

Surface Mount

# Voltage Controlled Oscillator

# SOS-1000-519+

5V Tuning for PLL IC's 980 to 1050 MHz

## Features

- low phase noise
- linear tuning characteristics
- low pushing
- low pulling
- small size 0.3" x 0.3"
- aqueous washable

## Applications

- wireless communications
- GPS receiver



CASE STYLE: FZ990  
PRICE: \$ 20.60 ea. QTY (5-49)

**+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)	SENSI-TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)		Typ.	Typ.			Typ.	Typ.
SOS-1000-519+	980	1050	-6.3	-74	-99	-120	-140	0.5	3	57-60	23	335	-90	-35	-25	0.5	0.5	3	14

## Pin Connections

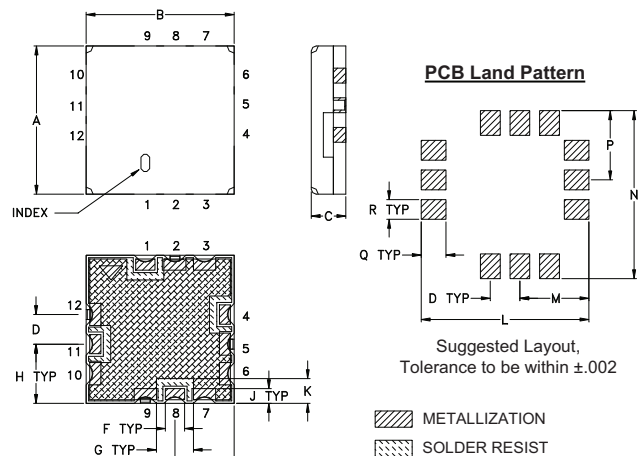
RF OUT	8
VCC	11
V-TUNE	1
GROUND	2,3,4,5,6,7,9,10,12

## Maximum Ratings

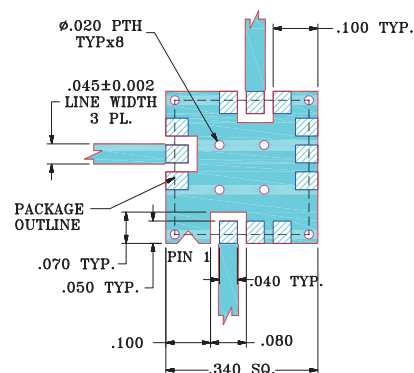
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	5V
Absolute Max. Tuning Voltage (Vtune)	4V
All specifications	50 ohm system

Permanent damage may occur if any of these limits are exceeded.

## Outline Drawing



**Demo Board MCL P/N: TB-271**  
**Suggested PCB Layout (PL-143)**



NOTE:

1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .025"±.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	wt.
.300	.300	.100	.060	.120	.039	.075	.120	.030	.050	.340	.140	.340	.140	.050	.040	grams
7.62	7.62	2.54	1.52	3.05	0.99	1.91	3.05	0.76	1.27	8.64	3.56	8.64	3.56	1.27	1.02	.25



For detailed performance specs & shopping online see web site

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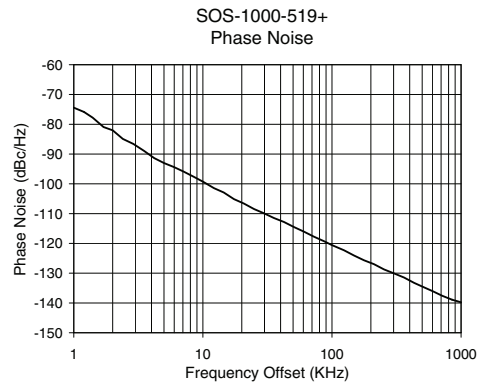
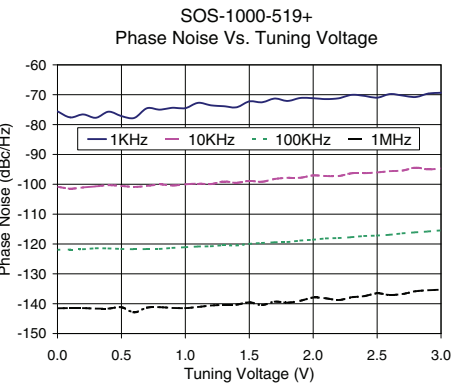
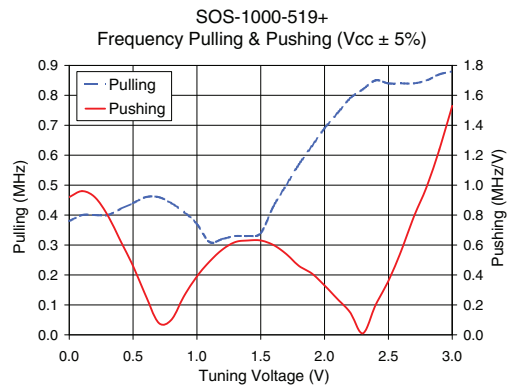
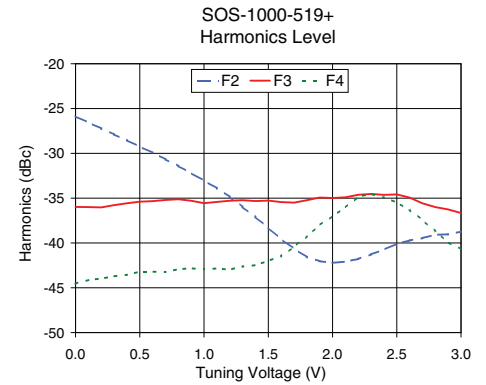
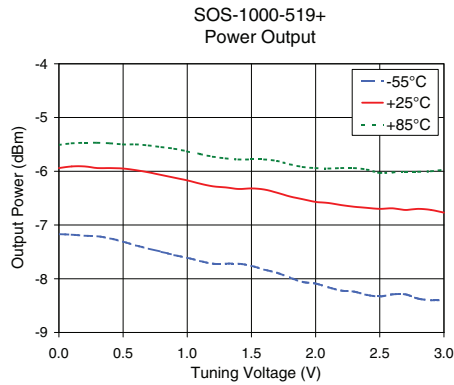
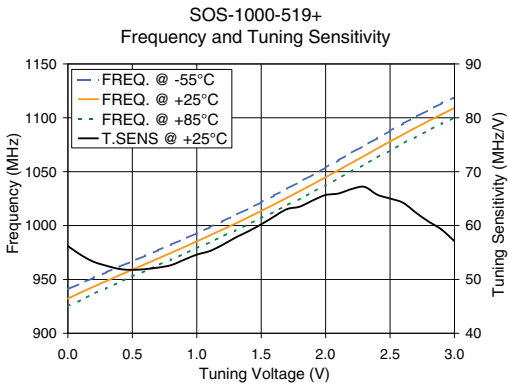
REV. OR  
M120661  
EDR-8437F1  
SOS-1000-519+  
RAV  
090908  
Page 1 of 2

# Performance Data & Curves\*

# SOS-1000-519+

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 1015 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	56.18	940.9	932.2	925.2	-7.17	-5.94	-5.51	8.43	-25.9	-36.0	-44.5	0.92	0.38	-75.6	-100.8	-121.9	-141.5	1.0	-74.41
0.10	54.55	946.3	937.8	931.0	-7.18	-5.91	-5.48	8.42	-26.6	-36.0	-44.1	0.96	0.40	-77.6	-101.5	-121.9	-141.5	2.0	-82.03
0.20	53.27	951.6	943.3	936.6	-7.20	-5.91	-5.47	8.40	-27.2	-36.0	-44.0	0.92	0.40	-76.6	-101.1	-121.8	-141.5	3.5	-88.93
0.30	52.53	956.7	948.6	942.1	-7.21	-5.94	-5.47	8.39	-27.9	-35.8	-43.7	0.80	0.40	-77.7	-100.7	-121.5	-141.6	6.0	-94.40
0.50	51.77	966.9	959.1	952.7	-7.31	-5.95	-5.50	8.36	-29.3	-35.4	-43.2	0.46	0.44	-77.2	-100.6	-121.7	-141.2	8.5	-97.63
0.60	51.91	972.0	964.3	958.0	-7.38	-5.98	-5.50	8.35	-29.9	-35.3	-43.2	0.26	0.46	-77.8	-100.9	-121.8	-142.9	10.0	-99.26
0.80	52.64	982.2	974.7	968.5	-7.50	-6.07	-5.55	8.32	-31.4	-35.1	-42.9	0.10	0.44	-75.0	-100.1	-121.6	-141.2	20.8	-106.63
1.00	54.60	992.9	985.3	979.0	-7.61	-6.17	-5.63	8.29	-33.0	-35.6	-42.9	0.39	0.37	-74.5	-100.0	-121.1	-141.5	35.5	-111.48
1.20	56.40	1004.0	996.3	989.9	-7.72	-6.28	-5.73	8.26	-34.9	-35.3	-43.0	0.57	0.32	-73.6	-100.0	-120.8	-140.6	60.7	-116.06
1.40	58.93	1015.6	1007.7	1001.2	-7.72	-6.33	-5.78	8.25	-37.1	-35.3	-42.5	0.63	0.33	-74.2	-99.5	-120.5	-140.3	86.7	-119.27
1.50	60.22	1021.6	1013.6	1006.9	-7.76	-6.32	-5.78	8.24	-38.3	-35.3	-42.0	0.63	0.34	-72.2	-98.9	-120.0	-139.5	100.0	-120.57
1.60	61.67	1027.8	1019.6	1012.8	-7.83	-6.34	-5.78	8.22	-39.6	-35.4	-41.5	0.60	0.43	-72.5	-99.1	-119.7	-140.5	148.1	-124.07
1.70	63.05	1034.1	1025.8	1018.8	-7.89	-6.40	-5.81	8.22	-40.6	-35.5	-40.4	0.54	0.50	-71.3	-98.2	-119.4	-139.3	211.6	-126.98
1.80	63.51	1040.6	1032.1	1024.9	-7.98	-6.47	-5.87	8.21	-41.6	-35.2	-39.3	0.46	0.57	-72.1	-97.8	-119.4	-139.7	253.0	-128.72
2.00	65.67	1053.8	1044.9	1037.4	-8.09	-6.57	-5.94	8.19	-42.2	-35.0	-37.0	0.33	0.69	-71.2	-97.0	-118.6	-137.9	302.4	-130.07
2.20	66.77	1067.4	1058.1	1050.2	-8.22	-6.63	-5.94	8.18	-41.8	-34.6	-34.8	0.15	0.79	-71.2	-97.3	-118.0	-138.8	361.5	-131.47
2.40	65.73	1081.1	1071.5	1063.2	-8.30	-6.68	-5.97	8.17	-40.8	-34.6	-34.9	0.20	0.85	-70.4	-96.3	-117.3	-137.5	507.5	-134.60
2.60	64.24	1094.5	1084.5	1076.0	-8.29	-6.69	-6.02	8.16	-39.7	-34.9	-36.3	0.56	0.84	-69.8	-95.6	-116.9	-137.1	606.7	-136.11
2.80	60.71	1107.2	1097.2	1088.5	-8.37	-6.70	-6.01	8.15	-39.1	-36.0	-38.7	0.99	0.85	-70.8	-94.4	-116.1	-135.8	851.6	-138.92
3.00	57.09	1119.2	1109.2	1100.2	-8.40	-6.77	-5.97	8.14	-38.7	-36.7	-40.7	1.53	0.88	-69.3	-94.7	-115.4	-135.3	1000.0	-139.78

\*at 25°C unless mentioned otherwise



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