

Surface Mount Voltage Controlled Oscillator

JCOS-175LN

Low Noise 125 to 175 MHz

Features

- very low phase noise, -118 dBc/Hz at 10 kHz offset, typ.
- excellent tuning sensitivity, 3-5 MHz/V typ.
- aqueous washable

Applications

- aircraft radios
- VHF/UHF transmitters



CASE STYLE: BG419

Electrical Specifications

FREQUENCY (MHz)		POWER OUTPUT (dBm)	TUNING VOLTAGE (V)		PHASE NOISE (dBc/Hz)					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.		Min.	Max.	SSB at offset frequencies: Typ.								Typ.	Typ.		Typ.	Max.
100 Hz	1 KHz	10 KHz	100 KHz	1 MHz													
125	175	+3.7	1	17	—	-95	-118	-138	-158	0.08	0.05	3-5	-25	-20	2.9	12	20

Pin Connections

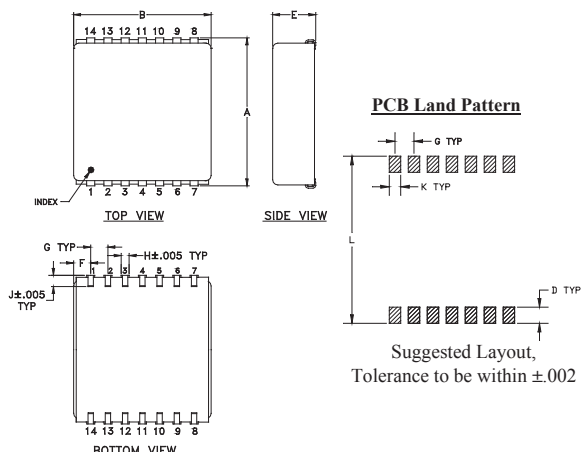
RF OUT	7
VCC	8
V-TUNE	1
GROUND	2,3,4,5,6,9,10,11,12,13,14

Maximum Ratings

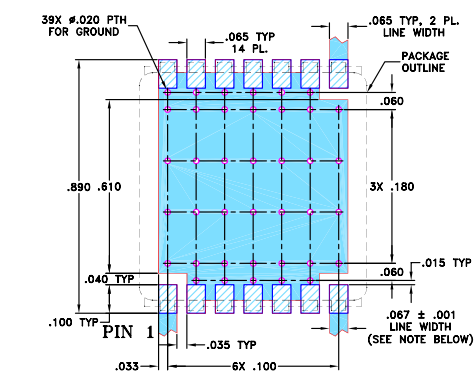
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+15V
Absolute Max. Tuning Voltage (Vtune)	+18V

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

Outline Drawing



Demo Board MCL PIN: TB-62
Suggested PCB Layout (PL-011)



- NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030 ± 0.002 ; 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.

Outline Dimensions (inch)

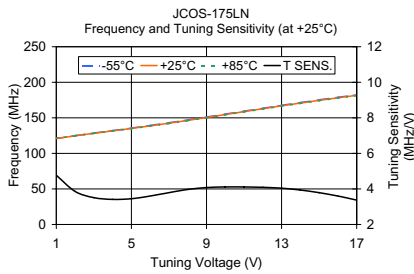
A	B	C	D	E	F	G	H	J	K	L	wt
.870	.800	--	.100	.400	.100	.100	.047	.065	.065	.890	grams
22.10	20.32	--	2.54	10.16	2.54	2.54	1.19	1.65	1.65	22.61	6.4

Notes

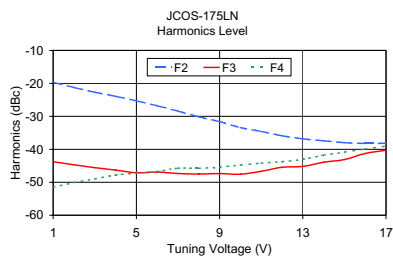
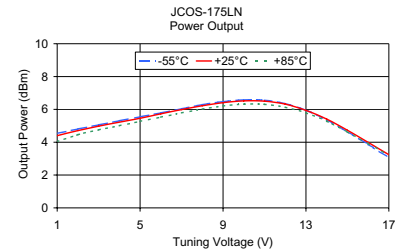
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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

Performance Curves

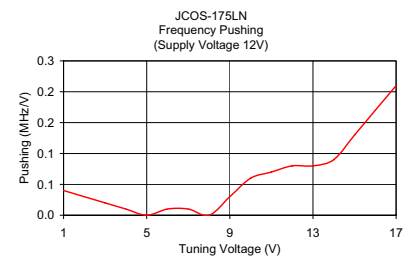
JCOS-175LN



V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
1.00	4.77	120.86	120.86	121.38	4.54	4.40	4.04
2.00	3.86	124.92	124.72	124.90	4.81	4.71	4.46
3.00	3.51	128.55	128.23	128.24	5.06	4.98	4.76
4.00	3.41	132.06	131.64	131.52	5.31	5.22	5.01
5.00	3.45	135.60	135.09	134.87	5.55	5.46	5.27
6.00	3.60	139.27	138.69	138.39	5.79	5.73	5.53
7.00	3.79	143.11	142.48	142.13	6.04	5.99	5.79
8.00	3.97	147.09	146.45	146.06	6.29	6.22	6.02
9.00	4.08	151.17	150.53	150.13	6.47	6.41	6.21
10.00	4.11	155.29	154.64	154.24	6.58	6.52	6.32
11.00	4.11	159.39	158.74	158.34	6.56	6.50	6.31
12.00	4.09	163.50	162.84	162.42	6.35	6.32	6.13
13.00	4.04	167.57	166.88	166.43	5.95	5.94	5.79
14.00	3.94	171.51	170.81	170.37	5.36	5.41	5.28
15.00	3.79	175.30	174.61	174.17	4.64	4.73	4.63
16.00	3.60	178.90	178.20	177.78	3.87	3.99	3.92
17.00	3.37	182.28	181.58	181.15	3.06	3.24	3.20



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
1.00	-19.69	-43.77	-51.50	0.04
2.00	-21.24	-44.70	-50.08	0.03
3.00	-22.68	-45.56	-48.98	0.02
4.00	-23.91	-46.31	-47.81	0.01
5.00	-25.29	-47.11	-47.24	0.00
6.00	-26.78	-46.91	-46.74	0.01
7.00	-28.43	-47.35	-45.73	0.01
8.00	-30.13	-47.51	-45.74	0.00
9.00	-31.61	-47.36	-45.40	0.03
10.00	-33.40	-47.55	-44.74	0.06
11.00	-34.55	-46.68	-44.18	0.07
12.00	-35.89	-45.46	-43.74	0.08
13.00	-36.83	-45.18	-43.04	0.08
14.00	-37.41	-43.92	-41.80	0.09
15.00	-37.98	-43.11	-40.84	0.13
16.00	-38.20	-41.26	-39.93	0.17
17.00	-38.17	-40.28	-38.99	0.21



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