Coaxial

Voltage Controlled Oscillator ZX95-148+

5V Tuning for PLL IC's 127 to 148 MHz

Features
- linear tuning characteristics
- low phase noise
- protected by US patent 6,790,049

Applications
- R & D
- lab
- instrumentation
- defence systems
- satellite systems

CASE STYLE: GB956

Connectors	Model
SMA	ZX95-148-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					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dBr (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
								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.	Typ.	Max.	Typ.	Typ.		Max.
ZX95-148+	127	148	+3.5	-84	-110	-131	-152	0.5	5	5-11	45	20	-90	-18	-10	0.3	1.5	4.5	25

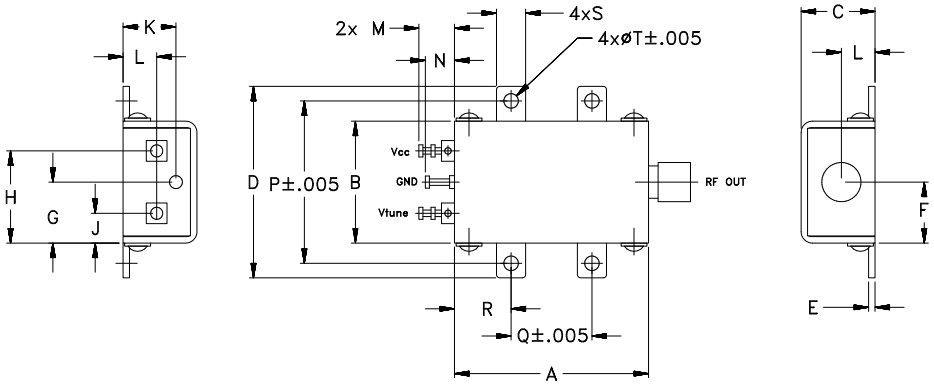
Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	6.5V
Absolute Max. Tuning Voltage (Vtune)	7.0V
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
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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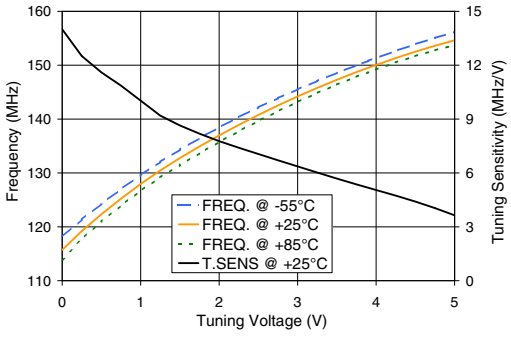
Performance Data & Curves*

ZX95-148+

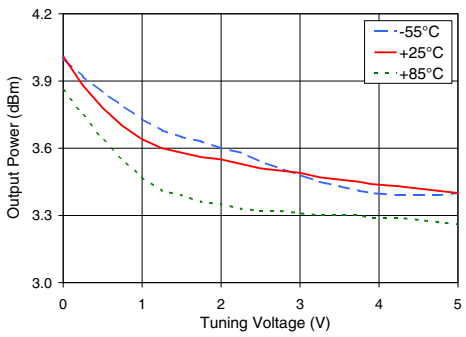
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 138 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	14.00	118.2	115.7	113.9	4.00	4.01	3.86	16.51	-12.4	-29.4	-34.3	1.81	0.34	-83.8	-110.3	-130.8	-151.0	1.0	-83.84
0.50	11.60	124.3	122.3	121.0	3.85	3.78	3.64	16.33	-14.7	-28.1	-36.3	1.85	0.40	-84.0	-109.5	-130.5	-150.3	2.0	-92.09
0.75	10.86	127.0	125.2	124.0	3.79	3.70	3.55	16.36	-15.6	-27.9	-37.1	1.68	0.43	-81.9	-109.2	-130.8	-150.5	3.5	-98.54
1.00	10.03	129.6	128.0	126.7	3.73	3.64	3.47	16.47	-16.2	-28.1	-37.6	1.41	0.38	-81.4	-110.0	-131.5	-152.3	6.0	-104.91
1.25	9.19	132.1	130.5	129.2	3.68	3.60	3.41	16.62	-16.8	-28.3	-37.8	1.08	0.28	-80.7	-110.8	-132.0	-152.6	8.5	-108.52
1.50	8.65	134.3	132.8	131.5	3.65	3.58	3.39	16.79	-17.4	-28.4	-38.1	0.94	0.26	-82.9	-109.7	-132.6	-152.9	10.0	-109.87
1.75	8.19	136.5	134.9	133.7	3.63	3.56	3.36	16.94	-17.9	-28.5	-38.4	0.97	0.30	-82.1	-109.9	-132.5	-152.5	20.8	-117.50
2.00	7.77	138.5	137.0	135.8	3.60	3.55	3.35	17.09	-18.3	-28.6	-38.9	1.06	0.27	-83.8	-110.4	-132.0	-152.6	35.5	-122.65
2.25	7.40	140.4	138.9	137.7	3.58	3.53	3.33	17.21	-18.7	-28.8	-39.0	1.17	0.26	-86.3	-109.9	-131.8	-152.3	60.7	-127.53
2.50	7.06	142.2	140.8	139.6	3.54	3.51	3.32	17.31	-19.1	-29.1	-38.8	1.28	0.05	-84.3	-109.6	-131.9	-153.3	86.7	-130.78
2.75	6.71	143.9	142.5	141.5	3.51	3.50	3.32	17.39	-19.5	-29.4	-38.7	1.39	0.10	-85.3	-109.4	-131.7	-151.7	100.0	-132.16
3.00	6.36	145.5	144.2	143.2	3.48	3.49	3.31	17.45	-19.9	-29.6	-38.7	1.50	0.32	-84.4	-109.9	-131.8	-151.3	148.1	-135.65
3.25	6.02	147.1	145.8	144.8	3.45	3.47	3.30	17.49	-20.3	-29.7	-38.9	1.60	0.27	-83.8	-109.1	-131.5	-151.7	177.0	-137.18
3.50	5.69	148.6	147.3	146.4	3.43	3.46	3.30	17.52	-20.7	-29.7	-39.1	1.68	0.40	-86.1	-109.2	-131.5	-151.6	211.6	-138.84
3.75	5.36	150.0	148.7	147.9	3.41	3.45	3.30	17.51	-21.1	-29.7	-39.2	1.76	0.36	-82.6	-109.2	-131.5	-152.8	302.4	-141.97
3.90	5.17	150.8	149.5	148.7	3.40	3.44	3.29	17.51	-21.4	-29.7	-39.2	1.80	0.40	-82.3	-108.7	-131.2	-152.1	361.5	-143.55
4.25	4.74	152.7	151.3	150.5	3.39	3.43	3.29	17.49	-22.0	-29.8	-39.0	1.88	0.41	-81.6	-108.9	-130.5	-151.7	507.5	-146.53
4.50	4.41	153.9	152.5	151.7	3.39	3.42	3.28	17.46	-22.3	-29.9	-38.8	1.90	0.31	-80.6	-108.7	-130.2	-151.7	606.7	-148.23
4.75	4.04	155.1	153.6	152.8	3.39	3.41	3.27	17.42	-22.8	-30.0	-38.7	1.90	0.22	-80.1	-107.9	-130.2	-150.2	851.6	-151.08
5.00	3.64	156.2	154.6	153.7	3.40	3.40	3.26	17.38	-23.1	-30.2	-38.6	1.85	0.08	-80.0	-107.2	-129.1	-150.0	1000.0	-152.50

*at 25°C unless mentioned otherwise

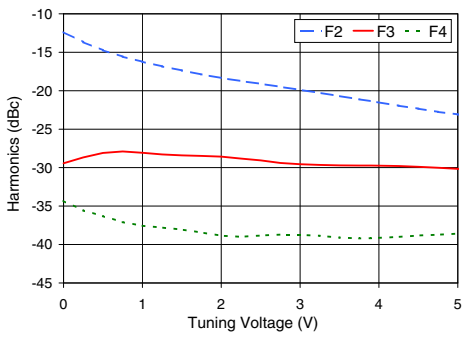
ZX95-148+
Frequency and Tuning Sensitivity



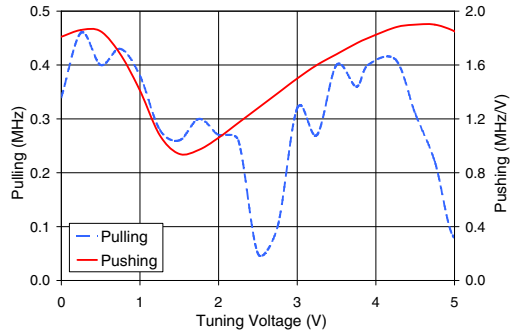
ZX95-148+
Power Output



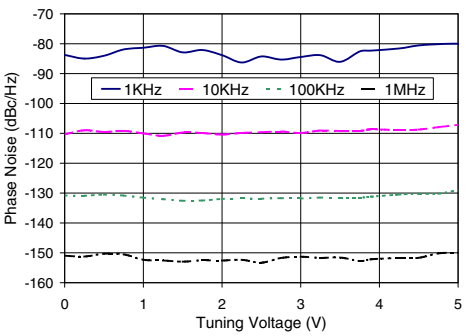
ZX95-148+
Harmonics Level



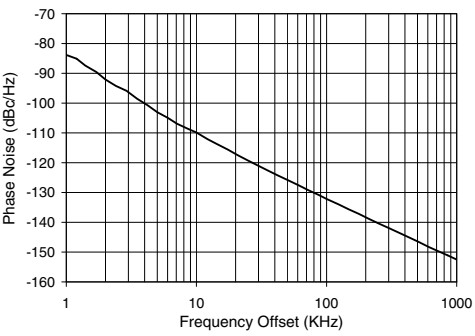
ZX95-148+
Frequency Pulling & Pushing (Vcc ± 5%)



ZX95-148+
Phase Noise Vs. Tuning Voltage



ZX95-148+
Phase Noise



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