

Surface Mount

# Voltage Controlled Oscillator

## SOS-1230-119+

5V Tuning for PLL IC's 1140 to 1230 MHz



### Features

- Low phase noise
- Low pushing
- Low pulling
- Aqueous washable

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

### Applications

- Wireless communications
- Defense system
- Radar & navigation system
- GPS

**+ 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 (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.	Vcc (volts)
SOS-1230-119+	1140	1230	+0.5	-76	-104	-125	-145	0.5	3	61	-97	24	90	-90	-17	-10	0.7	0.4	8	20

### Pin Connections

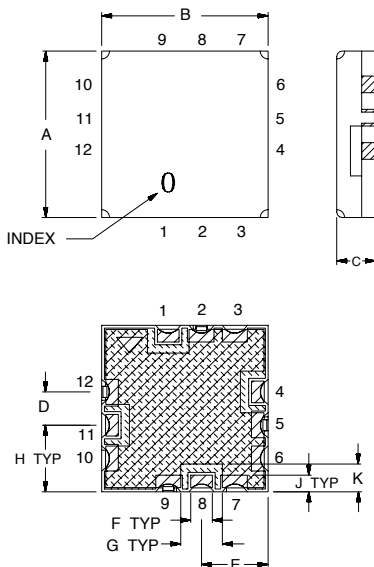
RF OUT	8
VCC	11
V-TUNE	1
GROUND	2,3,4,5,6,7,9,10,12

### Maximum Ratings

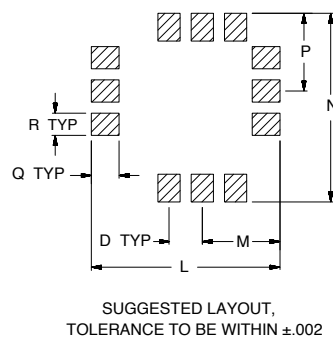
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	10V
Absolute Max. Tuning Voltage (Vtune)	5V
All specifications	50 ohm system

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

### Outline Drawing

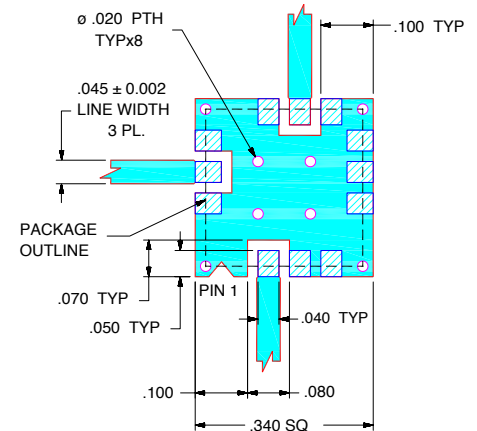


### PCB Land Pattern



METALLIZATION  
 SOLDER RESIST

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



#### NOTE:

1. TRACE WIDTH IS SHOWN FOR RF4 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. grams
.300	.300	.100	.060	.120	.039	.075	.120	.030	.050	.340	.140	.340	.140	.050	.040	0.25
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	

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IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

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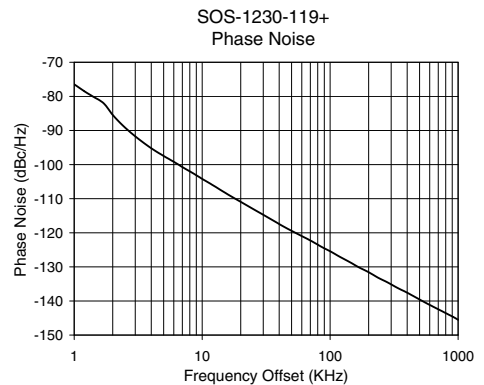
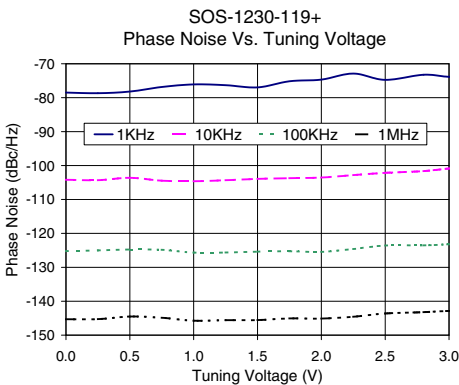
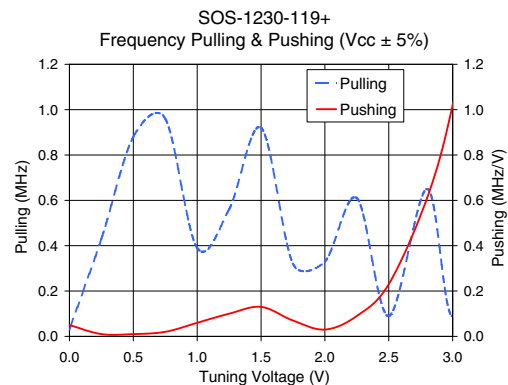
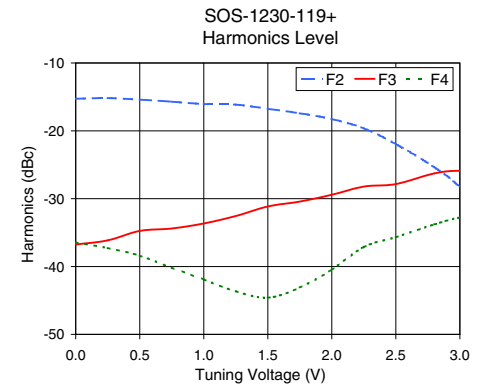
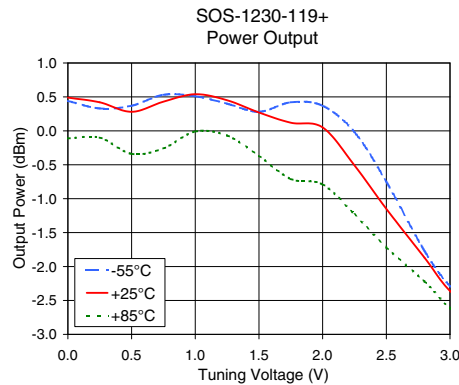
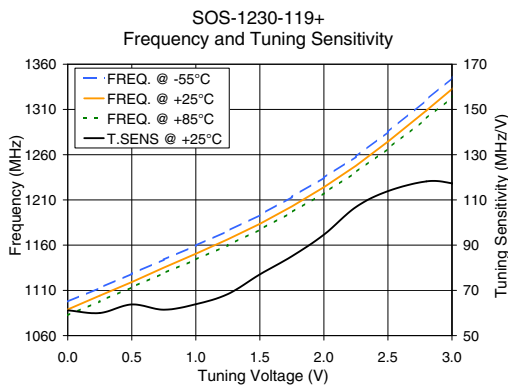
REV. OR  
M125861  
EDR-10004F1  
SOS-1230-119+  
RAV  
100214  
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# Performance Data & Curves\*

# SOS-1230-119+

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 1205 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	61.17	1097.6	1088.9	1082.4	0.44	0.49	-0.11	14.10	-15.3	-36.8	-36.5	0.05	0.03	-78.5	-104.2	-125.2	-145.3	1.0	-76.46
0.25	59.99	1112.6	1104.1	1097.9	0.33	0.42	-0.10	14.12	-15.2	-36.1	-37.3	0.01	0.43	-78.7	-104.3	-125.0	-145.3	3.5	-93.66
0.50	63.79	1128.4	1119.1	1113.3	0.37	0.28	-0.34	14.12	-15.4	-34.8	-38.4	0.01	0.88	-78.2	-103.6	-124.8	-144.5	5.0	-97.48
0.75	61.46	1144.0	1135.1	1129.1	0.53	0.43	-0.26	14.14	-15.7	-34.4	-40.2	0.02	0.96	-76.9	-104.5	-124.8	-144.9	10.0	-104.20
1.00	63.86	1159.5	1150.5	1144.1	0.51	0.54	-0.01	14.18	-16.1	-33.7	-41.9	0.06	0.39	-76.1	-104.6	-125.7	-145.7	35.5	-116.31
1.25	68.37	1175.8	1166.4	1159.9	0.40	0.45	-0.07	14.19	-16.1	-32.6	-43.7	0.10	0.56	-76.3	-104.3	-125.6	-145.6	50.7	-119.56
1.50	77.07	1193.3	1183.5	1177.1	0.28	0.27	-0.37	14.17	-16.8	-31.2	-44.6	0.13	0.92	-77.0	-104.0	-125.4	-145.6	100.0	-125.43
1.75	85.08	1213.3	1202.8	1196.5	0.42	0.12	-0.71	14.16	-17.4	-30.4	-43.1	0.07	0.32	-75.2	-103.7	-125.3	-145.1	142.9	-128.65
2.00	94.63	1234.5	1224.1	1217.5	0.37	0.05	-0.79	14.15	-18.3	-29.4	-40.5	0.03	0.33	-74.7	-103.5	-125.5	-145.1	235.6	-133.14
2.25	106.85	1257.8	1247.7	1240.8	-0.02	-0.51	-1.23	14.14	-19.6	-28.2	-37.1	0.09	0.61	-72.9	-102.8	-124.6	-144.6	330.7	-136.02
2.50	113.88	1285.1	1274.4	1266.6	-0.75	-1.15	-1.72	14.12	-22.0	-27.9	-35.7	0.23	0.09	-74.8	-102.2	-123.6	-143.6	464.2	-138.91
2.80	118.20	1320.6	1308.8	1300.1	-1.77	-1.87	-2.22	14.11	-25.4	-26.3	-33.8	0.61	0.65	-73.3	-101.6	-123.5	-143.2	914.6	-144.69
3.00	117.34	1344.7	1332.5	1323.3	-2.29	-2.36	-2.61	14.11	-28.4	-25.9	-32.8	1.02	0.09	-73.9	-100.9	-123.2	-142.9	1000.0	-145.53

\*at 25°C unless mentioned otherwise



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