Surface Mount

Voltage Controlled Oscillator

JCOS-175LN

Low Noise 125 to 175 MHz

CASE STYLE: BG419
PRICE: $ 49.95 ea QTY (1-9)

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

Electrical Specifications

FREQUENCY (MHz)		POWER OUTPUT (dBm)	TUNING VOLTAGE (V)		PHASE NOISE (dBc/Hz) SSB at offset frequencies: Typ.					PULLING pk-pk @ 12 dBr (MHz)	PUSHING (MHz/V)	TUNING SENSITIVITY (MHz/V)	HARMONICS (dBc)		3 dB MODULATION BANDWIDTH (MHz)	DC OPERATING POWER	
																Vcc (volts)	Current (mA)
Min.	Max.	Typ.	Min.	Max.	100 Hz	1 KHz	10 KHz	100 KHz	1 MHz	Typ.	Typ.	Typ.	Typ.	Max.	Typ.		Max.
125	175	+3.7	1	17	—	-95	-118	-138	-158	0.08	0.05	3-5	-25	-20	2.9	12	20

Pin Connections

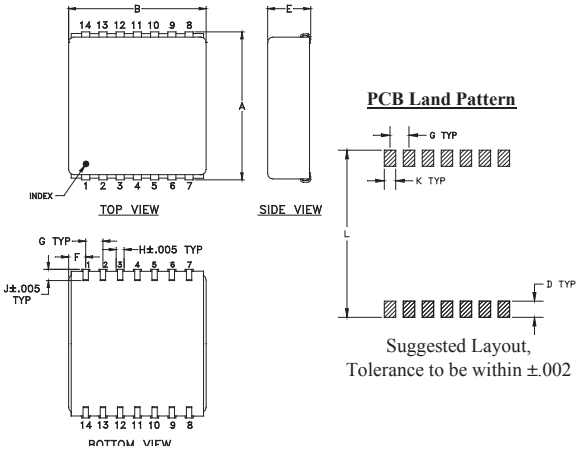
RF OUT	7
VCC	8
V-TUNE	1
GROUND	2,3,4,5,6,9,10,11,12,13,14

Maximum Ratings

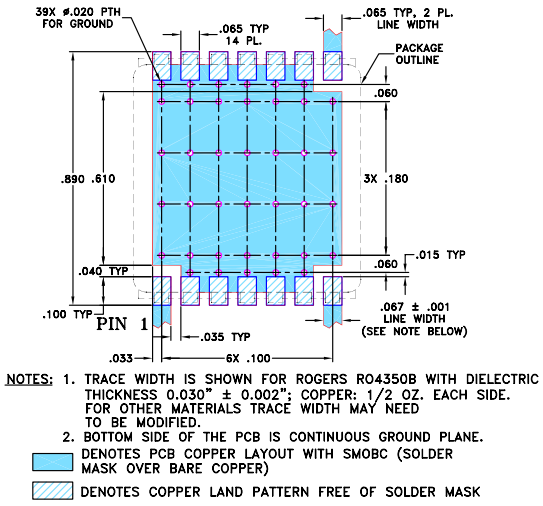
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+15V
Absolute Max. Tuning Voltage (Vtune)	+18V

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

Outline Drawing



Demo Board MCL P/N: 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.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

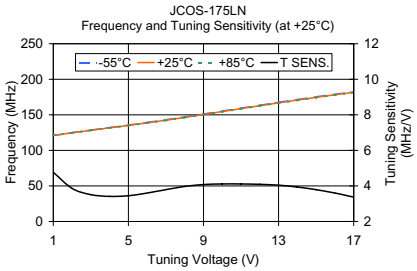
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch / mm)

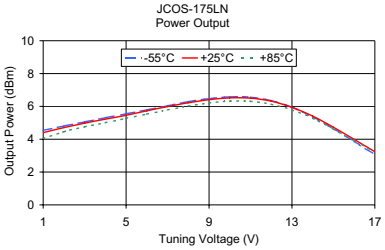
A	B	C	D	E	F	G	H	J	K	L	wt
.870	.800	--	.100	.400	.100	.100	.047	.065	.065	.890	grams
22.10	20.32	--	2.54	10.16	2.54	2.54	1.19	1.65	1.65	22.61	6.4

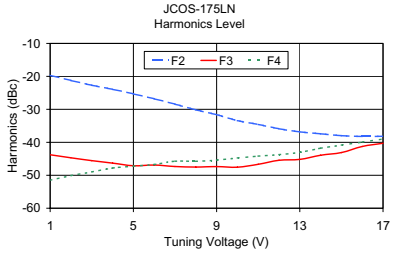
Performance Curves

JCOS-175LN

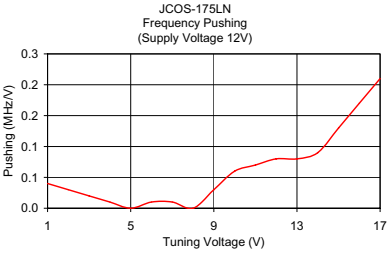


V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
1.00	4.77	120.86	120.86	121.38	4.54	4.40	4.04
2.00	3.86	124.92	124.72	124.90	4.81	4.71	4.46
3.00	3.51	128.55	128.23	128.24	5.06	4.98	4.76
4.00	3.41	132.06	131.64	131.52	5.31	5.22	5.01
5.00	3.45	135.60	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

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