

Coaxial

Voltage Controlled Oscillator

ZX95-3146+

5V Tuning for PLL IC's 3000 to 3110 MHz

Features

- high power output, +9 dBm typ.
- low phase noise
- low pushing
- protected by US patent 6,790,049

Applications

- r & d
- lab
- instrumentation
- wireless communications



CASE STYLE: GB956

Connectors	Model
SMA	ZX95-3146-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				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
				dBc/Hz SSB at offset frequencies,kHz				VOLTAGE RANGE (V)	SENSI- TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	Vcc (volts)						Current (mA)	
	Typ.				Min.	Max.	Typ.							Typ.	Typ.				Max.
ZX95-3146+	3000	3110	+9	-73	-102	-123	-144	0.5	5	56-64	13	200	-90	-25	-15	4.5	2.5	5	43

Maximum Ratings

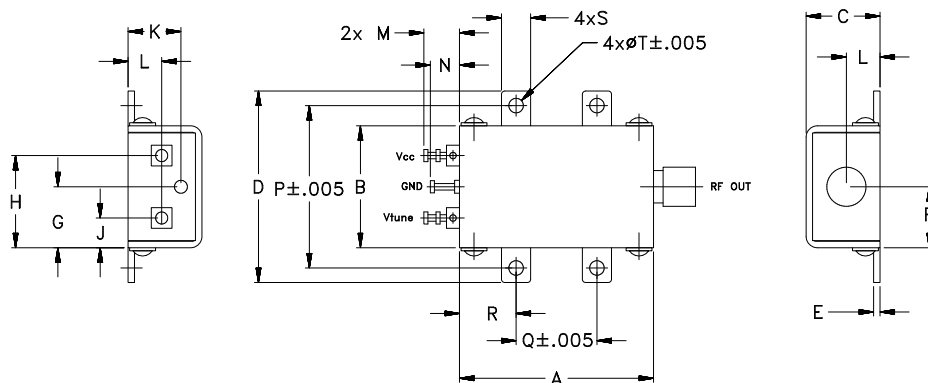
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	7V
Absolute Max. Tuning Voltage (Vtune)	7V
All specifications	50 ohm system

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	.18	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	4.57	25.40	12.70	8.89	4.57	2.69	35.0

Notes

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 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



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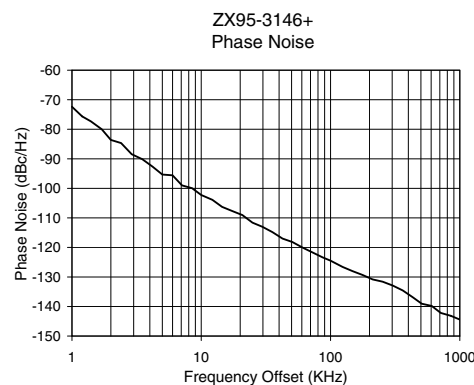
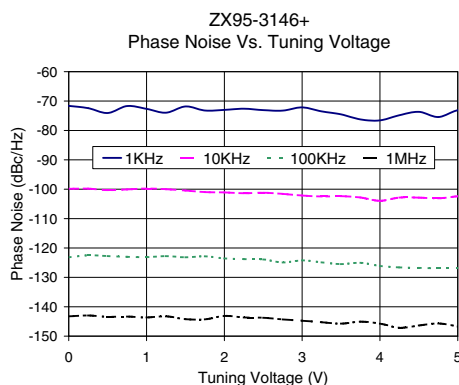
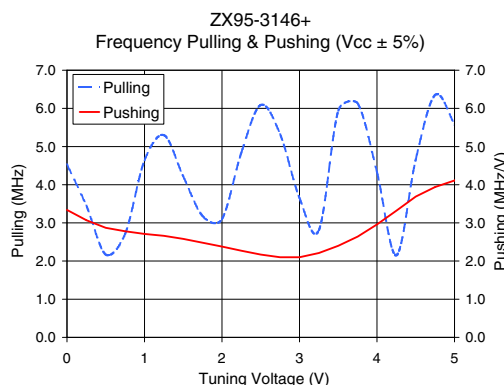
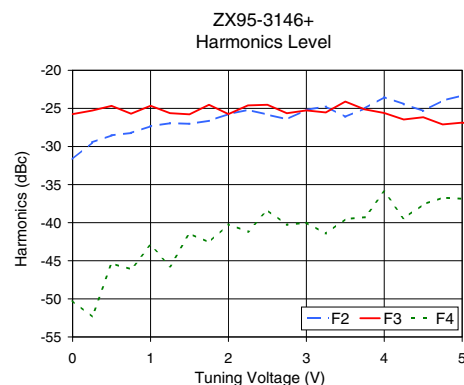
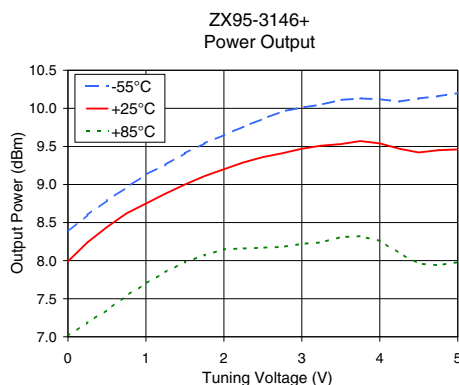
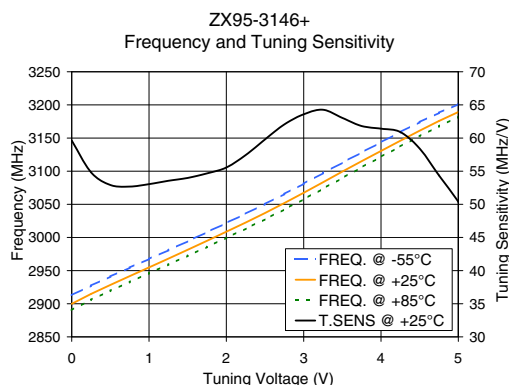
REV. A
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Page 1 of 2

Performance Data & Curves*

ZX95-3146+

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 3065 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	59.63	2912.9	2899.8	2890.4	8.38	7.99	7.01	37.32	-31.7	-25.8	-50.3	3.34	4.53	-71.7	-99.9	-123.2	-143.3	1.0	-72.38
0.50	52.92	2941.0	2928.4	2919.6	8.79	8.44	7.35	37.27	-28.5	-24.7	-45.4	2.87	2.17	-74.1	-100.3	-122.8	-143.4	2.0	-83.61
0.75	52.68	2954.4	2941.7	2932.8	8.96	8.62	7.54	37.20	-28.2	-25.7	-46.1	2.78	2.71	-71.7	-100.1	-123.0	-143.3	3.5	-90.15
1.00	53.04	2967.6	2954.8	2946.0	9.13	8.75	7.70	37.14	-27.3	-24.7	-43.0	2.71	4.64	-72.7	-99.8	-123.1	-143.6	6.0	-95.58
1.25	53.55	2980.9	2968.1	2959.1	9.26	8.88	7.85	37.08	-26.9	-25.6	-45.7	2.66	5.30	-74.0	-100.0	-122.8	-143.3	8.5	-99.94
1.50	53.97	2994.4	2981.5	2972.3	9.41	9.00	7.98	37.02	-27.0	-25.8	-41.4	2.58	4.22	-71.8	-100.5	-123.2	-144.2	10.0	-102.24
1.75	54.67	3007.9	2995.0	2985.7	9.54	9.11	8.07	36.96	-26.6	-24.5	-42.6	2.48	3.18	-73.2	-101.0	-122.8	-144.3	20.8	-109.04
2.00	55.55	3021.7	3008.7	2999.4	9.65	9.20	8.15	36.89	-25.8	-25.8	-40.2	2.38	3.10	-73.0	-101.1	-123.6	-143.1	35.5	-114.82
2.25	57.44	3035.8	3022.5	3013.3	9.76	9.29	8.16	36.80	-25.2	-24.6	-41.2	2.27	4.84	-72.6	-101.4	-123.8	-143.6	60.7	-120.05
2.50	59.80	3050.4	3036.9	3027.5	9.86	9.36	8.17	36.72	-25.8	-24.5	-38.4	2.17	6.09	-73.1	-101.2	-123.9	-143.7	86.7	-123.35
2.75	62.05	3065.5	3051.9	3042.3	9.96	9.41	8.18	36.65	-26.4	-25.6	-40.3	2.10	5.32	-73.3	-101.6	-124.9	-144.3	100.0	-124.48
3.00	63.58	3081.2	3067.4	3057.7	10.01	9.47	8.22	36.59	-25.2	-25.3	-40.0	2.10	3.65	-72.2	-102.1	-124.2	-144.8	148.1	-128.02
3.25	64.27	3097.1	3083.3	3073.5	10.05	9.51	8.24	36.55	-24.7	-25.5	-41.4	2.21	2.81	-73.5	-102.5	-124.9	-145.3	177.0	-129.33
3.50	63.04	3112.8	3099.3	3089.7	10.11	9.53	8.31	36.52	-26.1	-24.1	-39.5	2.40	5.94	-74.5	-102.4	-125.5	-145.8	211.6	-130.84
3.75	61.81	3128.2	3115.1	3105.8	10.13	9.57	8.32	36.48	-25.0	-25.1	-39.3	2.64	6.13	-76.3	-102.8	-125.0	-145.1	302.4	-132.89
4.00	61.42	3143.6	3130.5	3121.6	10.12	9.54	8.26	36.42	-23.5	-25.6	-36.0	2.96	4.33	-76.6	-103.9	-126.1	-145.8	361.5	-134.56
4.25	60.91	3159.0	3145.9	3137.2	10.09	9.47	8.10	36.38	-24.4	-26.5	-39.4	3.32	2.15	-74.8	-102.9	-126.6	-147.2	507.5	-139.06
4.50	58.42	3173.9	3161.1	3152.7	10.13	9.42	7.96	36.35	-25.3	-26.2	-37.6	3.69	4.66	-73.7	-102.9	-126.8	-146.4	606.7	-139.82
4.75	54.36	3188.1	3175.7	3167.7	10.16	9.45	7.94	36.34	-24.0	-27.1	-36.7	3.94	6.35	-75.4	-103.1	-126.9	-145.7	851.6	-143.14
5.00	50.40	3201.1	3189.3	3181.8	10.20	9.46	7.98	36.33	-23.3	-26.9	-36.9	4.11	5.57	-73.1	-102.4	-126.9	-146.7	1000.0	-144.43

*at 25°C unless mentioned otherwise



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