

# Voltage Controlled Oscillator

## ROS-150+ ROS-150

### Linear Tuning 75 to 150 MHz

#### Features

- octave band tuning
- low phase noise, -103 dBc/Hz at 10 kHz typ.
- linear tuning, 4 - 6.8 MHz/V typ.
- excellent harmonic suppression, -23 dBc typ.
- aqueous washable

#### Applications

- test instruments-signal generators
- communication systems
- VHF



CASE STYLE: CK605

PRICE: \$12.95 ea. QTY (5-49)

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

See our web site for RoHS Compliance methodologies and qualifications.

#### Electrical Specifications

MODEL NO.	FREQ. (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.		Min.	Max.	1 kHz	10 kHz	100 kHz	1 MHz				Typ.	Max.		Vcc (volts)	Current (mA)
ROS-150(+)	75	150	+9.5	1	18	-80	-103	-127	-144	0.8	0.3	4.0-6.8	-23	-16	0.1	12	20

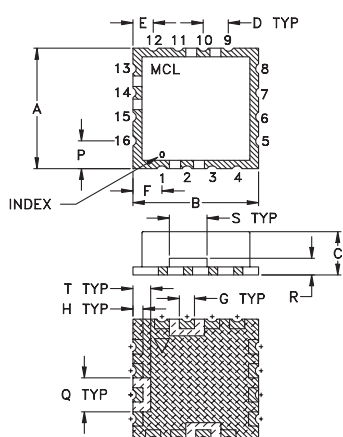
#### Pin Connections

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

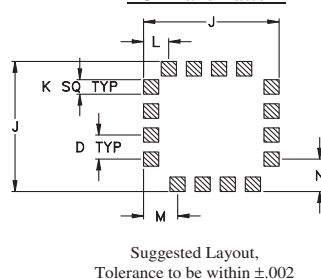
#### Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+13V
Absolute Max. Tuning Voltage (Vtune)	+18V
all specifications: 50 ohm system	

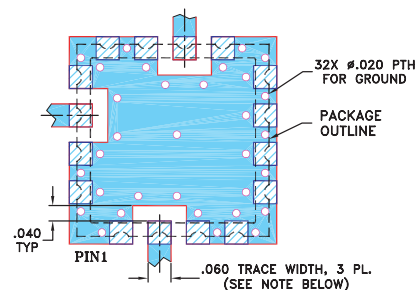
#### Outline Drawing



#### PCB Land Pattern



#### 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 PCB IS CONTINUOUS GROUND PLANE.

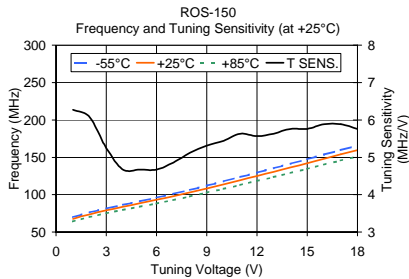
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
□ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

#### Outline Dimensions (inch)

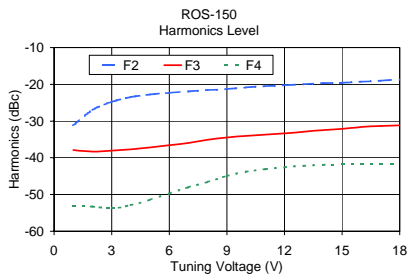
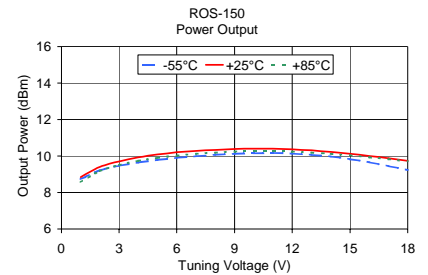
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060	.100	.135	.135	.115	.140	.070	.150	.070	grams
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72	1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0

# Performance Curves

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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	6.27	69.95	67.84	64.32	8.74	8.85	8.57
2.00	6.08	76.29	73.92	70.21	9.21	9.40	9.17
3.00	5.25	81.60	79.17	75.20	9.47	9.71	9.51
4.00	4.67	86.46	83.84	79.62	9.65	9.93	9.74
5.00	4.67	91.20	88.51	83.97	9.79	10.08	9.90
6.00	4.67	96.06	93.18	88.32	9.90	10.20	10.02
7.00	4.86	101.18	98.05	92.86	9.99	10.28	10.12
8.00	5.12	106.50	103.17	97.66	10.07	10.34	10.19
9.00	5.31	112.13	108.48	102.66	10.12	10.38	10.24
10.00	5.44	117.89	113.92	107.78	10.15	10.40	10.27
11.00	5.63	123.71	119.55	113.02	10.16	10.40	10.27
12.00	5.57	129.54	125.12	118.34	10.13	10.36	10.24
13.00	5.63	135.49	130.75	123.65	10.06	10.31	10.19
14.00	5.76	141.44	136.51	129.09	9.97	10.22	10.12
15.00	5.76	147.46	142.27	134.66	9.83	10.12	10.04
16.00	5.89	153.66	148.16	140.22	9.66	10.00	9.93
17.00	5.89	159.81	154.05	145.79	9.45	9.88	9.83
18.00	5.76	165.70	159.81	151.36	9.23	9.74	9.71



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
1.00	-31.19	-37.91	-53.23	0.26
2.00	-26.97	-38.30	-53.32	0.45
3.00	-24.80	-38.04	-53.83	0.38
4.00	-23.48	-37.71	-52.90	0.26
5.00	-22.75	-37.21	-51.42	0.32
6.00	-22.30	-36.62	-49.78	0.32
7.00	-21.90	-35.92	-48.03	0.32
8.00	-21.57	-35.15	-46.59	0.38
9.00	-21.29	-34.48	-44.97	0.38
10.00	-20.85	-34.03	-43.84	0.38
11.00	-20.46	-33.69	-43.10	0.45
12.00	-20.23	-33.33	-42.58	0.51
13.00	-19.98	-32.92	-42.18	0.45
14.00	-19.67	-32.49	-41.94	0.58
15.00	-19.55	-32.11	-41.82	0.51
16.00	-19.28	-31.64	-41.74	0.58
17.00	-18.99	-31.35	-41.81	0.77
18.00	-18.68	-31.15	-41.79	0.90

