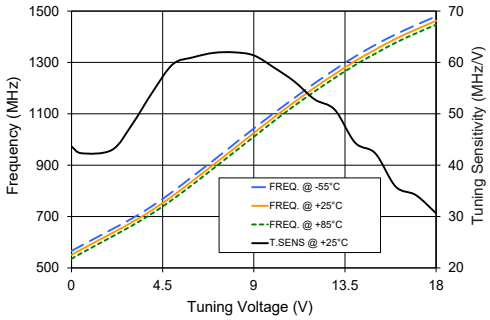
Performance Data & Curves*

ZX95-1200WR-S+

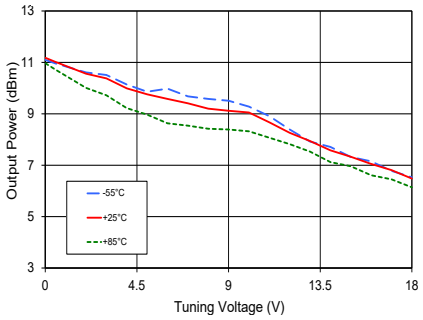
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (kHz)	PHASE NOISE at 906 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	43.64	566.0	550.8	535.3	11.10	11.18	10.97	27.10	-32.1	-22.3	-37.1	0.29	10.53	-73.01	-95.7	-116.0	-136.2	1.0	-74.11
2.00	42.97	650.6	635.4	621.6	10.61	10.56	10.01	27.12	-47.0	-23.2	-50.0	0.55	11.78	-73.51	-96.0	-117.1	-137.4	2.0	-83.37
3.00	47.98	693.0	678.4	665.1	10.51	10.38	9.72	27.13	-32.2	-24.1	-50.8	0.59	8.64	-72.86	-97.4	-118.0	-138.3	3.5	-88.37
4.00	54.23	741.8	726.4	712.8	10.14	9.99	9.22	27.16	-31.8	-25.8	-46.6	0.64	8.96	-73.62	-97.6	-118.3	-138.6	6.0	-93.92
5.00	59.65	797.2	780.6	766.8	9.86	9.76	8.97	27.19	-27.5	-29.4	-44.4	0.67	11.33	-73.19	-98.8	-119.0	-139.4	8.5	-98.27
6.00	61.00	857.6	840.2	825.7	9.98	9.58	8.63	27.24	-24.9	-35.5	-42.3	0.72	1.73	-74.22	-98.8	-119.5	-139.9	10.0	-99.77
7.00	61.86	918.4	901.2	886.8	9.68	9.41	8.54	27.31	-21.9	-40.8	-41.6	0.73	8.93	-71.53	-99.1	-120.1	-140.8	20.8	-106.19
8.00	61.98	980.5	963.1	948.7	9.58	9.20	8.42	27.37	-21.0	-38.0	-42.3	0.75	2.50	-71.42	-99.1	-119.8	-141.0	35.5	-110.76
9.00	61.37	1042.9	1025.1	1010.5	9.51	9.12	8.39	27.45	-18.1	-35.8	-41.7	0.76	8.21	-73.63	-99.1	-119.9	-141.4	60.7	-115.78
10.00	59.00	1103.1	1086.4	1072.0	9.28	9.05	8.32	27.58	-18.0	-33.4	-41.1	0.73	3.24	-72.37	-98.3	-119.9	-142.0	86.7	-118.94
11.00	56.30	1161.5	1145.4	1131.2	8.91	8.67	8.07	27.70	-17.1	-32.1	-44.4	0.72	6.60	-71.22	-98.0	-119.7	-142.0	100.0	-120.13
12.00	52.81	1218.9	1201.7	1187.0	8.39	8.26	7.82	27.80	-18.9	-31.5	-43.1	0.73	7.24	-72.65	-97.8	-119.0	-141.4	148.1	-123.51
13.00	50.78	1272.5	1254.6	1240.1	7.92	7.94	7.53	27.91	-20.8	-30.3	-42.1	0.65	6.81	-71.64	-97.7	-118.4	-141.2	177.0	-125.25
14.00	44.38	1323.2	1305.3	1290.0	7.71	7.58	7.12	28.03	-23.5	-30.0	-40.2	0.63	10.86	-70.83	-96.9	-118.2	-140.8	211.6	-126.79
15.00	42.29	1368.7	1349.7	1334.6	7.32	7.33	6.96	28.08	-26.1	-29.6	-39.1	0.61	7.97	-72.02	-97.0	-117.9	-140.6	302.4	-130.20
16.00	35.83	1409.4	1392.0	1377.0	7.15	7.05	6.61	28.17	-29.0	-28.9	-38.7	0.56	5.10	-73.22	-97.0	-117.9	-140.8	355.1	-131.70
17.00	34.17	1445.6	1427.8	1413.3	6.78	6.81	6.45	28.16	-28.8	-29.0	-37.7	0.52	8.03	-71.72	-96.5	-117.9	-140.7	498.5	-134.73
18.00	30.63	1479.5	1462.0	1447.2	6.53	6.48	6.14	28.14	-30.2	-29.0	-39.2	0.49	9.95	-70.83	-96.5	-117.7	-140.5	595.9	-136.37
19.00	29.36	1508.2	1492.6	1478.5	6.36	6.32	5.94	28.13	-30.3	-30.2	-41.3	0.28	7.98	-69.76	-96.2	-117.1	-139.9	982.3	-140.72
20.00	29.36	1538.9	1522.0	1506.8	6.10	6.15	5.79	28.08	-28.8	-32.8	-46.3	0.04	6.05	-68.78	-94.8	-115.7	-138.5	1000.0	-140.77

*at 25°C unless mentioned otherwise

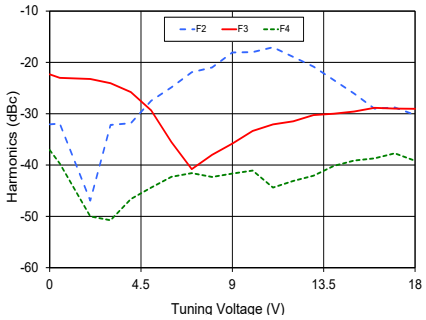
ZX95-1200WR-S+
Frequency and Tuning Sensitivity



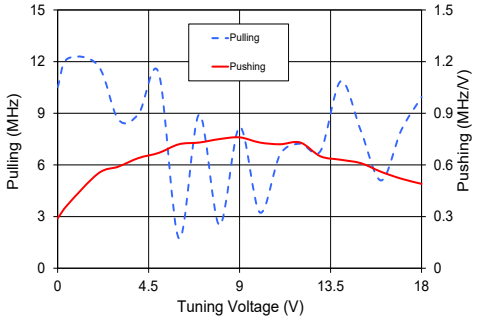
ZX95-1200WR-S+
Power Output



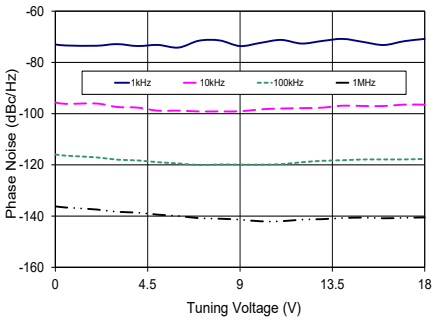
ZX95-1200WR-S+
Harmonics Level



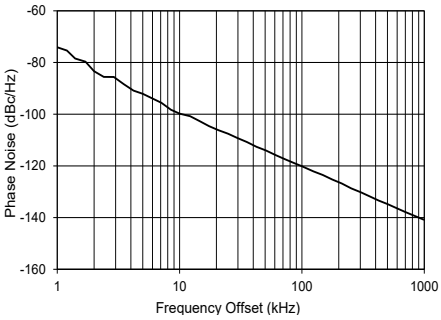
ZX95-1200WR-S+
Frequency Pulling & Pushing (Vcc ± 5%)



ZX95-1200WR-S+
Phase Noise Vs. Tuning Voltage



ZX95-1200WR-S+
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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