

# Surface Mount Voltage Controlled Oscillator

# NON-CATALOG

# ROS-810LN+

## Low Noise 760 to 810 MHz



CASE STYLE: CK605  
PRICE: Contact Sales Dept.

**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Features

- very low phase noise, -115 dBc/Hz at 10 kHz offset, typ.
- good linearity, 8-10 MHz/V typ.
- aqueous washable
- protected by US patent 6,424,241

### Applications

- cellular local oscillator
- trunking radio
- UHF transmitter

### Electrical Specifications

FREQUENCY (MHz)		POWER OUTPUT (dBm)	TUNING VOLTAGE (V)		PHASE NOISE (dBc/Hz) SSB at offset frequencies: Typ.				PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	TUNING SENSITIVITY (MHz/V)	HARMONICS (dBc)		3 dB MODULATION BANDWIDTH (MHz)	DC OPERATING POWER	
Min.	Max.	Typ.	Min.	Max.	1 kHz	10 kHz	100 kHz	1 MHz	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Vcc (volts)	Current (mA) Max.
760	810	5	0.5	10	-90	-115	-135	-155	1.8	0.5	8-10	-24	-18	6.0	8	20

### Pin Connections

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

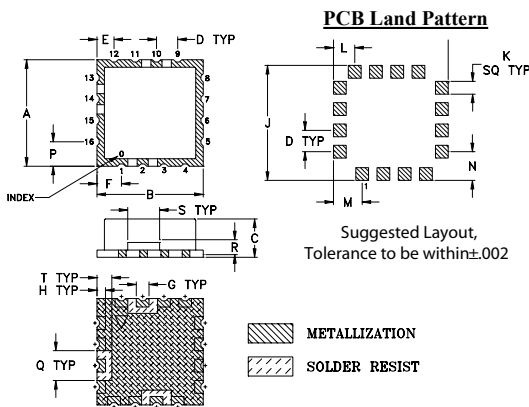
Permanent damage may occur if any of these limits are exceeded.

### Maximum Ratings

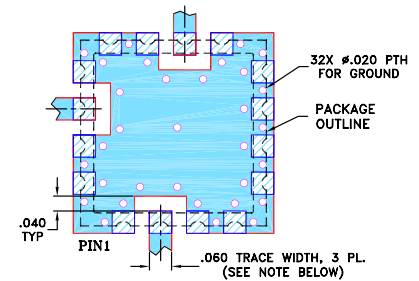
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+9V
Absolute Max. Tuning Voltage (Vtune)	+12V

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

### Outline Drawing



### Demo Board MCL PIN: 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 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

### Notes

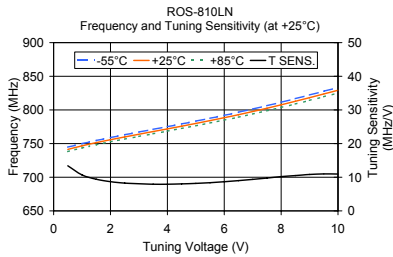
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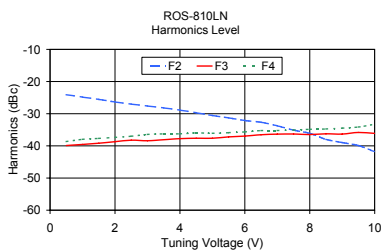
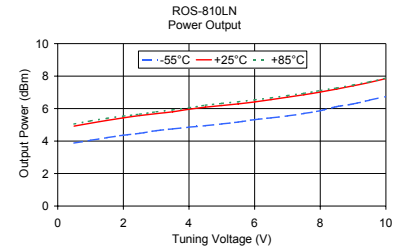
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## Performance Data & Curves

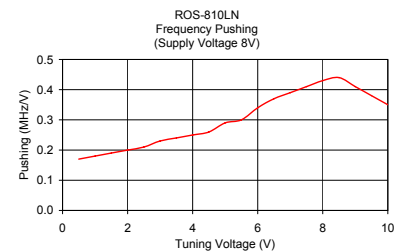
## ROS-810LN+



V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
0.50	13.40	744.77	741.37	738.16	3.88	4.92	5.05
1.00	10.67	749.99	746.70	743.58	4.05	5.10	5.24
1.50	9.41	754.66	751.41	748.30	4.21	5.27	5.40
2.00	8.68	759.00	755.75	752.62	4.36	5.43	5.54
2.50	8.26	763.14	759.88	756.72	4.48	5.57	5.66
3.00	8.06	767.20	763.91	760.70	4.64	5.69	5.80
3.50	7.93	771.20	767.88	764.62	4.75	5.80	5.92
4.00	7.92	775.20	771.84	768.53	4.86	5.96	6.05
4.50	8.02	779.26	775.85	772.49	4.95	6.09	6.21
5.00	8.16	783.39	779.93	776.49	5.06	6.19	6.32
5.50	8.38	787.64	784.12	780.62	5.17	6.29	6.42
6.00	8.66	792.02	788.45	784.87	5.32	6.41	6.54
6.50	9.00	796.59	792.95	789.29	5.43	6.55	6.66
7.00	9.36	801.34	797.63	793.89	5.55	6.70	6.80
7.50	9.76	806.29	802.51	798.68	5.70	6.85	6.94
8.00	10.18	811.45	807.60	803.69	5.87	7.02	7.11
8.50	10.50	816.77	812.85	808.88	6.12	7.20	7.27
9.00	10.82	822.25	818.26	814.22	6.29	7.40	7.45
9.50	10.98	827.81	823.75	819.67	6.52	7.61	7.65
10.00	10.94	833.38	829.22	825.13	6.75	7.85	7.88



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
0.50	-24.08	-39.90	-38.65	0.17
1.00	-24.82	-39.55	-37.97	0.18
1.50	-25.54	-39.18	-37.68	0.19
2.00	-26.34	-38.70	-37.36	0.20
2.50	-27.01	-38.24	-36.99	0.21
3.00	-27.60	-38.41	-36.43	0.23
3.50	-28.19	-38.09	-36.26	0.24
4.00	-28.87	-37.76	-36.24	0.25
4.50	-29.68	-37.63	-35.96	0.26
5.00	-30.54	-37.62	-36.07	0.29
5.50	-31.29	-37.21	-35.90	0.30
6.00	-32.10	-36.95	-35.65	0.34
6.50	-32.64	-36.53	-35.24	0.37
7.00	-33.75	-36.36	-35.23	0.39
7.50	-35.09	-36.31	-35.07	0.41
8.00	-36.11	-36.48	-34.84	0.43
8.50	-37.96	-36.25	-34.74	0.44
9.00	-38.97	-36.32	-34.49	0.41
9.50	-39.89	-35.82	-34.14	0.38
10.00	-41.82	-36.12	-33.28	0.35



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