

Surface Mount

Voltage Controlled Oscillator

JTOS-1650+

Linear Tuning 1200 to 1650 MHz

Features

- wide frequency range, 1200 to 1650 MHz
- linear tuning characteristics
- low phase noise, -144 dBc/Hz at 1 MHz offset
- aqueous washable

Applications

- GPS
- instrumentation
- communication systems



CASE STYLE: BK377

+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 _r (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.		Typ.	Typ.			Typ.	Max.	Typ.	Max.
				1	10	100	1000														
JTOS-1650+	1200	1650	+9	-72	-99	-124	-144	1	13	55 - 70	37	1	-90	-30	-17	15	1.5	12	33		

Pin Connections

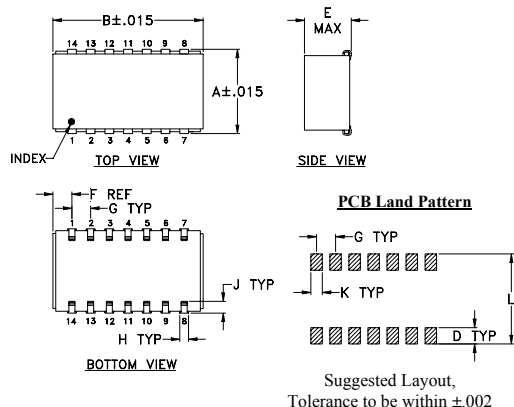
RF OUT	13
VCC	2
V-TUNE	5
GROUND	1,3,4,6,7,8,9,10,11,12,14

Maximum Ratings

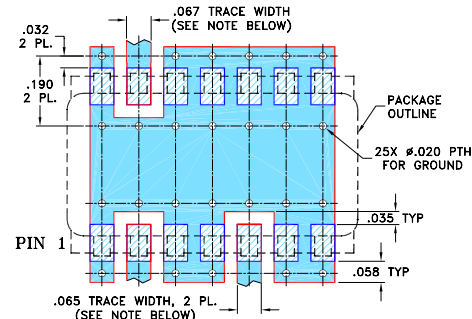
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+14V
Absolute Max. Tuning Voltage (Vtune)	+15V

all specifications: 50 ohm system
Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Demo Board MCL PIN: TB-04 Suggested PCB Layout (PL-005)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

■ DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	wt
.505	.800	--	.100	.250	.100	.100	.047	.065	.065	.525	grams
12.83	20.32	--	2.54	6.35	2.54	2.54	1.19	1.65	1.65	13.34	3.0

Notes

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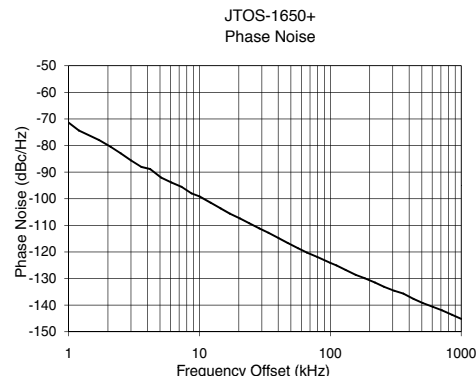
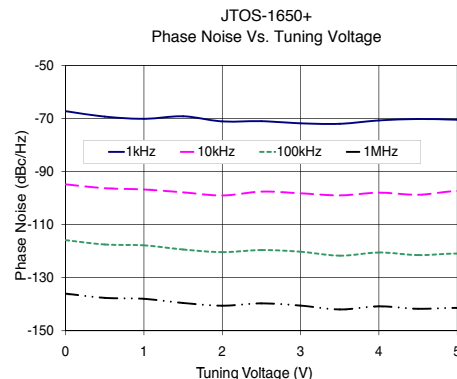
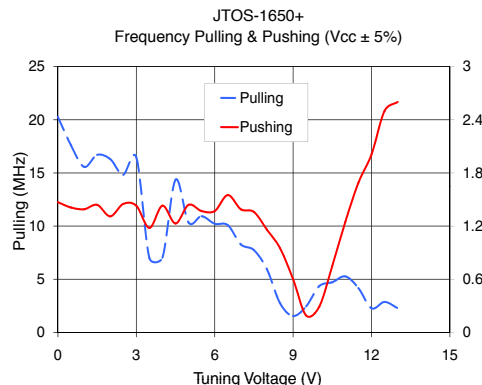
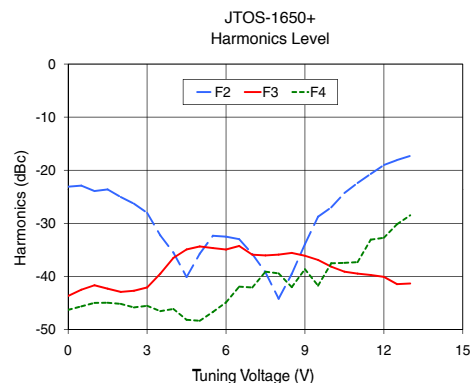
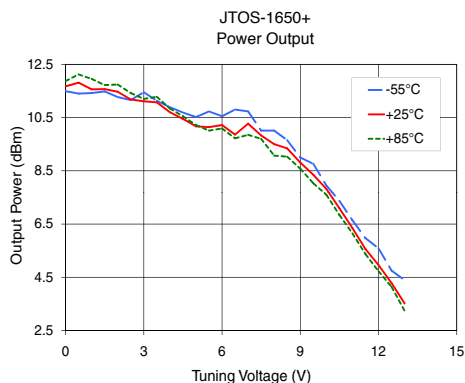
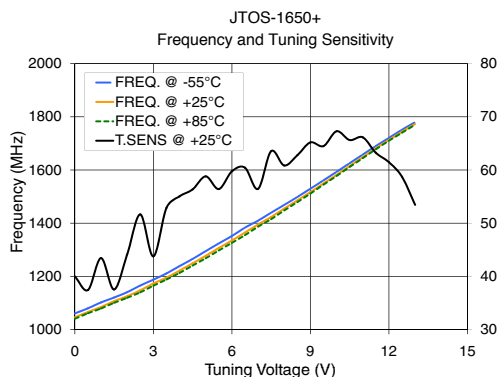
REV. G
M154059
JTOS-1650+
EDR-11219
MCL/RAV
151203
Page 1 of 2

Performance Data & Curves*

JTOS-1650+

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 1425 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	39.99	1060.8	1046.3	1040.8	11.49	11.67	11.87	24.84	-23.1	-43.7	-46.3	1.47	20.26	-67.23	-94.8	-115.8	-136.0	1.0	-71.37
0.50	37.44	1080.2	1066.3	1061.2	11.40	11.81	12.12	25.07	-22.9	-42.5	-45.7	1.41	17.60	-69.27	-96.3	-117.5	-137.6	2.5	-82.91
1.00	43.45	1102.0	1085.0	1079.4	11.42	11.56	11.95	25.23	-23.9	-41.7	-45.0	1.39	15.57	-70.12	-96.8	-117.8	-138.0	4.2	-88.83
1.50	37.55	1120.5	1106.7	1100.5	11.48	11.57	11.72	25.49	-23.6	-42.3	-45.0	1.44	16.70	-69.16	-97.8	-119.4	-139.5	7.3	-95.54
2.00	44.13	1140.7	1125.5	1119.6	11.27	11.47	11.74	25.62	-25.1	-42.9	-45.2	1.31	16.30	-71.08	-99.0	-120.4	-140.6	10.0	-99.12
3.00	43.77	1187.9	1173.4	1165.2	11.45	11.11	11.20	25.93	-28.0	-42.1	-45.5	1.43	16.48	-71.80	-98.2	-120.2	-140.5	12.2	-101.51
4.00	55.04	1238.5	1221.7	1213.2	10.89	10.70	10.84	26.06	-35.5	-36.5	-46.1	1.43	7.03	-70.72	-98.0	-120.5	-140.8	24.0	-109.22
5.00	58.80	1295.0	1277.4	1268.2	10.52	10.17	10.22	26.33	-35.7	-34.4	-48.4	1.44	10.33	-70.46	-97.3	-120.9	-141.4	40.2	-114.77
6.00	59.75	1352.0	1335.0	1326.2	10.55	10.22	10.09	26.70	-32.5	-34.9	-44.9	1.37	10.22	-70.84	-98.4	-122.6	-143.3	66.3	-120.26
7.00	56.45	1409.8	1395.1	1386.8	10.73	10.27	9.85	27.07	-35.8	-35.9	-42.1	1.39	8.28	-71.54	-99.3	-124.1	-145.1	100.0	-124.12
8.00	60.85	1468.9	1455.1	1448.0	10.01	9.50	9.07	26.78	-44.2	-35.9	-39.4	1.16	5.93	-72.15	-100.0	-125.5	-146.5	111.3	-125.07
9.00	65.18	1529.6	1516.9	1511.3	9.00	8.81	8.58	26.33	-33.9	-36.1	-38.6	0.60	1.55	-73.87	-102.0	-126.8	-147.5	156.2	-128.61
10.00	67.28	1593.0	1581.7	1577.5	7.95	7.82	7.60	25.95	-27.0	-38.2	-37.5	0.29	4.35	-74.46	-101.9	-125.2	-145.8	183.5	-129.90
11.00	66.14	1657.8	1648.2	1644.7	6.64	6.35	6.15	25.69	-22.4	-39.5	-37.3	1.25	5.27	-72.38	-99.1	-121.7	-142.4	219.3	-131.52
12.00	61.46	1720.5	1712.9	1709.9	5.59	4.96	4.73	25.62	-19.0	-40.1	-32.7	2.01	2.27	-70.85	-97.1	-119.5	-140.2	307.9	-134.60
12.50	58.72	1751.4	1743.6	1740.3	4.75	4.28	4.14	25.54	-18.1	-41.5	-30.2	2.50	2.87	-69.01	-95.5	-118.0	-138.7	361.5	-135.69
13.00	53.46	1779.6	1773.0	1770.2	4.39	3.52	3.24	25.60	-17.3	-41.3	-28.5	2.60	2.29	-68.92	-95.8	-118.0	-138.7	507.5	-139.19
13.50	52.04	1806.6	1799.7	1796.9	4.15	3.37	3.12	25.65	-16.5	-41.0	-31.2	2.94	3.38	-68.60	-94.8	-117.2	-137.9	606.7	-140.64
14.00	48.80	1832.8	1825.7	1822.9	3.59	2.80	2.56	25.65	-16.8	-41.2	-30.3	3.10	3.95	-68.31	-94.9	-116.9	-137.3	851.6	-143.64
15.00	45.29	1879.8	1872.8	1869.7	3.00	1.97	1.72	25.67	-15.3	-37.9	-31.7	3.42	2.27	-67.83	-94.1	-116.3	-136.9	1000.0	-145.17

*at 25°C unless mentioned otherwise.



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