

Surface Mount

# Voltage Controlled Oscillator

# MOS-1890-119+

5V Tuning for PLL IC's 1800 to 1890 MHz

### Features

- low phase noise
- low pulling
- low pushing
- aqueous washable

### Applications

- wireless communications
- personal communication systems
- video on demand system



CASE STYLE: CZ682

**+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.			Max.	Typ.	Max.
MOS-1890-119+	1800	1890	+4	-79	-105	-126	-146	0.5	5	38-46	30	100	-90	-22	-13	0.2	1.5	5	44

### Pin Connections

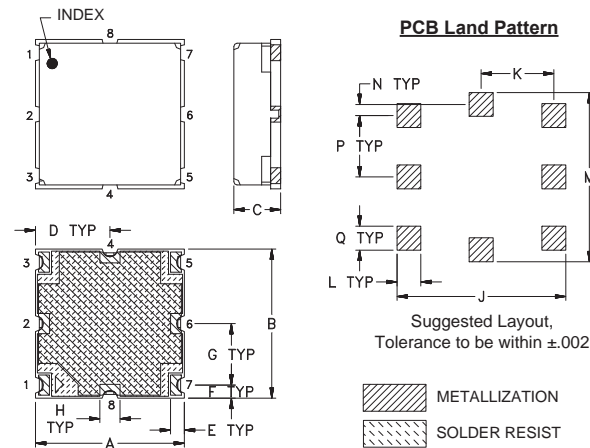
RF OUT	5
VCC	3
V-TUNE	1
GROUND	2,4,6,7,8

### Maximum Ratings

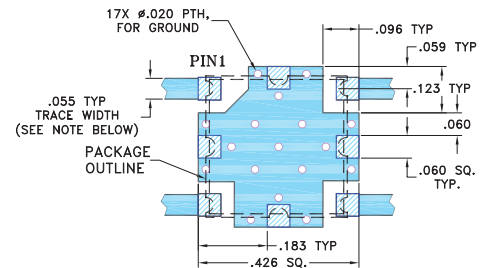
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	6V
Absolute Max. Tuning Voltage (Vtune)	7V
All specifications	50 ohm system

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

### Outline Drawing



### Demo Board MCL P/N: TB-128 Suggested PCB Layout (PL-023)



- NOTE: 1. TRACE WIDTH IS SHOWN FOR FR4 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	M	N	P	Q	wt. grams
.375	.375	.131	.188	.035	.033	.154	.050	.425	.183	.060	.425	.028	.154	.060	.60
9.52	9.52	3.33	4.77	0.89	0.84	3.91	1.27	10.80	4.65	1.52	10.80	0.71	3.91	1.52	.60

**Notes**

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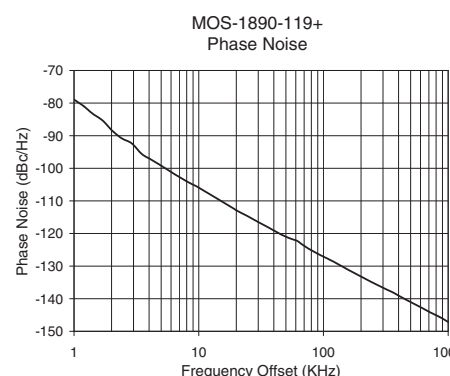
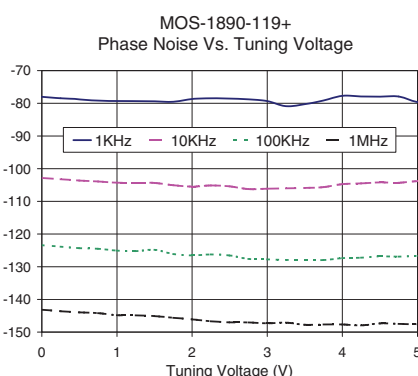
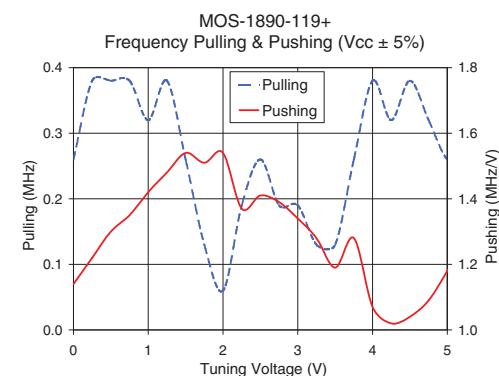
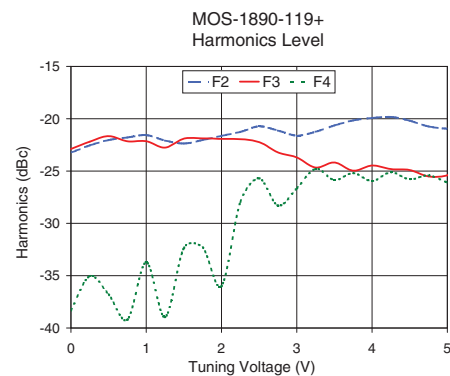
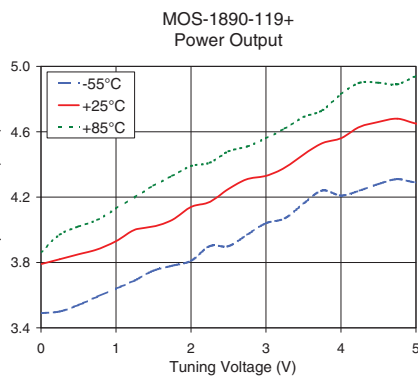
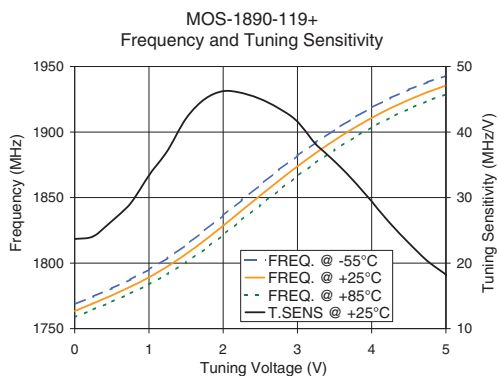
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# Performance Data & Curves\*

# MOS-1890-119+

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 1845 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	23.68	1768.6	1763.4	1758.7	3.49	3.79	3.86	34.19	-23.2	-22.9	-38.3	1.14	0.26	-78.0	-102.8	-123.4	-143.2	1.0	-78.93
0.50	26.43	1780.7	1775.3	1770.5	3.54	3.85	4.02	34.37	-22.0	-21.7	-36.8	1.30	0.38	-78.7	-103.6	-124.3	-144.0	2.0	-88.27
0.75	29.06	1787.5	1781.9	1776.8	3.59	3.88	4.06	34.46	-21.8	-22.2	-39.2	1.35	0.38	-79.2	-103.9	-124.5	-144.2	3.5	-95.62
1.00	33.39	1795.1	1789.2	1783.7	3.64	3.93	4.13	34.59	-21.6	-22.2	-33.7	1.42	0.32	-79.2	-104.3	-125.1	-144.8	6.0	-101.19
1.25	37.16	1803.8	1797.5	1791.6	3.69	4.00	4.20	34.71	-22.1	-22.8	-39.0	1.48	0.38	-79.4	-104.3	-125.2	-144.9	8.5	-104.54
1.50	42.07	1813.9	1806.8	1800.6	3.75	4.02	4.27	34.88	-22.4	-21.9	-32.4	1.54	0.26	-79.4	-104.4	-124.8	-145.1	10.0	-105.89
1.75	45.01	1824.8	1817.3	1810.7	3.78	4.06	4.33	35.05	-22.0	-21.9	-32.3	1.51	0.13	-79.5	-105.1	-126.1	-145.6	20.8	-113.23
2.00	46.24	1836.4	1828.6	1821.5	3.81	4.14	4.39	35.25	-21.6	-21.9	-36.0	1.54	0.06	-78.7	-105.5	-126.5	-146.1	35.5	-118.02
2.25	45.96	1848.1	1840.2	1833.0	3.90	4.17	4.41	35.43	-21.3	-22.0	-28.0	1.37	0.19	-78.5	-105.1	-126.2	-146.7	60.7	-122.13
2.50	45.05	1859.8	1851.6	1844.4	3.90	4.25	4.48	35.62	-20.7	-22.2	-25.7	1.41	0.26	-78.6	-105.4	-126.6	-147.0	86.7	-125.92
2.75	43.61	1871.1	1862.9	1855.6	3.97	4.31	4.51	35.86	-21.1	-23.2	-28.3	1.39	0.19	-78.8	-106.2	-127.6	-147.0	100.0	-127.07
3.00	41.60	1881.9	1873.8	1866.5	4.04	4.33	4.56	36.09	-21.6	-23.7	-26.7	1.34	0.19	-79.3	-106.1	-127.8	-147.3	148.1	-130.59
3.25	38.10	1892.2	1884.2	1876.7	4.07	4.38	4.62	36.31	-21.3	-24.7	-24.8	1.28	0.13	-80.9	-106.0	-127.9	-147.1	177.0	-132.11
3.50	35.55	1901.7	1893.7	1886.4	4.16	4.46	4.69	36.53	-20.6	-24.2	-25.9	1.19	0.13	-80.3	-105.9	-128.0	-147.8	211.6	-133.65
3.75	32.61	1910.6	1902.6	1895.5	4.24	4.53	4.73	36.77	-20.2	-25.0	-25.2	1.28	0.26	-79.1	-105.7	-128.0	-147.7	302.4	-136.76
4.00	29.42	1918.7	1910.8	1903.6	4.21	4.56	4.83	36.93	-19.9	-24.5	-26.0	1.07	0.38	-77.7	-104.7	-127.4	-147.7	361.5	-138.10
4.25	26.01	1925.9	1918.1	1911.1	4.24	4.63	4.90	37.14	-19.8	-24.8	-25.1	1.02	0.32	-77.9	-104.5	-127.3	-148.0	507.5	-141.08
4.50	23.10	1932.4	1924.6	1917.7	4.28	4.66	4.90	37.29	-20.2	-24.9	-25.8	1.04	0.38	-78.0	-104.2	-126.8	-147.3	606.7	-142.72
4.75	20.33	1938.0	1930.4	1923.7	4.31	4.68	4.89	37.47	-20.7	-25.5	-25.4	1.09	0.32	-77.9	-104.3	-126.9	-147.5	851.6	-145.57
5.00	18.23	1943.0	1935.5	1928.8	4.29	4.65	4.94	37.57	-20.9	-25.4	-26.1	1.18	0.26	-79.6	-103.8	-126.7	-147.6	1000.0	-147.13

\*at 25°C unless mentioned otherwise



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