

# Surface Mount Voltage Controlled Oscillator

## ROS-850+

5V Tuning for PLL IC's 800 to 850 MHz

### Features

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

### Applications

- point-to-point radio
- CDMA/ TDMA



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				TUNING				NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER		
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)	SENSITIVITY (MHz/V)	PORT CAP (pF)		3 dB MODULATION BANDWIDTH (MHz)	Typ.			Max.	Vcc	Current
	Typ.				Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.		Max.	(volts)			(mA)		
ROS-850+	800	850	+7	-86	-110	-130	-150	0.5	5	20	22	100	-90	-24	-15	1	0.7	5	27

### Pin Connections

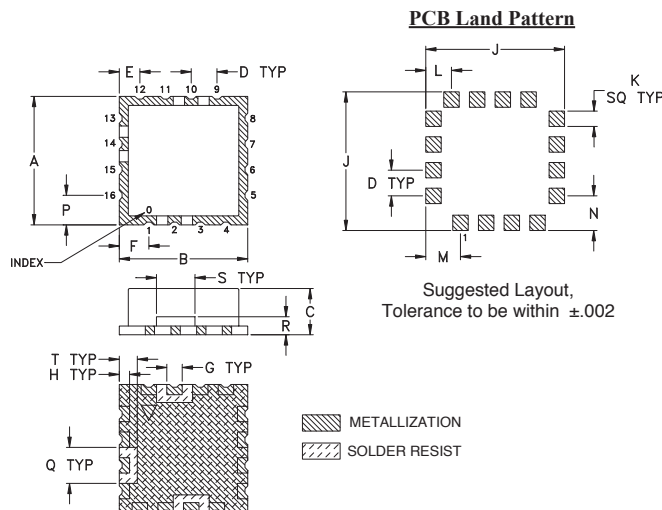
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

### Maximum Ratings

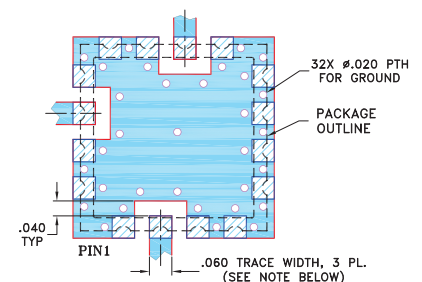
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	6V
Absolute Max. Tuning Voltage (Vtune)	7V
All specifications	50 ohm system

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

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document 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)



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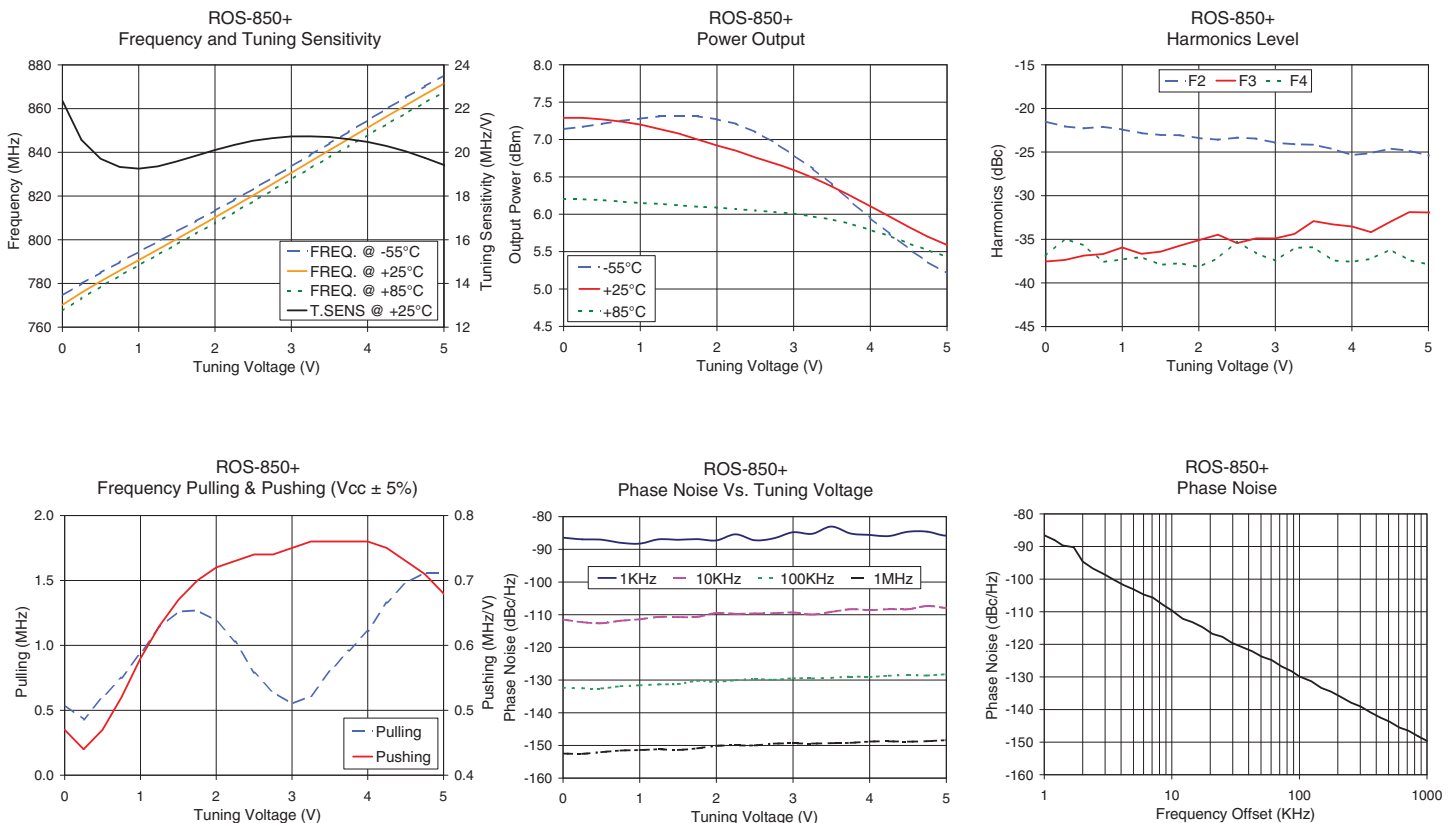
REV. A  
 M151108  
 EDR-7385F1  
 ROS-850+  
 RAV  
 150920  
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# Performance Data & Curves\*

# ROS-850+

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 825 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	22.36	774.5	770.2	767.4	7.14	7.29	6.20	22.26	-21.5	-37.5	-36.9	0.47	0.54	-86.4	-111.5	-132.4	-152.5	1.0	-86.54
0.50	19.71	784.9	780.9	778.5	7.21	7.27	6.19	22.23	-22.3	-36.9	-35.7	0.47	0.60	-87.0	-112.6	-132.6	-152.1	2.0	-94.60
0.75	19.33	789.7	785.9	783.5	7.25	7.24	6.17	22.20	-22.1	-36.7	-37.6	0.52	0.75	-88.0	-111.9	-131.9	-151.6	3.5	-100.17
1.00	19.25	794.4	790.7	788.4	7.28	7.20	6.15	22.18	-22.4	-35.9	-37.3	0.58	0.94	-88.2	-111.4	-131.6	-151.4	6.0	-104.71
1.25	19.36	799.1	795.5	793.2	7.31	7.14	6.14	22.16	-22.8	-36.7	-37.0	0.63	1.14	-86.9	-110.7	-131.3	-151.2	8.5	-107.87
1.50	19.59	803.8	800.4	797.9	7.31	7.08	6.12	22.14	-23.0	-36.4	-37.9	0.67	1.26	-87.1	-110.7	-131.2	-151.4	10.0	-109.61
1.75	19.84	808.5	805.2	802.8	7.31	7.00	6.10	22.13	-23.1	-35.7	-37.7	0.70	1.27	-86.9	-110.7	-130.2	-150.9	20.8	-116.78
2.00	20.11	813.3	810.2	807.6	7.27	6.92	6.09	22.11	-23.4	-35.1	-38.2	0.72	1.19	-87.3	-109.5	-130.5	-150.1	35.5	-120.84
2.25	20.34	818.2	815.2	812.6	7.21	6.85	6.07	22.11	-23.6	-34.5	-37.2	0.73	1.03	-85.4	-109.7	-130.1	-150.0	60.7	-124.84
2.50	20.53	823.2	820.3	817.6	7.10	6.76	6.05	22.10	-23.4	-35.4	-35.3	0.74	0.79	-87.2	-109.6	-129.7	-150.0	86.7	-128.24
2.75	20.65	828.4	825.5	822.6	6.96	6.68	6.03	22.11	-23.5	-34.9	-36.6	0.74	0.64	-86.6	-109.5	-129.9	-149.5	100.0	-129.85
3.00	20.73	833.6	830.6	827.7	6.79	6.59	6.01	22.10	-23.9	-34.9	-37.5	0.75	0.55	-84.8	-109.3	-129.5	-149.4	148.1	-133.34
3.25	20.73	838.8	835.8	832.7	6.61	6.49	5.97	22.10	-24.1	-34.4	-36.0	0.76	0.61	-85.3	-109.9	-129.5	-149.4	177.0	-134.52
3.50	20.70	844.1	841.0	837.8	6.40	6.37	5.93	22.09	-24.2	-32.9	-35.9	0.76	0.80	-83.0	-109.2	-129.3	-149.3	211.6	-136.14
3.75	20.60	849.4	846.2	842.9	6.17	6.24	5.87	22.08	-24.7	-33.3	-37.4	0.76	0.96	-85.1	-108.3	-128.9	-149.2	302.4	-139.08
4.00	20.48	854.7	851.3	847.9	5.95	6.11	5.79	22.07	-25.3	-33.5	-37.6	0.76	1.11	-85.6	-108.6	-129.0	-148.8	361.5	-140.90
4.25	20.29	859.9	856.4	852.9	5.74	5.97	5.71	22.05	-25.1	-34.2	-37.2	0.75	1.33	-86.0	-108.3	-128.7	-148.7	507.5	-143.70
4.50	20.05	865.1	861.5	857.9	5.54	5.83	5.61	22.04	-24.6	-33.0	-36.2	0.73	1.48	-84.6	-108.3	-128.6	-148.8	606.7	-145.51
4.75	19.74	870.2	866.5	862.8	5.36	5.70	5.52	22.02	-24.9	-31.9	-37.4	0.71	1.56	-84.6	-107.4	-128.6	-148.7	851.6	-148.18
5.00	19.42	875.3	871.4	867.6	5.21	5.59	5.43	22.01	-25.4	-31.9	-37.9	0.68	1.56	-85.8	-108.0	-128.3	-148.4	1000.0	-149.61

\*at 25°C unless mentioned otherwise



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