

Surface Mount

# Voltage Controlled Oscillator

ROS-1150-519+

Wide Band 750 to 1150 MHz

## Features

- Linear tuning characteristics
- Low phase noise
- Low pushing
- Low pulling
- Aqueous washable

## Applications

- Lab
- Wireless communication



CASE STYLE: CK605

PRICE: \$24.95 ea. QTY (5-49)

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

*The +suffix has been added in order to identify 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 <sub>r</sub> (MHz)	PUSHING (MHz/V)	DC OPERATING POWER				
	Typ.	1		10	100	1000	VOLTAGE RANGE (V)		SENSI- TIVITY (MHz/V)		PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)		Typ.	Typ.			Max.	Typ.	Typ.	V <sub>cc</sub> (volts)	Current (mA)
							Min.	Max.	Typ.	Typ.	Typ.											
	Min.	Max.	Typ.					Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Typ.		Max.			
ROS-1150-519+	750	1150	+7	-78	-101	-121	-141	0.5	13.5	38	45	60	70	-90	-20	-12	2	2	5	35		

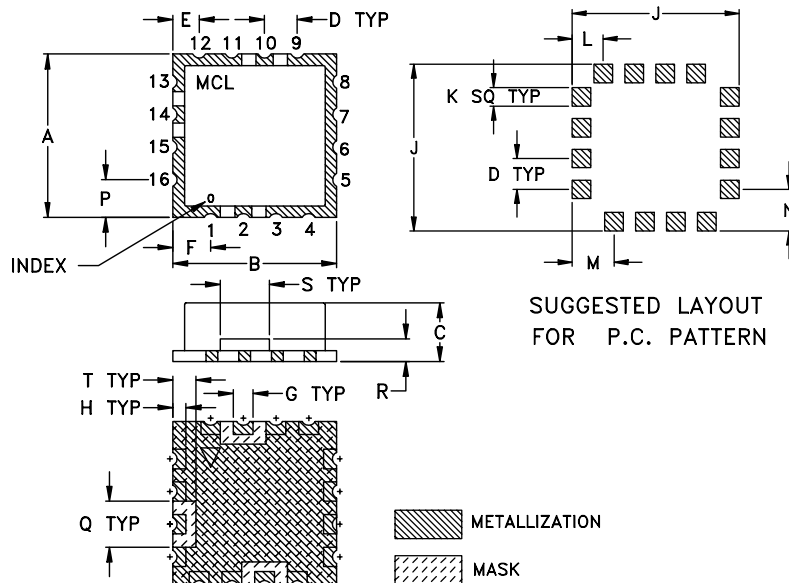
## Pin Connections

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

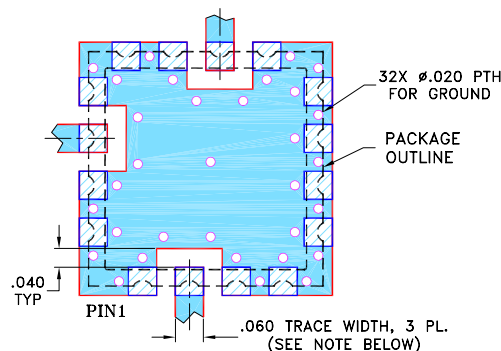
## Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	7V
Absolute Max. Tuning Voltage (Vtune)	16V
All specifications	50 ohm system

## 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 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

**Mini-Circuits®**

Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

Mini-Circuits ISO 9001 & ISO 14001 Certified

INTERNET <http://www.minicircuits.com>



REV. OR  
M105224  
EDR-7179  
ROS-1150-519+  
RAV  
060530  
page 1 of 2

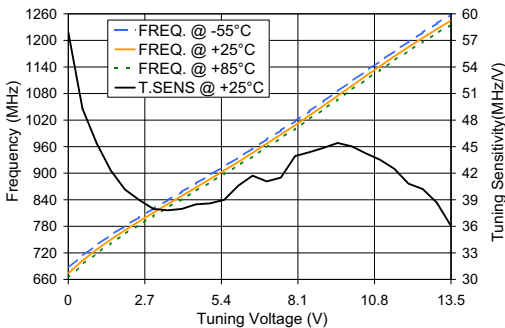
# Performance Data & Curves\*

# ROS-1150-519+

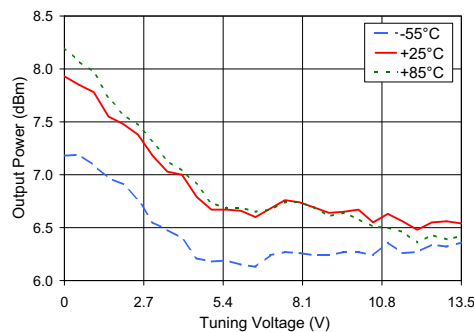
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 950 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1KHz	10KHz	100KHz	1MHz		
0.00	57.93	686.5	673.8	663.4	7.18	7.93	8.20	22.99	-22.6	-31.0	-52.2	0.38	2.46	-73.6	-97.0	-117.3	-135.8	1.0	-76.26
0.50	49.28	713.8	702.8	693.9	7.19	7.85	8.07	23.05	-21.7	-32.4	-56.9	0.46	1.88	-74.7	-97.9	-117.2	-136.8	2.0	-86.50
1.00	45.39	738.0	727.4	718.9	7.09	7.78	7.97	23.09	-21.2	-33.1	-58.9	0.57	1.57	-75.1	-97.8	-117.5	-136.9	3.4	-88.64
1.50	42.29	760.3	750.1	741.8	6.97	7.55	7.73	23.13	-21.0	-34.2	-59.1	0.66	1.85	-75.6	-98.4	-118.1	-138.7	5.7	-94.23
2.00	40.15	781.0	771.2	763.3	6.91	7.48	7.57	23.19	-20.5	-34.7	-58.0	0.71	1.83	-76.3	-99.3	-119.2	-138.2	8.1	-98.14
2.50	38.98	800.8	791.3	783.5	6.77	7.38	7.47	23.24	-20.5	-35.7	-56.0	0.81	1.43	-76.5	-98.5	-119.7	-138.4	10.0	-100.50
3.50	37.81	838.8	829.8	822.4	6.48	7.03	7.13	23.39	-20.2	-38.0	-54.4	0.83	1.07	-77.6	-99.9	-119.5	-141.0	19.6	-107.16
4.50	38.49	877.1	867.7	860.2	6.21	6.79	6.91	23.55	-19.9	-39.6	-54.0	0.90	1.92	-77.3	-100.3	-119.9	-141.8	33.3	-110.90
5.50	39.00	915.7	906.2	898.6	6.19	6.67	6.69	23.80	-19.4	-41.8	-54.0	1.00	1.39	-77.8	-100.9	-120.9	-141.1	57.2	-116.89
6.50	41.72	956.0	946.0	937.9	6.13	6.60	6.65	24.08	-19.5	-44.0	-52.0	1.18	1.07	-77.4	-100.8	-119.7	-141.2	81.8	-118.84
7.50	41.51	996.8	987.4	979.6	6.27	6.76	6.74	24.54	-19.8	-46.5	-46.0	1.57	1.99	-78.8	-102.5	-121.8	-140.7	100.0	-121.04
8.50	44.37	1040.0	1030.1	1022.2	6.24	6.69	6.69	24.99	-20.0	-46.6	-44.4	1.63	1.67	-78.4	-101.3	-123.0	-140.9	139.3	-124.00
9.50	45.42	1085.1	1074.8	1066.6	6.27	6.65	6.64	25.59	-20.3	-44.5	-42.4	1.47	1.27	-78.8	-102.6	-123.6	-142.4	167.3	-125.40
10.50	44.23	1130.9	1120.0	1111.5	6.24	6.55	6.51	26.27	-20.8	-40.9	-39.8	1.03	1.76	-77.9	-103.0	-125.1	-144.7	199.2	-126.90
11.00	43.51	1153.4	1142.1	1133.4	6.36	6.63	6.50	26.59	-20.9	-40.0	-38.2	0.69	1.80	-76.0	-101.4	-123.9	-144.6	284.8	-129.57
11.50	42.50	1175.7	1163.8	1155.1	6.26	6.56	6.46	26.90	-21.2	-38.8	-36.6	0.31	1.74	-74.1	-100.5	-123.7	-144.4	342.1	-133.35
12.00	40.82	1197.2	1185.1	1176.3	6.27	6.48	6.36	27.22	-21.4	-37.3	-34.8	0.01	1.29	-71.3	-97.8	-122.3	-142.6	489.1	-136.37
12.50	40.21	1218.0	1205.5	1196.7	6.34	6.55	6.43	27.46	-21.7	-36.1	-34.5	0.18	1.12	-70.7	-96.4	-120.8	-142.4	600.0	-136.12
13.00	38.67	1238.6	1225.6	1216.4	6.32	6.56	6.39	27.71	-22.2	-34.9	-34.0	0.17	1.52	-68.6	-94.6	-119.8	-141.5	832.6	-138.86
13.50	36.03	1258.5	1244.9	1235.6	6.36	6.54	6.42	28.04	-22.5	-33.6	-33.4	0.12	1.67	-66.6	-92.9	-117.3	-138.7	1000.0	-141.23

\*at 25°C unless mentioned otherwise

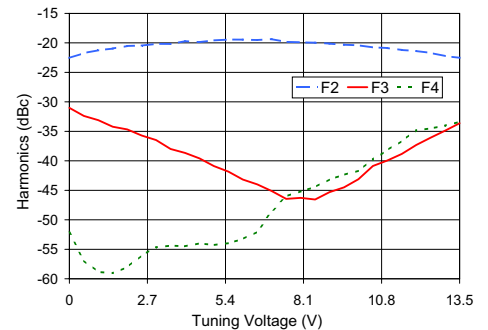
ROS-1150-519+  
Frequency and Tuning Sensitivity



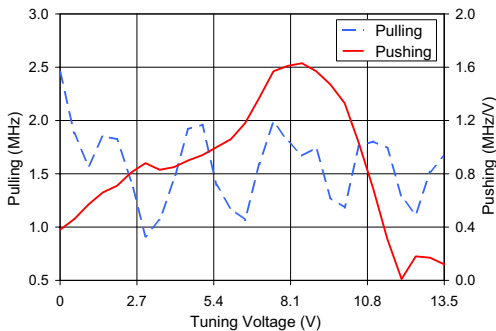
ROS-1150-519+  
Power Output



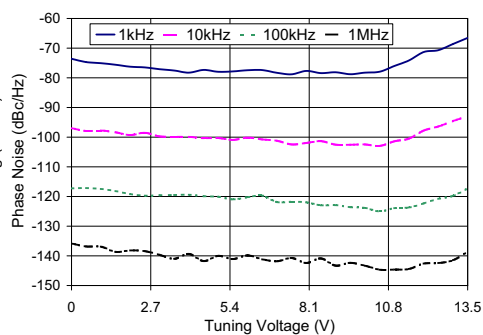
ROS-1150-519+  
Harmonics Level



ROS-1150-519+  
Frequency Pulling & Pushing (Vcc ± 5%)



ROS-1150-519+  
Phase Noise Vs. Tuning Voltage



ROS-1150-519+  
Phase Noise

