Surface Mount

Voltage Controlled Oscillator

ROS-1310C+

Ultra Low Noise 1260 to 1310 MHz



CASE STYLE: CK1113

Features

- ultra low phase noise
- linear tuning characteristics
- low pushing
- low pulling
- aqueous washable

Applications

- wireless communications
- cellular infrastructure

+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.
ROS-1310C+	1260	1310	+3	-95	-120	-140	-159	0.5	20	2.5 - 5	40	120	-90	-25	-13	0.20	0.10	5	35

Pin Connections

RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	6V
Absolute Max. Tuning Voltage (Vtune)	22V
All specifications	50 ohm system

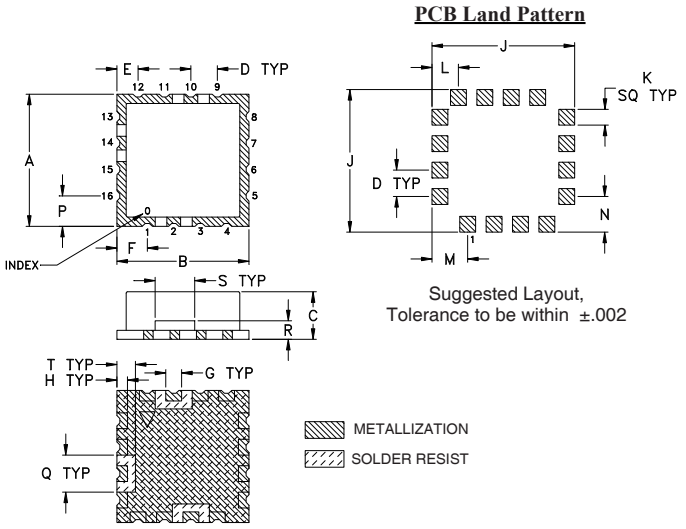
Permanent damage may occur if any of these limits are exceeded.

Tape & Reel: F37

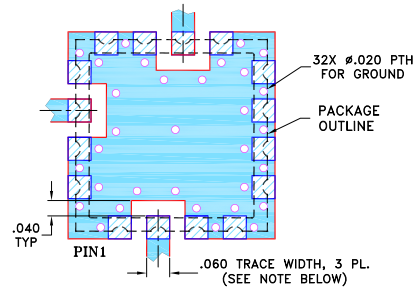
13" Reels with 20, 50, 100, 200, 500 devices

Environmental Ratings: ENV65

Outline Drawing



Demo Board MCL P/N: TB-10
Suggested PCB Layout (PL-012)



NOTES:

1. TRACE WIDTH IS SHOWN FOR FR4 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 BOTTOM 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	M	N	P	Q	R	S	T	wt.
.500	.500	.220	.100	.080	.115	.060	.040	.540	.060	.100	.135	.135	.115	.140	.070	.150	.070	grams
12.70	12.70	5.59	2.54	2.03	2.92	1.52	1.02	13.72	1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.2

Notes

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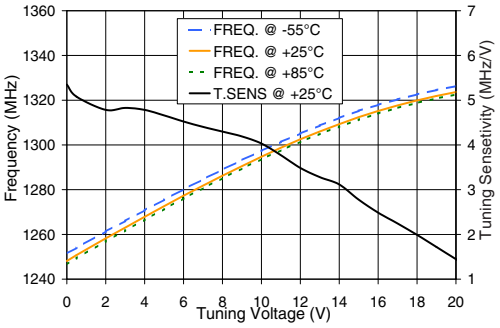
Performance Data & Curves*

ROS-1310C+

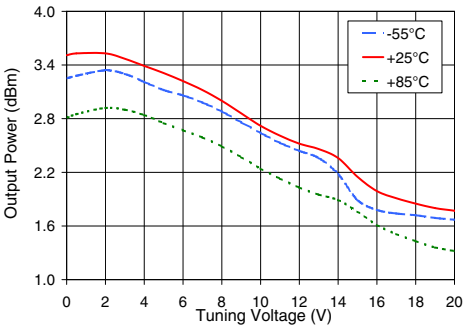
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 1285 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	5.35	1251.4	1248.1	1246.6	3.25	3.51	2.81	28.90	-32.7	-37.7	-50.7	0.03	0.21	-96.2	-121.1	-141.2	-160.0	1.0	-95.11
0.50	5.08	1254.0	1250.8	1249.4	3.28	3.53	2.85	28.97	-32.6	-37.4	-49.1	0.04	0.21	-97.1	-121.8	-140.8	-159.6	2.1	-103.93
2.00	4.78	1261.3	1258.3	1257.0	3.34	3.53	2.92	29.12	-32.4	-36.5	-44.4	0.06	0.22	-98.4	-122.5	-140.8	-158.4	3.5	-109.70
3.00	4.83	1266.0	1263.0	1261.8	3.30	3.47	2.90	29.18	-32.9	-35.1	-42.8	0.07	0.21	-97.4	-120.9	-140.6	-157.6	6.1	-115.13
4.00	4.78	1270.8	1267.9	1266.6	3.21	3.39	2.84	29.22	-33.6	-33.9	-42.1	0.09	0.18	-96.0	-121.1	-141.0	-159.0	8.7	-119.20
5.00	4.66	1275.5	1272.7	1271.4	3.12	3.31	2.75	29.23	-34.5	-33.6	-41.5	0.11	0.13	-95.9	-122.6	-141.1	-158.9	10.0	-121.18
6.00	4.52	1280.2	1277.3	1276.1	3.06	3.22	2.67	29.22	-35.3	-33.4	-39.4	0.12	0.09	-95.3	-121.1	-140.1	-158.9	21.1	-127.16
7.00	4.40	1284.6	1281.8	1280.7	2.98	3.12	2.59	29.20	-35.1	-33.0	-38.1	0.10	0.09	-95.0	-121.3	-140.6	-158.4	36.1	-131.96
8.00	4.30	1289.0	1286.2	1285.1	2.88	3.00	2.49	29.18	-34.9	-32.7	-36.1	0.08	0.12	-95.1	-121.3	-140.6	-158.3	61.6	-136.57
9.00	4.19	1293.2	1290.5	1289.4	2.76	2.86	2.37	29.16	-34.8	-32.1	-35.6	0.06	0.16	-94.0	-120.3	-139.8	-158.3	86.4	-138.30
10.00	4.03	1297.3	1294.7	1293.6	2.64	2.72	2.24	29.14	-35.7	-32.3	-35.7	0.05	0.19	-94.0	-119.9	-139.9	-157.4	100.0	-139.91
11.00	3.77	1301.3	1298.8	1297.6	2.53	2.61	2.13	29.10	-36.9	-31.7	-36.3	0.05	0.20	-94.2	-119.4	-139.5	-157.6	145.0	-143.10
12.00	3.49	1305.1	1302.5	1301.4	2.44	2.52	2.03	29.05	-35.3	-31.0	-35.7	0.04	0.20	-94.7	-119.8	-140.3	-157.5	170.2	-143.21
13.00	3.28	1308.6	1306.0	1304.9	2.36	2.46	1.95	28.99	-30.8	-29.8	-35.3	0.02	0.20	-95.2	-120.7	-140.1	-157.9	203.5	-144.93
14.00	3.12	1312.1	1309.3	1308.2	2.18	2.36	1.89	28.98	-26.8	-29.5	-35.3	0.12	0.20	-96.5	-121.2	-140.5	-158.6	285.6	-145.61
15.00	2.78	1315.3	1312.4	1311.2	1.89	2.15	1.76	29.09	-24.5	-29.8	-35.7	0.14	0.20	-98.1	-121.7	-141.6	-158.2	335.4	-146.76
16.00	2.49	1317.9	1315.2	1314.0	1.78	1.99	1.61	29.18	-24.8	-30.0	-35.6	0.07	0.20	-98.2	-121.4	-141.2	-158.2	470.7	-151.55
17.00	2.24	1320.4	1317.7	1316.6	1.74	1.91	1.51	29.21	-25.5	-30.5	-34.9	0.03	0.19	-96.4	-120.4	-140.5	-158.7	562.6	-153.37
19.00	1.72	1324.6	1321.9	1320.8	1.69	1.80	1.36	29.22	-26.4	-30.6	-34.5	0.03	0.17	-95.3	-121.2	-140.4	-158.1	927.2	-158.42
20.00	1.45	1326.3	1323.6	1322.5	1.67	1.77	1.32	29.21	-26.6	-30.4	-34.1	0.04	0.15	-95.9	-120.9	-140.4	-157.4	1000.0	-158.50

*at 25°C unless mentioned otherwise

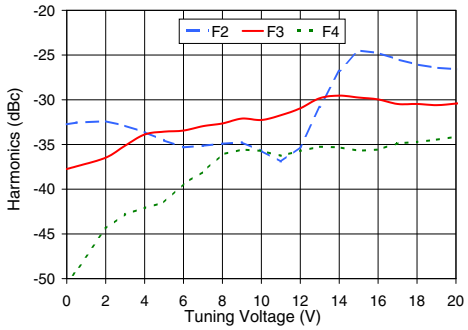
ROS-1310C+
Frequency and Tuning Sensitivity



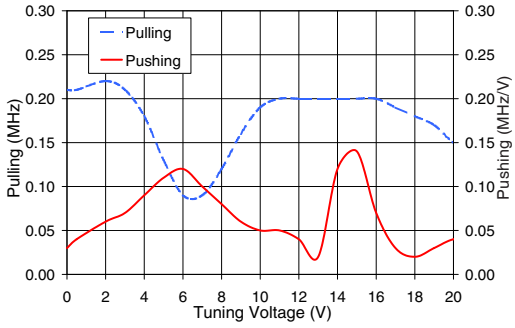
ROS-1310C+
Power Output



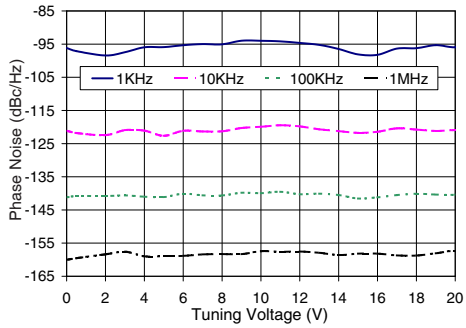
ROS-1310C+
Harmonics Level



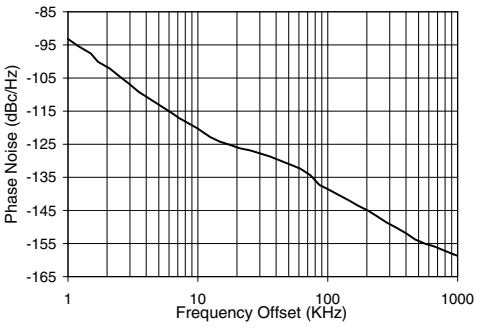
ROS-1310C+
Frequency Pulling & Pushing (Vcc ± 5%)



ROS-1310C+
Phase Noise Vs. Tuning Voltage



ROS-1310C+
Phase Noise



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