

# Voltage Controlled Oscillator

## ZX95-1660+

5V Tuning for PLL IC's 1630 to 1660 MHz

### Features

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



CASE STYLE: GB956

Connectors	Model
SMA	ZX95-1660-S+

### Applications

- lab
- instrumentation
- wireless communications
- radio & radar astronomy

**+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 <sub>r</sub> (MHz)	PUSHING (MHz/V)	DC OPERATING POWER					
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)		SENSI- TIVITY (MHz/V)	PORT CAP (pF)		3 dB MODULATION BANDWIDTH (MHz)	Typ.			Typ.	Max.	Typ.	Max.	V <sub>cc</sub> (volts)	Current (mA)
									Min.	Max.													
ROS-1660+	1630	1660	+0.5	-83	-107	-127	-147	0.5	4.5	33	20	180	-90	-19	-10	0.8	1	5	30				

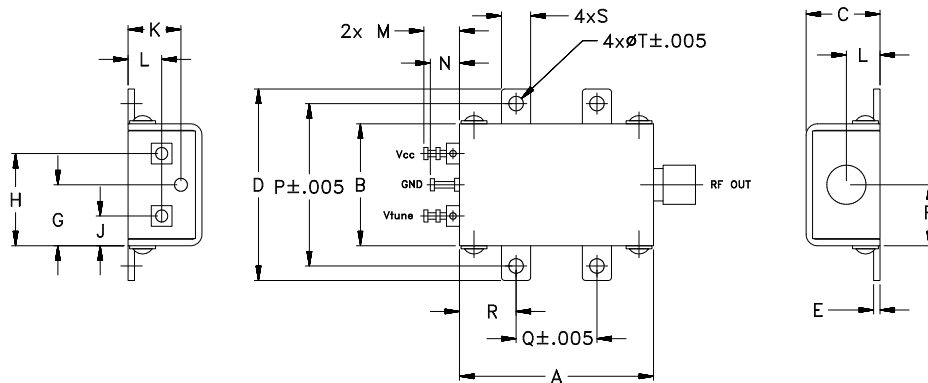
### Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (V <sub>cc</sub> )	7.0V
Absolute Max. Tuning Voltage (V <sub>tune</sub> )	6.5V
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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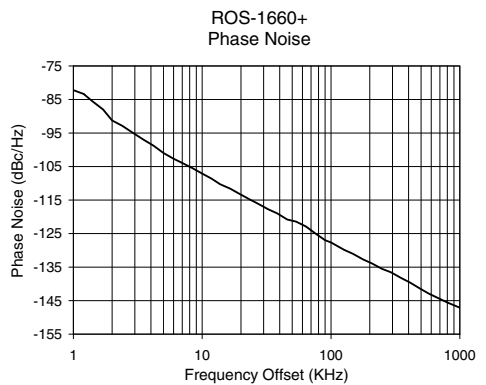
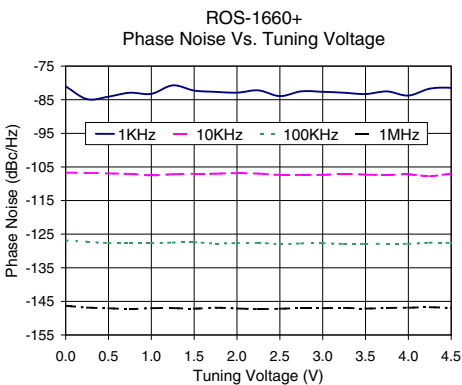
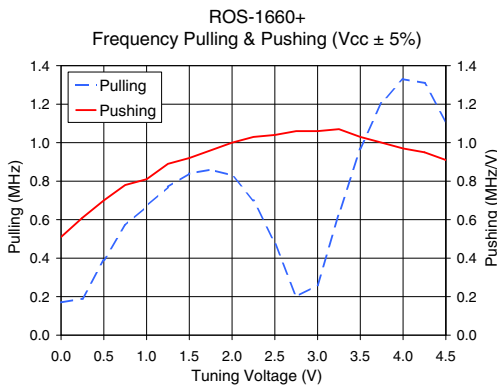
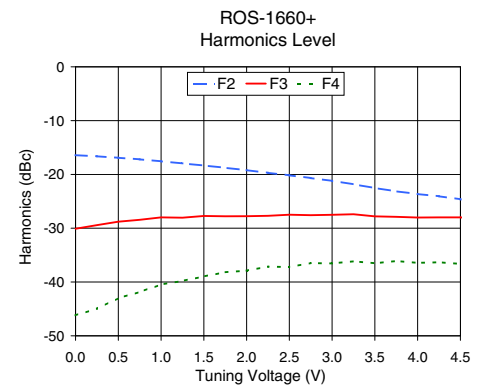
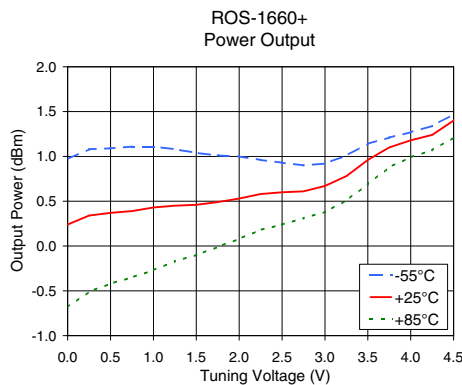
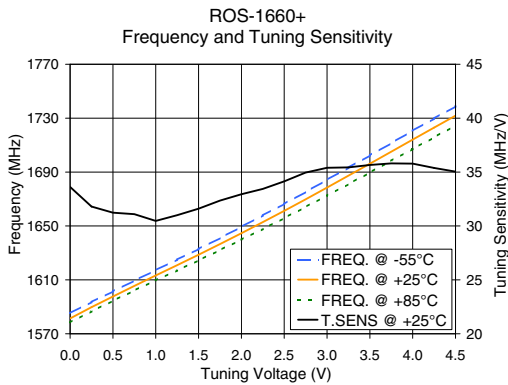


# Performance Data & Curves\*

# ZX95-1660+

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 1648 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	33.62	1585.2	1581.3	1578.4	0.97	0.24	-0.68	20.45	-16.4	-30.1	-46.2	0.51	0.17	-81.0	-106.7	-126.9	-146.3	1.0	-82.23
0.25	31.80	1593.5	1589.7	1586.7	1.08	0.34	-0.51	20.50	-16.6	-29.4	-45.0	0.61	0.19	-84.8	-106.8	-127.3	-146.9	2.0	-91.26
0.50	31.23	1601.5	1597.7	1594.5	1.09	0.37	-0.42	20.52	-16.9	-28.8	-43.0	0.70	0.39	-84.1	-106.9	-127.7	-147.1	3.5	-96.96
0.75	31.09	1609.4	1605.5	1602.1	1.11	0.39	-0.35	20.52	-17.2	-28.4	-41.8	0.78	0.57	-82.9	-107.1	-127.6	-147.3	6.0	-102.68
1.00	30.47	1617.2	1613.3	1609.6	1.11	0.43	-0.27	20.55	-17.6	-28.0	-40.5	0.81	0.67	-83.3	-107.5	-127.7	-147.0	8.4	-105.48
1.25	31.00	1625.0	1620.9	1617.0	1.08	0.45	-0.17	20.56	-18.0	-28.1	-39.8	0.89	0.77	-80.7	-107.2	-127.5	-147.0	10.0	-107.10
1.50	31.60	1632.9	1628.6	1624.5	1.04	0.46	-0.10	20.58	-18.3	-27.7	-39.0	0.92	0.84	-82.3	-107.0	-127.4	-147.2	23.2	-114.74
1.75	32.36	1641.0	1636.5	1632.1	1.01	0.49	-0.01	20.59	-18.8	-27.8	-38.2	0.96	0.86	-82.7	-107.0	-127.8	-146.9	32.5	-117.74
2.00	32.95	1649.4	1644.6	1639.8	1.00	0.53	0.08	20.60	-19.2	-27.8	-37.9	1.00	0.83	-82.9	-106.9	-127.6	-147.1	53.6	-121.43
2.25	33.44	1657.8	1652.9	1647.8	0.96	0.58	0.18	20.62	-19.7	-27.7	-37.1	1.03	0.70	-82.2	-107.0	-127.6	-147.3	75.3	-124.89
2.50	34.14	1666.4	1661.2	1655.9	0.93	0.60	0.24	20.64	-20.2	-27.5	-37.2	1.04	0.48	-83.9	-107.4	-127.9	-147.2	100.0	-127.65
2.75	34.96	1675.2	1669.8	1664.1	0.90	0.61	0.31	20.66	-20.7	-27.6	-36.5	1.06	0.20	-82.5	-107.4	-127.8	-147.0	177.4	-132.71
3.00	35.40	1684.3	1678.5	1672.5	0.92	0.67	0.38	20.69	-21.2	-27.5	-36.5	1.06	0.26	-82.6	-107.4	-127.7	-147.0	208.3	-133.91
3.25	35.43	1693.3	1687.4	1681.1	1.01	0.78	0.51	20.72	-21.8	-27.4	-36.2	1.07	0.63	-82.9	-107.1	-127.9	-146.9	292.4	-136.55
3.50	35.66	1702.4	1696.2	1689.7	1.14	0.96	0.69	20.76	-22.5	-27.8	-36.5	1.03	0.97	-83.3	-107.3	-127.9	-147.2	349.6	-138.23
3.75	35.80	1711.5	1705.1	1698.4	1.21	1.10	0.88	20.79	-23.1	-27.9	-36.1	1.00	1.21	-82.5	-107.4	-127.9	-147.0	410.5	-139.59
4.00	35.78	1720.7	1714.1	1707.1	1.27	1.18	0.99	20.82	-23.6	-28.0	-36.4	0.97	1.33	-83.8	-107.2	-127.9	-146.9	576.3	-142.94
4.25	35.38	1729.8	1723.0	1715.8	1.34	1.24	1.07	20.85	-24.1	-28.0	-36.3	0.95	1.31	-81.7	-107.8	-127.6	-146.8	809.1	-145.64
4.50	35.04	1738.8	1731.9	1724.5	1.47	1.40	1.21	20.89	-24.6	-28.0	-36.6	0.91	1.11	-81.5	-107.0	-127.6	-146.9	1000.0	-147.11

\*at 25°C unless mentioned otherwise



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