Voltage Controlled Oscillator ZX95-6030CR-S+

50Ω 5890 to 6010 MHz

The Big Deal:

- Low Phase Noise
- Linear Tuning
- Good Pulling & Pushing
- Robust design and construction
- Rigid unibody construction

Generic photo used for illustration purposes only

CASE STYLE: GB956

Product Overview:

The ZX95-6030CR-S+ is a Voltage Controlled Oscillator, designed to operate from 5890 to 6010 MHz for instrumentation applications. The ZX95-6030CR-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
Linear Tuning Sensitivity Ratio: 1.15:1 typ.	Optimal for loop filter design.
Low Phase Noise: -102 dBc/Hz typ at 10 kHz offset	Low phase noise improves system EVM (Error Vector Magnitude).
Good Pulling, 2 MHz typ.	Improves immunity against changes in output load.
Good Pushing, 1.4 MHz/V typ.	Provides increased immunity against noisy DC lines and improves output frequency stability vs. variations in supply voltage.

NON-CATALOG

2x Fundamental

Voltage Controlled Oscillator

ZX95-6030CR-S+

Frequency Doubling 5890 to 6010 MHz

Generic photo used for illustration purposes only

CASE STYLE: GB956

Connectors	Model
SMA	ZX95-6030CR-S+

Features

- frequency based on multiplication of carrier frequency
- low phase noise, -102 dBc/Hz typ. @ 10kHz offset
- linear tuning characteristics
- low pulling, 2 MHz typ.
- low pushing, 1.4 MHz/V typ.
- protected by US patent 6,790,049

Applications

- r & d
- lab
- instrumentation
- point-to-point radio

+RoHS Compliant

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

Electrical Specifications

MODEL NO.	FREQ. (MHz) F2x (1/2F)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies,kHz				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc) Max.			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.	F0.5	F1.5	F2	Typ.	Typ.		Max.
ZX95-6030CR-S+	5890	6010	+3.5	-73	-102	-124	-144	0.5	5	63 - 73	12	140	-90	-27	-25	-22	2	1.4	5	28

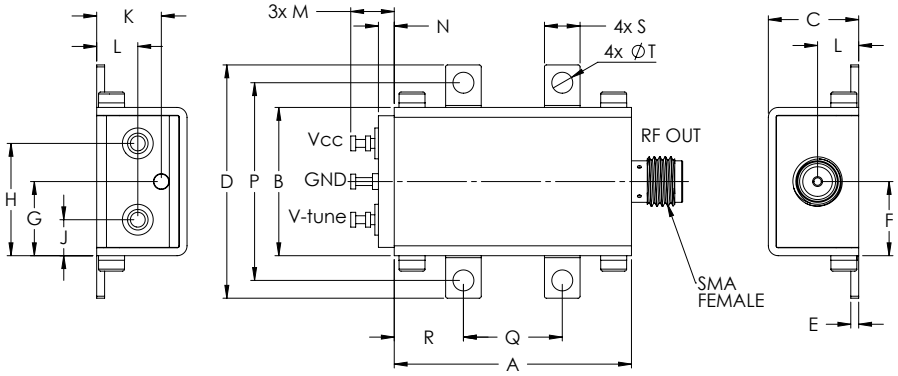
Maximum Ratings

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.

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

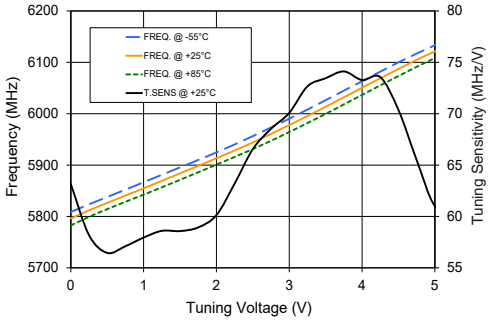
Performance Data & Curves*

ZX95-6030CR-S+

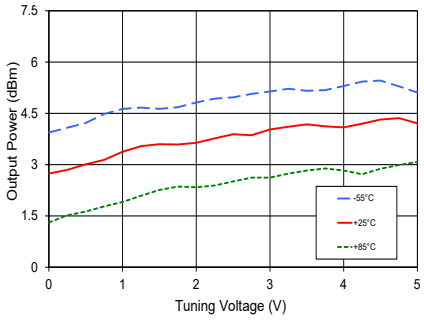
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (kHz)	PHASE NOISE at 5950 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F0.5	F1.5	F2			1kHz	10kHz	100kHz	1MHz		
0.00	63.16	5808.7	5796.1	5782.6	3.94	2.74	1.31	17.95	-41.3	-45.3	-30.4	0.20	1.29	-72.28	-102.2	-125.2	-146.6	1.0	-74.17
0.50	56.46	5837.9	5826.4	5814.3	4.22	3.01	1.63	18.10	-40.9	-44.5	-30.6	0.35	1.88	-75.96	-104.4	-126.7	-147.3	2.5	-84.23
0.75	57.11	5852.2	5840.5	5828.6	4.48	3.14	1.78	18.15	-40.9	-47.3	-29.4	0.38	2.06	-75.11	-104.4	-126.5	-146.3	3.6	-89.58
1.00	57.95	5866.7	5854.8	5842.6	4.63	3.38	1.91	18.18	-41.0	-50.1	-30.2	0.41	1.68	-73.45	-103.5	-126.9	-146.3	6.0	-95.84
1.25	58.60	5881.1	5869.3	5856.8	4.67	3.54	2.09	18.22	-41.2	-48.4	-30.2	0.44	0.73	-74.52	-103.2	-126.7	-145.8	8.4	-99.49
1.50	58.58	5895.6	5883.9	5871.3	4.63	3.60	2.26	18.26	-41.2	-47.0	-30.2	0.44	1.34	-73.24	-102.8	-125.7	-146.7	10.0	-102.45
1.75	58.93	5910.0	5898.6	5886.1	4.68	3.59	2.36	18.32	-41.2	-49.6	-29.3	0.43	1.99	-74.01	-103.1	-127.6	-148.2	23.1	-111.98
2.00	60.13	5924.7	5913.3	5900.9	4.82	3.64	2.34	18.37	-41.2	-51.8	-29.1	0.41	1.89	-73.84	-103.0	-127.9	-147.0	38.8	-117.33
2.25	63.20	5940.2	5928.3	5915.9	4.93	3.77	2.39	18.41	-41.1	-51.5	-29.2	0.40	1.55	-74.17	-102.9	-125.9	-146.7	64.0	-122.73
2.50	66.55	5956.4	5944.1	5931.3	4.97	3.89	2.51	18.43	-41.0	-48.9	-29.2	0.41	1.09	-72.10	-102.5	-127.1	-146.2	89.8	-125.15
2.75	68.53	5973.2	5960.8	5947.4	5.07	3.86	2.62	18.45	-40.9	-49.7	-29.1	0.40	1.54	-72.85	-102.1	-126.1	-146.7	100.0	-127.47
3.00	70.08	5990.4	5977.9	5964.4	5.14	4.03	2.62	18.49	-40.8	-53.7	-30.1	0.33	1.91	-72.54	-101.9	-125.9	-146.7	150.8	-128.23
3.25	72.66	6008.2	5995.4	5981.9	5.22	4.11	2.74	18.51	-41.0	-48.8	-27.8	0.21	1.97	-74.02	-102.0	-125.7	-147.1	177.0	-131.77
3.50	73.45	6026.4	6013.6	5999.8	5.16	4.18	2.83	18.53	-40.9	-50.1	-29.1	0.03	0.95	-73.86	-101.6	-125.8	-145.8	211.6	-131.26
3.75	74.11	6044.9	6032.0	6018.2	5.18	4.12	2.89	18.56	-40.8	-52.9	-29.1	0.43	1.27	-72.53	-101.3	-125.8	-147.3	297.1	-131.63
4.00	73.28	6063.2	6050.5	6036.7	5.30	4.09	2.83	18.57	-40.7	-48.6	-27.8	0.98	1.91	-71.99	-100.3	-124.9	-145.9	348.8	-134.47
4.25	73.57	6081.9	6068.8	6055.2	5.43	4.20	2.72	18.57	-40.7	-52.3	-26.5	1.66	1.85	-72.77	-100.4	-124.9	-144.7	489.7	-140.60
4.50	70.36	6100.0	6087.2	6073.4	5.46	4.32	2.88	18.57	-40.5	-50.8	-27.6	2.38	0.69	-71.30	-100.3	-123.5	-144.0	585.4	-141.36
4.75	65.49	6117.1	6104.8	6091.3	5.29	4.36	2.99	18.58	-40.4	-51.9	-26.4	2.98	1.57	-70.98	-99.2	-122.8	-143.8	964.9	-146.49
5.00	61.03	6133.2	6121.2	6108.2	5.11	4.21	3.08	18.58	-40.1	-51.4	-26.3	3.38	1.97	-70.49	-98.9	-122.5	-143.4	1000.0	-146.24

*at 25°C unless mentioned otherwise

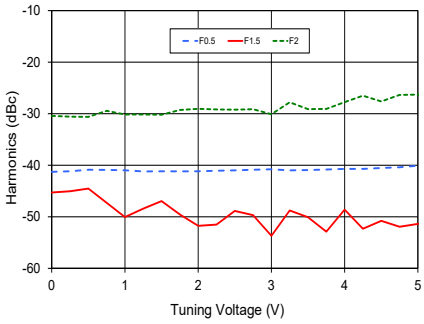
ZX95-6030CR-S+
Frequency and Tuning Sensitivity



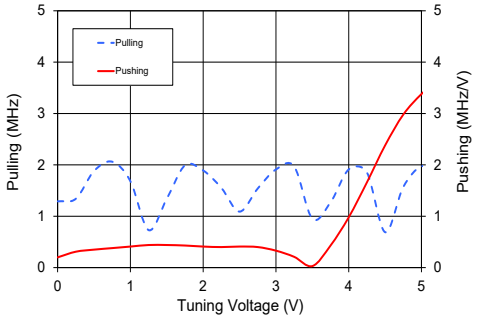
ZX95-6030CR-S+
Power Output



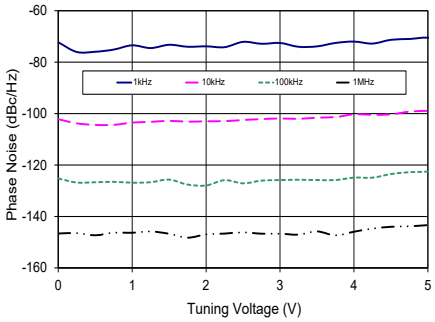
ZX95-6030CR-S+
Harmonics Level



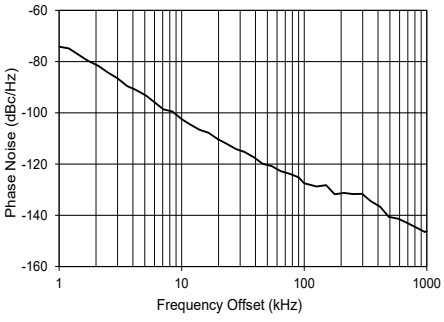
ZX95-6030CR-S+
Frequency Pulling & Pushing (Vcc ± 5%)



ZX95-6030CR-S+
Phase Noise Vs. Tuning Voltage



ZX95-6030CR-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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