

# Surface Mount Voltage Controlled Oscillator

# ROS-810LN+ ROS-810LN

Low Noise 760 to 810 MHz



## 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

CASE STYLE: CK605  
PRICE: \$49.95 ea. QTY (1-9)

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

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

## 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

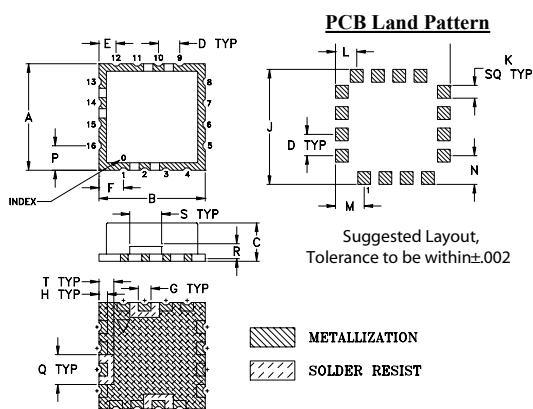
Permanent damage may occur if any of these limits are exceeded.

## Maximum Ratings

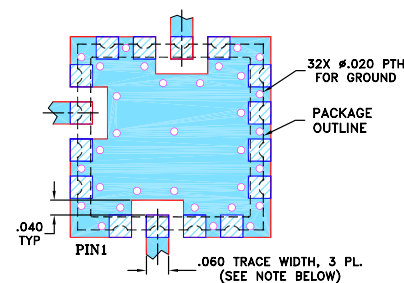
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+9V
Absolute Max. Tuning Voltage (Vtune)	+12V

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



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

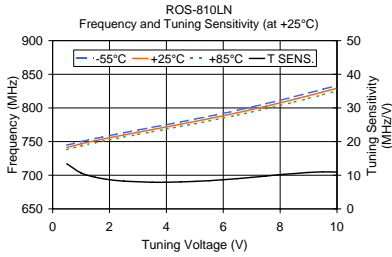
Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

For detailed performance specs & shipping online see web site

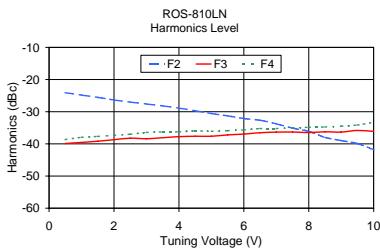
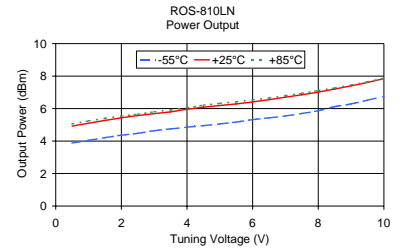
REV. C  
M102713  
ED-8469A/1  
ROS-810LN  
WD/TD/CP/AM  
090826  
Page 1 of 2

# Performance Data & Curves

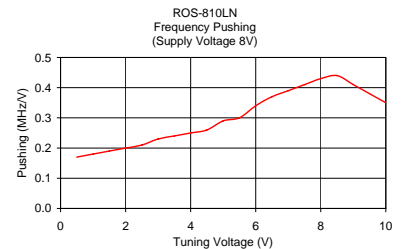
# ROS-810LN+ ROS-810LN



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



For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine [minicircuits.com](http://www.minicircuits.com) Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).