Surface Mount

Voltage Controlled Oscillator

ROS-3000-819+

Wide Band 2000 to 3000 MHz

Features

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

Applications

- wireless communications
- satellite systems
- defense systems
- test equipment
- SAP / SAB
- RFID



CASE STYLE: CK605

+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 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	
	Min.	Max.	Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Typ.	Vcc (volts)	Current (mA) Max.
ROS-3000-819+	2000	3000	+5.5	-71	-96	-117	-138	0.5	14	84-125	20	140	-90	-22	-10	13.5	1.5	12	35

Pin Connections

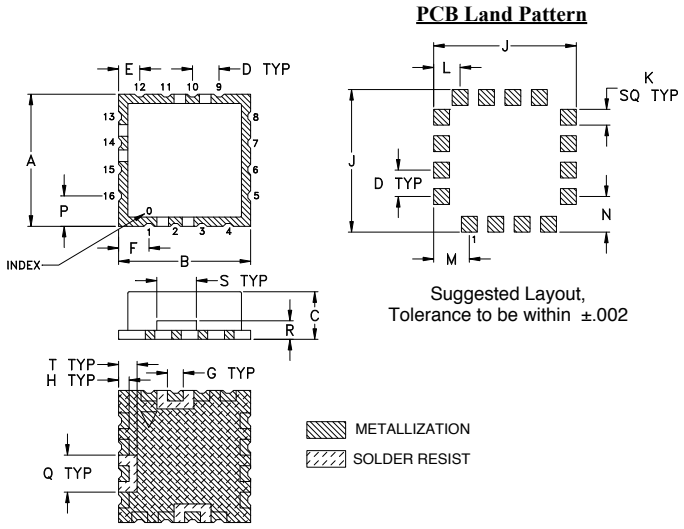
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

Maximum Ratings

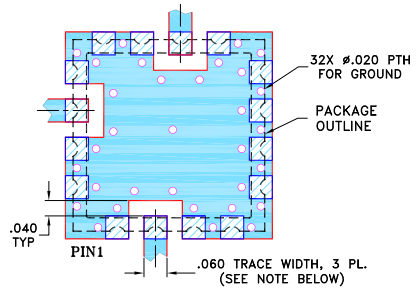
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	13V
Absolute Max. Tuning Voltage (Vtune)	16V
All specifications	50 ohm system

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

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	.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

Notes

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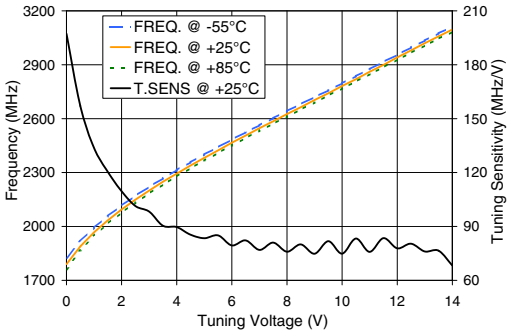
Performance Data & Curves*

ROS-3000-819+

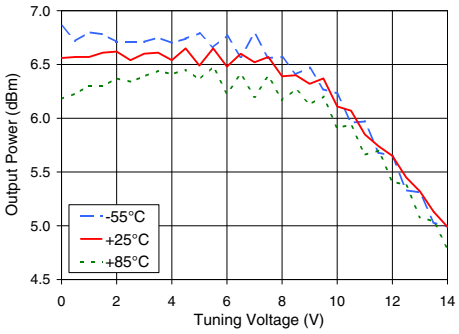
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 2500 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	197.29	1825.2	1790.1	1761.1	6.86	6.56	6.18	26.73	-12.8	-29.9	-31.6	0.50	14.94	-66.4	-95.2	-115.6	-135.5	1.0	-72.71
0.50	157.09	1917.9	1888.8	1866.8	6.72	6.57	6.23	26.77	-14.6	-30.9	-33.2	0.10	4.93	-68.2	-96.3	-117.0	-136.9	2.0	-83.96
1.00	133.75	1992.8	1967.3	1947.8	6.80	6.57	6.30	26.81	-15.4	-30.5	-33.1	0.36	5.86	-68.6	-96.7	-117.4	-137.2	3.5	-87.45
1.50	120.38	2057.8	2034.2	2016.5	6.78	6.61	6.30	26.86	-16.3	-30.8	-30.9	0.50	5.91	-69.6	-96.2	-118.0	-138.1	6.0	-94.77
2.00	109.64	2116.3	2094.4	2077.0	6.71	6.62	6.37	26.90	-18.8	-28.6	-29.9	0.62	10.28	-71.2	-97.0	-118.3	-138.2	8.5	-97.58
3.00	98.24	2220.7	2199.9	2184.0	6.71	6.60	6.39	26.95	-22.3	-23.8	-31.5	0.75	11.26	-70.0	-97.4	-118.6	-138.6	10.0	-98.30
4.00	89.65	2314.0	2294.2	2278.8	6.70	6.54	6.41	26.99	-22.7	-22.2	-33.4	0.82	12.82	-70.8	-97.9	-118.7	-139.0	20.8	-105.97
5.00	83.47	2400.8	2381.7	2366.2	6.79	6.49	6.36	27.01	-20.8	-23.0	-36.0	0.90	12.26	-69.7	-97.9	-119.0	-138.7	35.5	-110.64
6.00	79.46	2483.8	2466.0	2450.7	6.77	6.48	6.23	27.04	-18.9	-23.8	-34.3	1.03	7.93	-70.8	-97.7	-119.0	-139.0	60.7	-115.29
6.50	82.21	2524.1	2505.7	2491.8	6.57	6.60	6.41	27.06	-19.5	-24.6	-32.8	1.04	13.91	-72.7	-98.8	-120.3	-139.8	86.7	-118.67
7.00	76.96	2563.7	2546.8	2532.4	6.79	6.52	6.20	27.07	-20.2	-24.9	-33.9	1.13	8.69	-74.1	-98.9	-119.6	-139.9	100.0	-119.64
8.00	75.93	2642.2	2625.8	2611.5	6.57	6.39	6.17	27.05	-20.5	-25.3	-32.3	1.27	9.29	-72.2	-97.9	-119.4	-139.2	148.1	-122.94
9.00	74.81	2719.9	2703.8	2689.7	6.47	6.32	6.13	27.05	-21.9	-23.8	-33.2	1.29	8.80	-71.6	-97.6	-119.0	-139.0	177.0	-124.53
10.00	74.84	2796.9	2782.1	2767.9	6.23	6.11	5.91	27.02	-22.1	-23.4	-35.4	1.24	12.94	-71.8	-98.0	-118.7	-138.6	211.6	-126.44
11.00	75.88	2875.6	2861.1	2847.4	5.97	5.85	5.66	26.97	-23.4	-24.6	-34.2	1.14	12.98	-71.5	-97.6	-118.4	-138.7	302.4	-129.18
12.00	77.84	2955.3	2940.8	2927.7	5.65	5.65	5.41	26.93	-22.4	-26.4	-35.1	0.88	12.49	-71.0	-97.1	-118.8	-136.8	361.5	-130.73
12.50	80.41	2996.2	2979.7	2966.0	5.33	5.45	5.38	26.88	-23.8	-26.9	-34.2	0.73	9.66	-67.3	-97.3	-117.8	-138.6	507.5	-133.47
13.00	76.08	3035.0	3019.9	3006.9	5.31	5.32	5.08	26.87	-24.7	-28.9	-31.4	0.47	15.20	-68.9	-97.1	-118.7	-138.5	606.7	-135.27
13.50	76.51	3074.5	3058.0	3044.3	5.03	5.13	5.04	26.83	-24.7	-28.1	-31.3	0.27	13.95	-67.4	-96.2	-117.3	-137.7	851.6	-138.28
14.00	68.26	3111.4	3096.2	3082.4	4.99	4.99	4.79	26.82	-23.4	-30.3	-32.7	0.03	12.65	-69.5	-96.0	-117.6	-137.6	1000.0	-139.63

*at 25°C unless mentioned otherwise

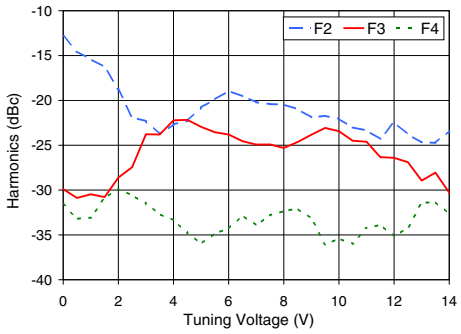
ROS-3000-819+
Frequency and Tuning Sensitivity



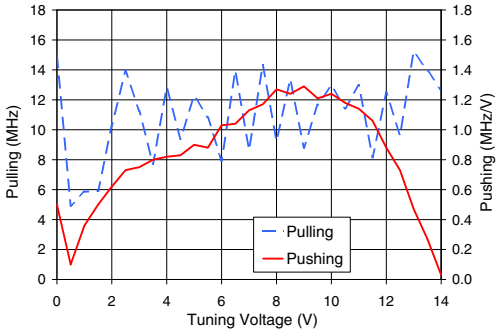
ROS-3000-819+
Power Output



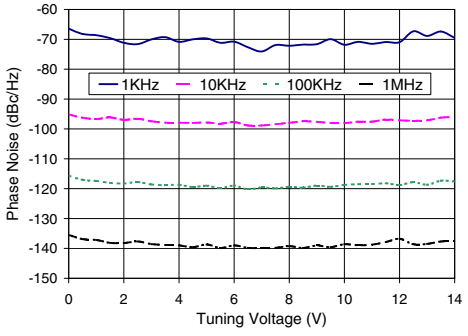
ROS-3000-819+
Harmonics Level



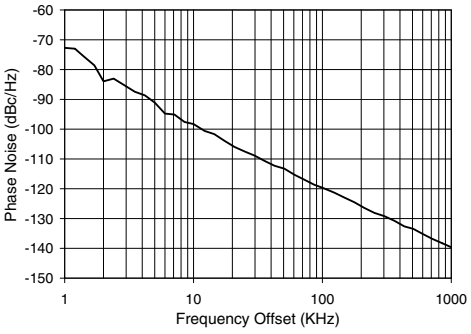
ROS-3000-819+
Frequency Pulling & Pushing (Vcc ± 5%)



ROS-3000-819+
Phase Noise Vs. Tuning Voltage



ROS-3000-819+
Phase Noise



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