

# NON-CATALOG

Surface Mount

# Voltage Controlled Oscillator

# MOS-2416-119+

5V Tuning for PLL IC's 2346 to 2416 MHz



CASE STYLE: CZ682

## Features

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

## Applications

- wireless communications
- test equipment

**+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.
MOS-2416-119+	2346	2416	-0.3	-73	-101	-122	-142	0.5	4.5	57-62	2	75	-90	-25	-15	0.9	1.6	5	40

## Pin Connections

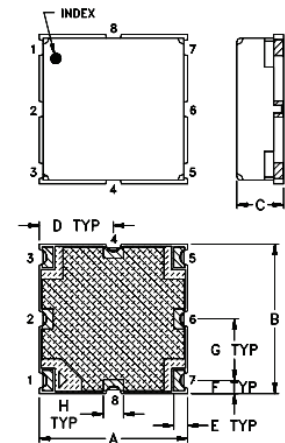
RF OUT	5
VCC	3
V-TUNE	1
GROUND	2,4,6,7,8

## Maximum Ratings

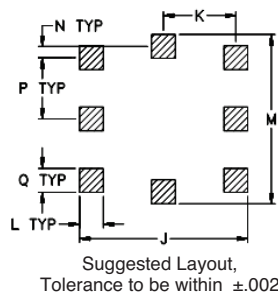
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	5.5V
Absolute Max. Tuning Voltage (Vtune)	7.0V
All specifications	50 ohm system

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

## Outline Drawing

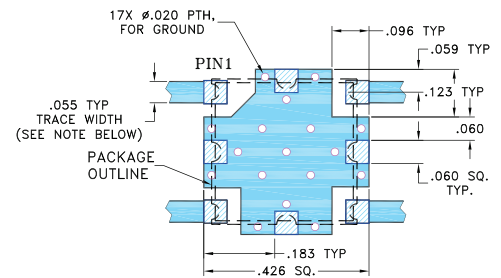


## PCB Land Pattern



METALLIZATION  
 SOLDER RESIST

## Demo Board MCL P/N: TB-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

ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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REV. B  
 M137599  
 EDR-9184F1  
 MOS-2416-119+  
 RAV  
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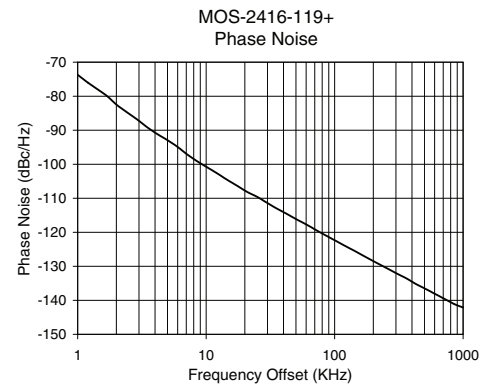
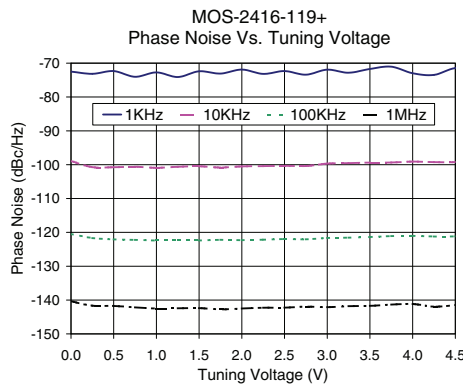
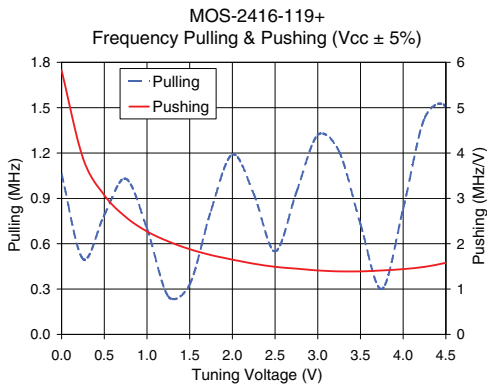
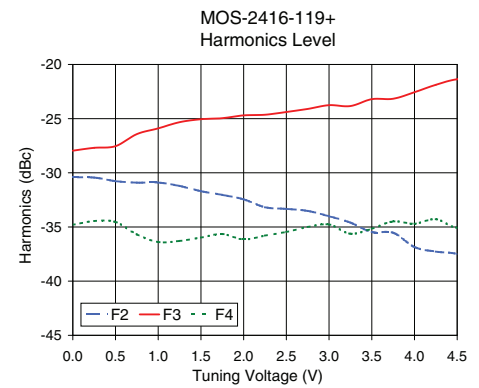
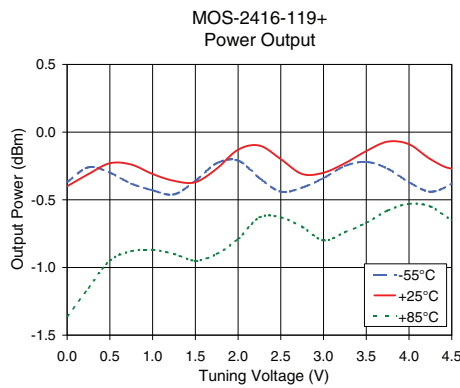
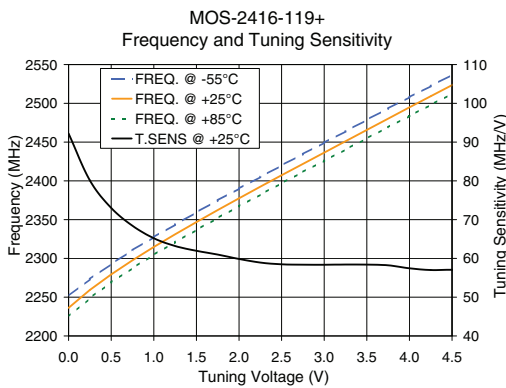
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## Performance Data & Curves\*

## MOS-2416-119+

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 2381 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	92.20	2251.5	2236.3	2225.0	-0.37	-0.40	-1.36	31.86	-30.4	-28.0	-34.8	5.82	1.06	-72.5	-98.9	-120.5	-140.4	1.0	-73.70
0.25	80.12	2273.3	2259.3	2248.7	-0.26	-0.31	-1.15	31.89	-30.4	-27.7	-34.5	3.89	0.50	-73.2	-100.7	-121.7	-141.7	2.0	-82.46
0.50	73.01	2292.7	2279.4	2269.0	-0.30	-0.23	-0.95	31.91	-30.8	-27.5	-34.5	3.07	0.79	-72.3	-100.8	-122.1	-141.7	3.5	-89.21
0.75	68.43	2310.6	2297.6	2287.4	-0.38	-0.24	-0.88	31.94	-30.9	-26.4	-35.7	2.59	1.03	-74.0	-100.6	-122.2	-142.2	6.0	-94.93
1.00	65.19	2327.4	2314.7	2304.6	-0.43	-0.31	-0.87	31.96	-30.9	-25.9	-36.4	2.27	0.70	-72.7	-100.9	-122.4	-142.5	8.5	-99.11
1.25	63.20	2343.6	2331.0	2321.0	-0.46	-0.36	-0.90	31.98	-31.2	-25.3	-36.3	2.05	0.25	-74.1	-100.6	-122.4	-142.4	10.0	-100.73
1.50	61.96	2359.4	2346.8	2336.7	-0.36	-0.37	-0.95	32.00	-31.7	-25.1	-36.0	1.88	0.33	-72.4	-100.5	-122.4	-142.4	20.8	-108.11
1.75	60.98	2374.9	2362.3	2352.1	-0.23	-0.27	-0.90	32.01	-32.0	-25.0	-35.7	1.75	0.82	-73.1	-100.8	-122.2	-142.8	35.5	-113.03
2.00	59.86	2390.1	2377.6	2367.3	-0.21	-0.13	-0.79	32.03	-32.5	-24.7	-36.2	1.65	1.19	-71.9	-100.5	-122.3	-142.5	60.7	-117.78
2.25	58.93	2405.0	2392.5	2382.2	-0.34	-0.10	-0.63	32.05	-33.2	-24.6	-35.8	1.56	0.93	-73.2	-100.4	-122.2	-142.3	86.7	-121.06
2.50	58.49	2419.8	2407.3	2396.9	-0.44	-0.20	-0.63	32.07	-33.3	-24.4	-35.5	1.49	0.55	-72.3	-100.3	-122.0	-142.2	100.0	-122.34
2.75	58.39	2434.5	2421.9	2411.4	-0.41	-0.31	-0.70	32.09	-33.5	-24.1	-35.0	1.45	0.94	-73.4	-100.4	-122.1	-142.0	148.1	-125.78
3.00	58.36	2449.2	2436.5	2425.9	-0.34	-0.30	-0.80	32.10	-34.0	-23.8	-34.8	1.41	1.32	-71.9	-99.7	-121.7	-142.1	211.6	-128.96
3.25	58.43	2463.9	2451.1	2440.3	-0.25	-0.23	-0.74	32.11	-34.6	-23.8	-35.6	1.39	1.21	-72.8	-99.5	-121.6	-141.8	302.4	-132.06
3.50	58.41	2478.6	2465.7	2454.8	-0.22	-0.14	-0.67	32.13	-35.5	-23.2	-35.2	1.39	0.73	-71.7	-99.4	-121.4	-141.7	361.5	-133.55
3.75	58.23	2493.4	2480.3	2469.3	-0.27	-0.07	-0.58	32.15	-35.5	-23.2	-34.5	1.41	0.30	-71.0	-99.4	-121.1	-141.4	507.5	-136.60
4.00	57.45	2507.9	2494.8	2483.7	-0.37	-0.09	-0.53	32.16	-36.9	-22.6	-34.7	1.44	0.83	-73.0	-99.1	-121.0	-141.2	606.7	-138.14
4.25	57.00	2522.3	2509.2	2498.0	-0.44	-0.20	-0.55	32.18	-37.3	-21.9	-34.3	1.49	1.43	-73.5	-99.2	-121.2	-141.9	851.6	-141.09
4.50	57.06	2536.8	2523.4	2512.2	-0.38	-0.27	-0.65	32.19	-37.5	-21.4	-35.1	1.58	1.50	-71.5	-99.2	-121.2	-141.5	1000.0	-142.12

\*at 25°C unless mentioned otherwise



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