

Voltage Controlled Oscillator

MOS-2220-119+

5V Tuning for PLL IC's 2060 to 2220 MHz

Features

- linear tuning characteristics
- low phase noise
- low pulling
- low pushing
- aqueous washable

Applications

- W-CDMA
- MW & MMW



CASE STYLE: CZ682

PRICE: \$ 20.45 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	
								VOLTAGE RANGE (V)	SENSITIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	Vcc (volts)						Current (mA)	
	Min.	Max.		Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.		Typ.	Typ.			Typ.	Max.
MOS-2220-119+	2060	2220	+1	-73	-99	-120	-140	0.5	5	55-79	20	50	-90	-35	-20	2.5	4	5	33

Pin Connections

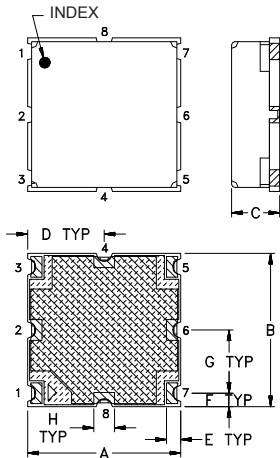
RF OUT	5
VCC	3
V-TUNE	1
GROUND	2,4,6,7,8

Maximum Ratings

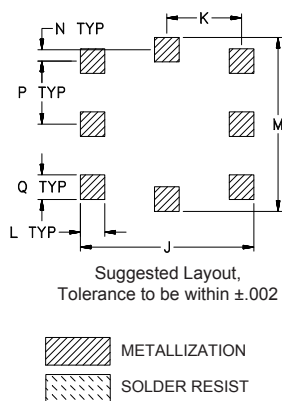
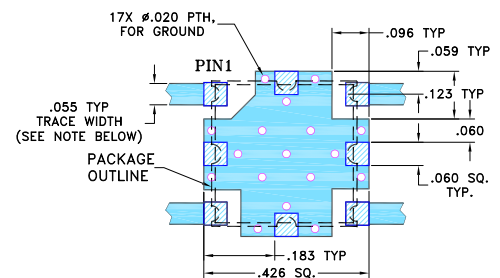
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	7V
Absolute Max. Tuning Voltage (Vtune)	7V
All specifications	50 ohm system

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

Outline Drawing



PCB Land Pattern

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.
.375	.375	.131	.188	.035	.033	.154	.050	.425	.183	.060	.425	.028	.154	.060	grams
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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- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

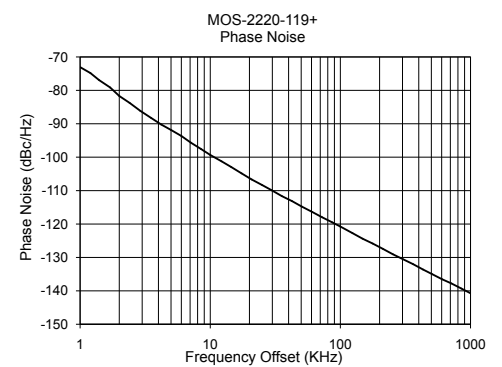
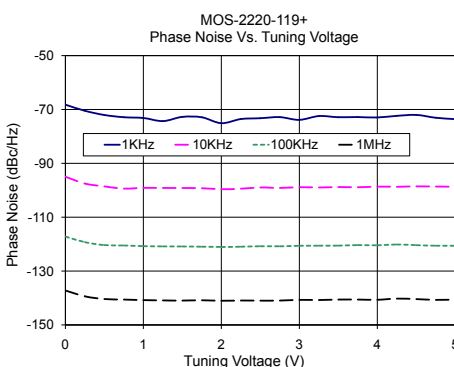
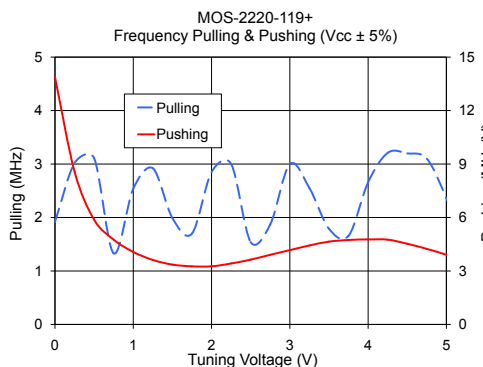
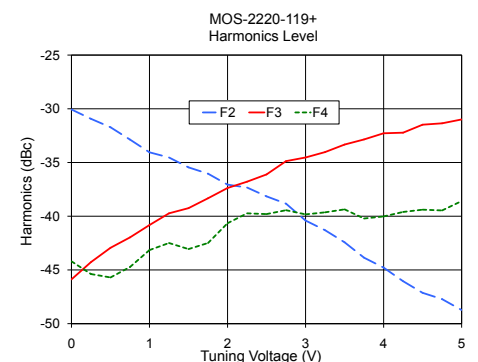
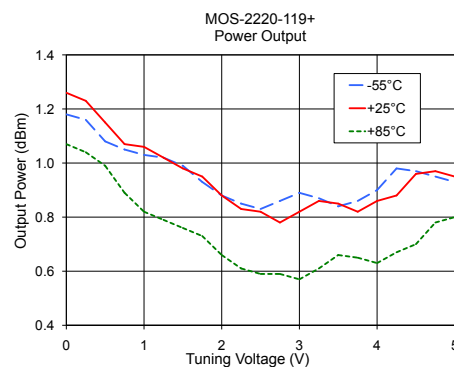
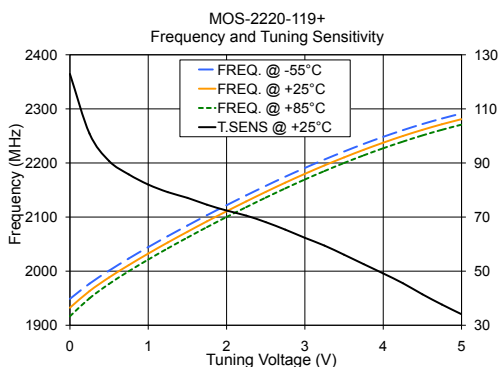


Performance Data & Curves*

MOS-2220-119+

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 2140 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	122.90	1948.8	1932.4	1916.6	1.18	1.26	1.07	26.93	-30.1	-45.9	-44.2	13.87	1.92	-68.21	-95.0	-117.2	-137.2	1.0	-73.03
0.50	90.73	2000.9	1988.4	1976.5	1.08	1.15	0.99	27.02	-31.7	-42.9	-45.7	5.88	3.11	-72.05	-98.6	-120.4	-140.4	2.0	-81.67
0.75	85.79	2023.2	2011.1	1999.8	1.05	1.07	0.89	27.04	-32.9	-42.0	-44.7	4.76	1.33	-72.88	-99.4	-120.5	-140.6	3.5	-88.21
1.00	82.03	2044.3	2032.5	2021.4	1.03	1.06	0.82	27.05	-34.1	-40.8	-43.2	4.07	2.54	-73.17	-99.1	-120.8	-140.8	6.0	-93.65
1.25	79.22	2064.6	2053.0	2042.1	1.02	1.02	0.79	27.07	-34.5	-39.7	-42.5	3.62	2.92	-74.31	-99.1	-120.9	-140.9	8.5	-97.56
1.50	77.09	2084.3	2072.8	2062.1	0.99	0.98	0.76	27.09	-35.5	-39.3	-43.1	3.36	1.99	-72.74	-99.2	-120.9	-141.0	10.0	-99.34
1.75	74.56	2103.4	2092.1	2081.4	0.93	0.95	0.73	27.11	-36.0	-38.3	-42.5	3.26	1.70	-72.89	-99.2	-120.9	-140.9	20.8	-106.67
2.00	72.40	2121.9	2110.7	2100.2	0.88	0.88	0.66	27.13	-37.1	-37.4	-40.7	3.26	2.85	-75.09	-99.6	-121.1	-141.0	35.5	-111.65
2.25	70.55	2140.0	2128.8	2118.3	0.85	0.83	0.61	27.14	-37.3	-36.8	-39.7	3.42	3.00	-73.56	-99.4	-121.0	-140.9	60.7	-116.38
2.50	68.12	2157.6	2146.5	2135.9	0.83	0.82	0.59	27.16	-38.2	-36.1	-39.8	3.64	1.54	-73.25	-99.0	-120.8	-141.0	86.7	-119.52
2.75	65.34	2174.5	2163.5	2153.0	0.86	0.78	0.59	27.18	-38.8	-34.9	-39.4	3.91	1.87	-72.84	-99.1	-120.8	-141.0	100.0	-120.76
3.00	62.33	2190.8	2179.8	2169.4	0.89	0.82	0.57	27.21	-40.4	-34.5	-39.8	4.17	3.00	-73.85	-98.9	-120.6	-140.7	148.1	-124.38
3.25	59.46	2206.4	2195.4	2185.1	0.87	0.86	0.61	27.24	-41.3	-34.0	-39.6	4.43	2.55	-72.44	-99.0	-120.6	-140.7	177.0	-125.85
3.50	56.07	2221.2	2210.3	2199.9	0.84	0.85	0.66	27.27	-42.4	-33.3	-39.4	4.65	1.79	-72.88	-98.8	-120.6	-140.6	211.6	-127.41
3.75	52.58	2235.1	2224.3	2214.0	0.86	0.82	0.65	27.30	-43.9	-32.9	-40.2	4.74	1.66	-72.81	-98.9	-120.4	-140.6	302.4	-130.52
4.00	49.14	2248.3	2237.5	2227.2	0.90	0.86	0.63	27.34	-44.8	-32.3	-40.0	4.77	2.66	-72.96	-98.6	-120.4	-140.7	361.5	-132.00
4.25	45.55	2260.6	2249.7	2239.4	0.98	0.88	0.67	27.36	-46.1	-32.2	-39.6	4.76	3.21	-72.36	-98.7	-120.1	-140.2	507.5	-135.02
4.50	41.44	2271.8	2261.1	2250.8	0.97	0.96	0.70	27.40	-47.1	-31.5	-39.4	4.53	3.20	-72.02	-98.5	-120.4	-140.4	606.7	-136.57
4.75	37.63	2282.1	2271.5	2261.3	0.95	0.97	0.78	27.43	-47.7	-31.4	-39.5	4.24	3.10	-73.07	-98.6	-120.6	-140.7	851.6	-139.32
5.00	34.07	2291.5	2280.9	2270.8	0.93	0.95	0.80	27.45	-48.7	-31.0	-38.6	3.91	2.36	-73.57	-98.7	-120.6	-140.6	1000.0	-140.74

*at 25°C unless mentioned otherwise



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