Surface Mount

Voltage Controlled Oscillator

ROS-3100+

Linear Tuning 2300 to 3100 MHz

CASE STYLE: CK605
PRICE: $15.95 ea. QTY (5-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Features

- High power, +9dBm typ.
- Low phase noise
- Low pushing
- Aqueous washable

Applications

- Satellite systems
- Wireless communications
- Defense communications & radar

Electrical Specifications

MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies,kHz Typ.				TUNING VOLTAGE RANGE (V)		SENSI-TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dBr (MHz)	PUSHING (MHz/V)	DC OPERATING POWER Vcc (volts)	DC OPERATING POWER Current (mA)
	Min.	Max.	Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Typ.		Max.
ROS-3100+	2300	3100	+9	-66	-92	-113	-133	0.5	11	92-124	20	160	-90	-20	-10	5	4	10	46

Pin Connections

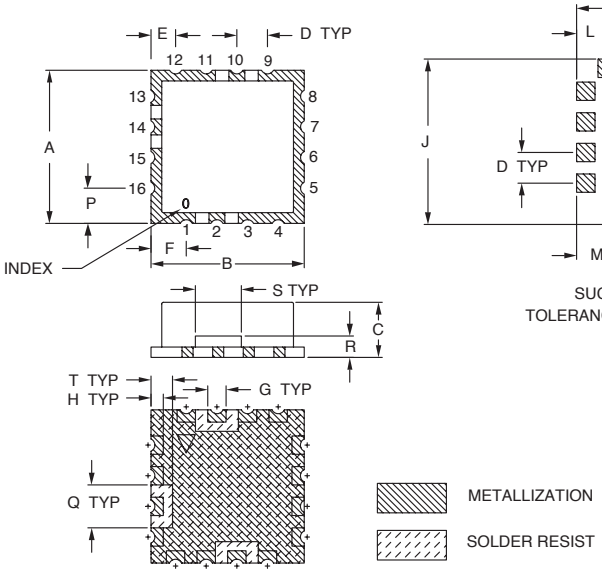
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

Maximum Ratings

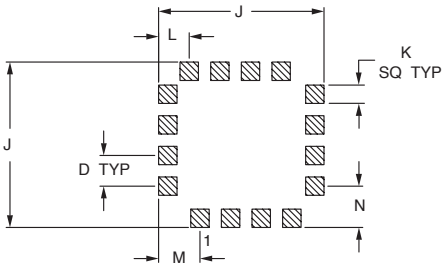
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	12V
Absolute Max. Tuning Voltage (Vtune)	13V
All specifications	50 ohm system

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

Outline Drawing

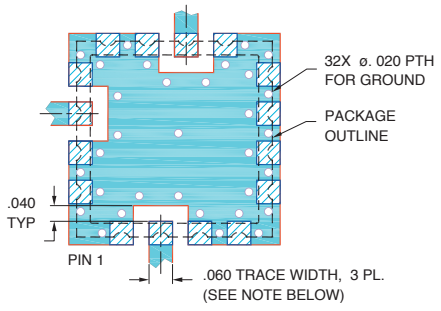


PCB Land Pattern



SUGGESTED LAYOUT,
TOLERANCE TO BE WITHIN ±.002

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



NOTES: 1. TRACE WIDTH IS SHOWN FOR RF4 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	M	N	P	Q	R	S	T	wt.
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060	.100	.135	.135	.115	.140	.070	.150	.070	grams
12.70	12.70	4.57	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	1.0

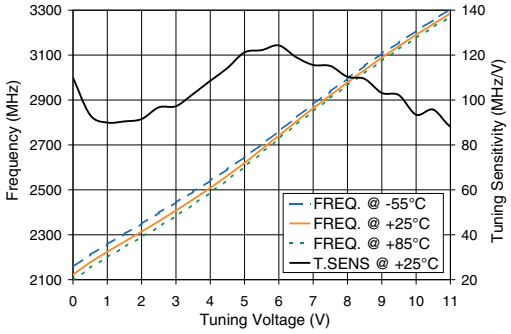
Performance Data & Curves*

ROS-3100+

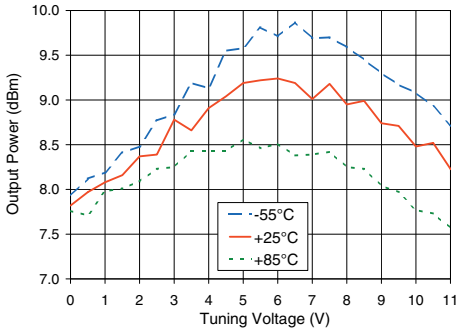
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 2700 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	109.88	2156.8	2122.4	2096.3	7.93	7.82	7.76	40.87	-21.2	-16.8	-32.5	3.20	3.46	-70.4	-92.3	-112.8	-133.0	1.0	-66.22
0.50	93.31	2210.3	2177.3	2153.1	8.12	7.97	7.71	40.96	-20.3	-18.6	-34.9	3.53	4.15	-69.1	-92.4	-113.3	-133.4	2.0	-75.77
1.00	89.96	2257.7	2224.0	2200.3	8.19	8.08	7.98	41.01	-21.4	-18.5	-37.7	3.99	3.47	-67.9	-91.5	-112.8	-133.1	3.5	-81.24
1.50	90.48	2303.8	2269.0	2245.8	8.41	8.16	8.01	41.11	-22.0	-19.3	-43.3	3.82	1.42	-68.9	-92.8	-114.0	-134.5	6.0	-87.32
2.00	91.53	2348.9	2314.2	2290.4	8.48	8.37	8.09	41.16	-21.0	-21.8	-46.2	4.23	4.07	-67.4	-92.6	-114.1	-134.2	8.5	-91.50
2.50	96.73	2397.6	2360.0	2335.5	8.77	8.39	8.23	41.24	-20.7	-22.2	-48.6	4.67	4.60	-66.8	-91.9	-114.0	-134.5	10.0	-93.07
3.00	97.28	2444.1	2408.4	2383.9	8.84	8.78	8.25	41.30	-21.6	-23.3	-47.5	5.03	1.60	-65.7	-92.3	-114.8	-135.4	20.8	-99.49
3.50	102.67	2491.8	2457.0	2434.0	9.19	8.66	8.43	41.32	-20.5	-25.3	-44.9	5.26	4.82	-63.8	-92.3	-114.6	-135.3	35.5	-104.47
4.00	108.55	2540.5	2508.3	2487.8	9.13	8.91	8.43	41.21	-19.6	-25.3	-45.6	5.44	7.50	-64.5	-91.5	-114.0	-135.0	60.7	-109.58
4.50	114.23	2592.5	2562.6	2543.8	9.55	9.04	8.43	41.15	-18.6	-24.8	-48.1	5.59	4.85	-66.0	-91.7	-113.8	-134.1	86.7	-112.96
5.00	121.25	2646.3	2619.7	2602.8	9.58	9.19	8.56	41.06	-19.1	-26.9	-53.0	4.80	2.72	-64.9	-93.0	-114.5	-135.0	100.0	-114.18
5.50	122.23	2702.3	2680.3	2664.8	9.81	9.22	8.46	40.98	-18.2	-27.3	-49.5	4.31	4.68	-66.2	-93.2	-114.3	-134.7	148.1	-117.71
6.00	124.30	2761.3	2741.5	2728.2	9.71	9.24	8.51	40.88	-18.9	-29.3	-43.5	3.51	5.19	-66.1	-92.8	-114.4	-134.4	177.0	-118.98
6.50	119.11	2821.5	2803.6	2790.3	9.87	9.19	8.38	40.81	-18.2	-30.7	-41.6	2.95	5.83	-66.8	-92.9	-114.5	-134.5	211.6	-120.51
7.00	115.62	2881.6	2863.2	2849.1	9.69	9.01	8.39	40.73	-18.6	-33.2	-43.7	2.60	6.18	-66.4	-92.4	-113.9	-134.0	302.4	-123.83
7.50	115.16	2938.1	2921.0	2909.1	9.70	9.18	8.42	40.65	-18.5	-34.7	-45.2	2.33	7.04	-67.8	-92.7	-113.5	-133.7	361.5	-125.19
8.00	110.32	2995.4	2978.6	2965.1	9.59	8.95	8.25	40.57	-18.6	-39.9	-42.8	2.25	5.41	-67.8	-91.0	-112.6	-132.9	507.5	-128.37
9.00	103.18	3106.7	3088.4	3074.3	9.30	8.74	8.04	40.48	-20.6	-55.7	-42.5	2.03	5.92	-65.5	-91.3	-113.1	-133.4	606.7	-129.74
10.00	93.46	3207.9	3191.1	3176.3	9.08	8.48	7.77	40.36	-22.9	-49.4	-43.5	2.01	10.22	-63.9	-91.3	-112.6	-132.5	851.6	-132.83
11.00	88.23	3305.4	3285.7	3271.1	8.72	8.23	7.57	40.24	-24.5	-42.4	-45.6	2.00	12.59	-66.6	-90.5	-111.8	-132.1	1000.0	-134.19

*at 25°C unless mentioned otherwise

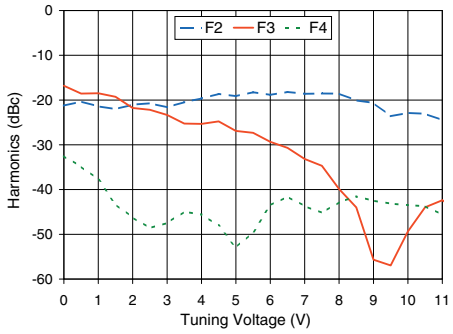
ROS-3100+
Frequency and Tuning Sensitivity



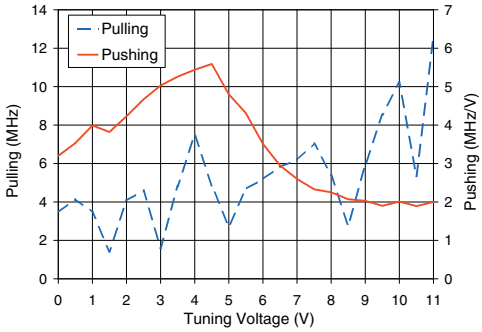
ROS-3100+
Power Output



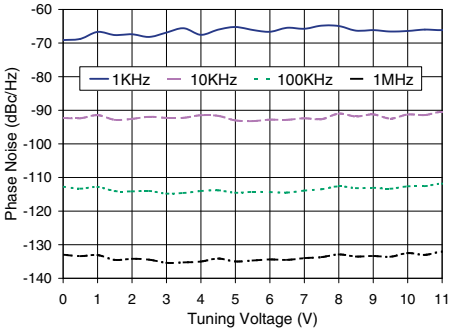
ROS-3100+
Harmonics Level



ROS-3100+
Frequency Pulling & Pushing (Vcc ± 5%)



ROS-3100+
Phase Noise Vs. Tuning Voltage



ROS-3100+
Phase Noise