

# Voltage Controlled Oscillator

## ZX95-615+

5V Tuning for PLL IC's 580 to 615 MHz

### Features

- linear tuning characteristics
- low phase noise
- low pushing
- low pulling
- 0.5-5V tuning voltage range
- protected by US patent 6,790,049



CASE STYLE: GB956

Connectors	Model
SMA	ZX95-615-S+

### Applications

- r & d
- lab
- instrumentation
- PLL circuitry
- wireless microphones

**+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.				VOLTAGE RANGE (V)	SENSI- TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	Typ.	Max.	Typ.	Max.	Vcc (volts)			Current (mA)	
				1	10	100	1000	Min.	Max.	Typ.	Typ.									Typ.
ZX95-615+	580	615	-1	-87	-111	-132	-153	0.5	5	12-13	47	52	-90	-21	-13	0.3	0.2	5	17	

### Maximum Ratings

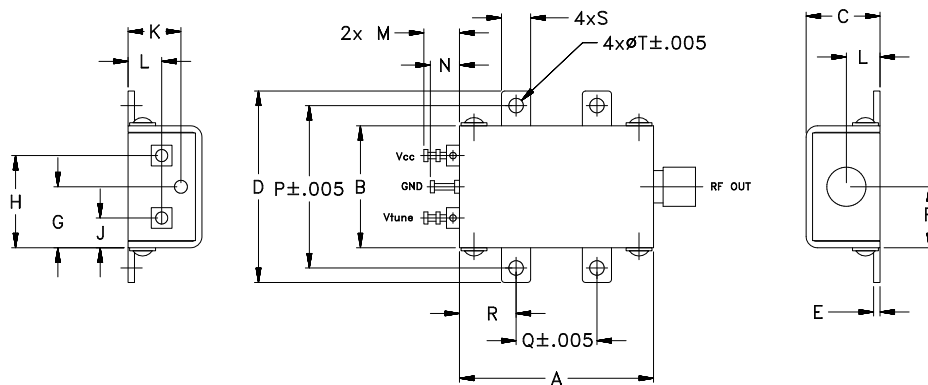
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	7V
Absolute Max. Tuning Voltage (Vtune)	7V
All specifications	50 ohm system

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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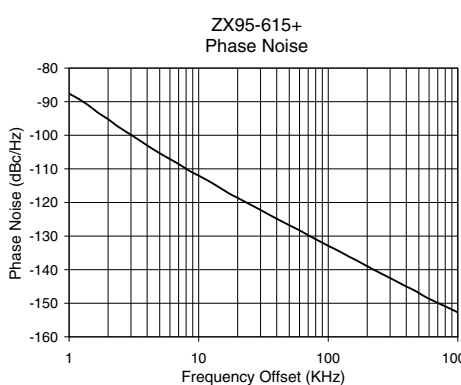
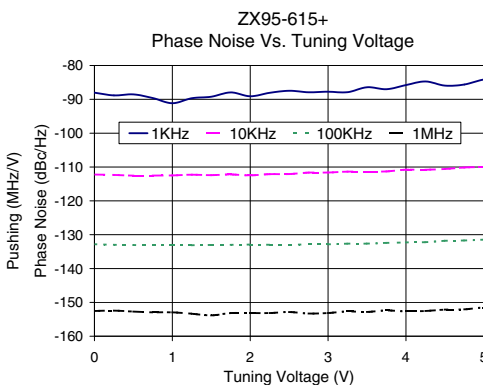
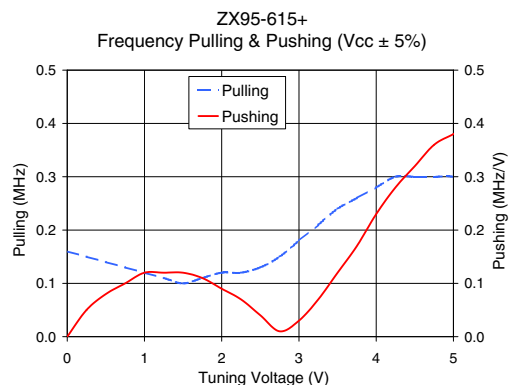
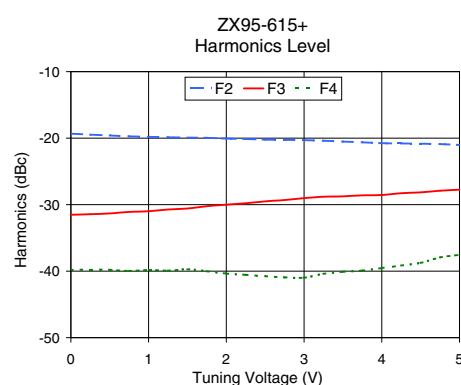
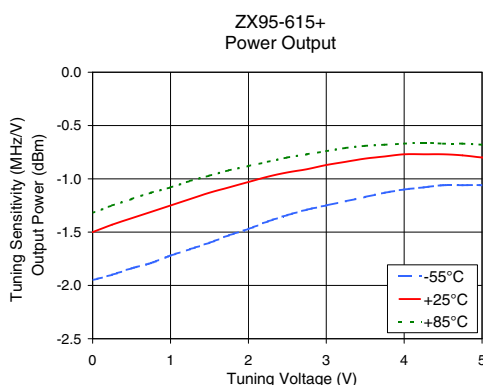
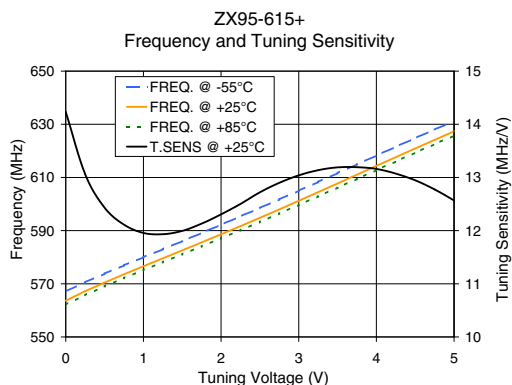


# Performance Data & Curves\*

# ZX95-615+

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 596 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	14.24	567.1	563.6	562.1	-1.95	-1.50	-1.32	12.05	-19.3	-31.5	-39.8	0.00	0.16	-88.0	-112.2	-132.8	-152.5	1.0	-87.58
0.50	12.43	573.8	570.5	569.0	-1.84	-1.37	-1.19	12.10	-19.6	-31.3	-39.8	0.08	0.14	-88.5	-112.6	-133.0	-152.7	2.0	-95.21
0.75	12.11	576.9	573.6	572.1	-1.79	-1.31	-1.13	12.12	-19.7	-31.1	-40.0	0.10	0.13	-89.6	-112.5	-133.1	-153.0	3.5	-101.52
1.00	11.96	580.0	576.6	575.2	-1.72	-1.25	-1.08	12.14	-19.8	-31.0	-39.8	0.12	0.12	-91.1	-112.5	-133.1	-152.9	6.0	-107.08
1.25	11.93	583.0	579.6	578.1	-1.66	-1.19	-1.02	12.16	-19.9	-30.7	-39.9	0.12	0.11	-89.7	-112.3	-133.1	-153.4	8.5	-110.59
1.50	11.99	586.1	582.6	581.1	-1.60	-1.13	-0.97	12.18	-19.9	-30.6	-39.7	0.12	0.10	-89.2	-112.4	-133.0	-153.8	10.0	-112.02
1.75	12.13	589.1	585.6	584.1	-1.53	-1.08	-0.92	12.20	-20.0	-30.2	-40.0	0.11	0.11	-88.0	-112.2	-133.0	-153.2	20.8	-118.98
2.00	12.31	592.2	588.6	587.1	-1.47	-1.03	-0.88	12.21	-20.1	-30.0	-40.4	0.09	0.12	-89.1	-112.5	-132.9	-153.2	35.5	-123.78
2.25	12.50	595.3	591.7	590.2	-1.40	-0.98	-0.84	12.22	-20.1	-29.8	-40.6	0.07	0.12	-88.1	-112.1	-133.0	-153.2	60.7	-128.40
2.50	12.72	598.5	594.8	593.3	-1.34	-0.94	-0.80	12.24	-20.2	-29.5	-40.8	0.04	0.13	-87.5	-112.1	-133.0	-152.9	85.2	-131.49
2.75	12.90	601.7	598.0	596.4	-1.29	-0.91	-0.77	12.25	-20.3	-29.3	-40.9	0.01	0.15	-87.9	-111.6	-132.9	-153.3	100.0	-132.88
3.00	13.04	605.0	601.2	599.7	-1.25	-0.87	-0.74	12.26	-20.3	-29.0	-41.0	0.03	0.18	-87.8	-111.6	-132.8	-153.2	142.9	-136.01
3.25	13.14	608.3	604.5	602.9	-1.21	-0.84	-0.71	12.26	-20.4	-28.8	-40.4	0.07	0.21	-87.9	-111.4	-132.7	-152.7	167.8	-137.39
3.50	13.19	611.6	607.8	606.2	-1.17	-0.81	-0.69	12.27	-20.5	-28.8	-40.1	0.12	0.24	-86.4	-111.4	-132.6	-152.8	200.6	-139.01
3.75	13.19	615.0	611.1	609.5	-1.13	-0.79	-0.68	12.27	-20.6	-28.6	-39.9	0.17	0.26	-87.0	-111.3	-132.4	-152.4	281.6	-141.97
4.00	13.16	618.3	614.4	612.8	-1.10	-0.77	-0.67	12.28	-20.8	-28.6	-39.5	0.23	0.28	-85.8	-110.8	-132.3	-152.6	330.7	-143.34
4.25	13.07	621.5	617.6	616.1	-1.08	-0.77	-0.66	12.28	-20.8	-28.3	-39.2	0.28	0.30	-84.7	-110.8	-132.2	-152.5	464.2	-146.21
4.50	12.95	624.8	620.9	619.3	-1.06	-0.77	-0.67	12.28	-20.8	-28.2	-38.8	0.32	0.30	-86.0	-110.6	-131.8	-152.1	554.9	-147.97
4.75	12.77	628.0	624.1	622.5	-1.06	-0.78	-0.67	12.29	-20.9	-27.9	-37.9	0.36	0.30	-85.6	-110.2	-131.7	-152.1	914.6	-151.99
5.00	12.57	631.2	627.3	625.7	-1.06	-0.80	-0.68	12.29	-21.0	-27.8	-37.6	0.38	0.30	-84.2	-110.0	-131.5	-151.5	1000.0	-152.78

\*at 25°C unless mentioned otherwise



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