

NON-CATALOG

Surface Mount

Voltage Controlled Oscillator

MOS-1400-119+

5V Tuning for PLL IC's 1395 to 1400 MHz



CASE STYLE: CZ682

Features

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

Applications

- wireless communications
- industrial microwave

+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)	SENSITIVITY (MHz/V)	PORT CAP (pF)		3 dB MODULATION BANDWIDTH (MHz)	Typ.			Typ.	Max.	Typ.
MOS-1400-119+	1395	1400	-6.5	-82	-105	-125	-145	0.8	2.8	31	40	40	-90	-18	-10	0.5	1.5	3	18

Pin Connections

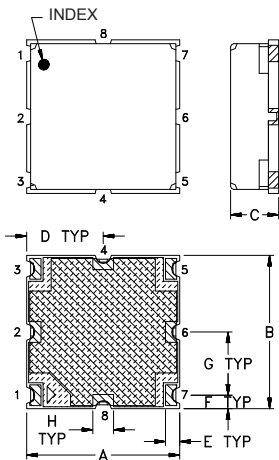
RF OUT	5
VCC	3
V-TUNE	1
GROUND	2,4,6,7,8

Maximum Ratings

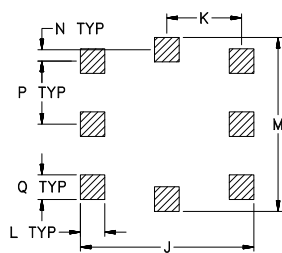
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	5V
Absolute Max. Tuning Voltage (Vtune)	5V
All specifications	50 ohm system

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

Outline Drawing



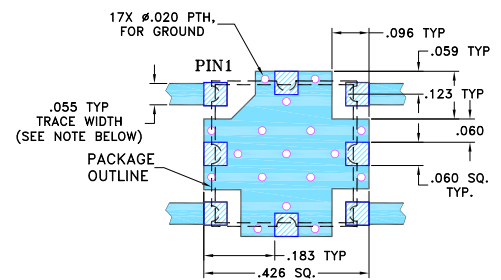
PCB Land Pattern



Suggested Layout, Tolerance to be within ±.002

- 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

Notes

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RAV
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NON-CATALOG

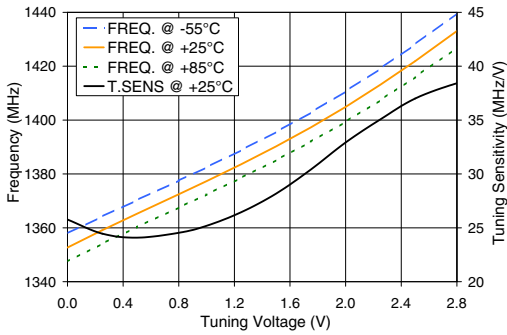
Performance Data & Curves*

MOS-1400-119+

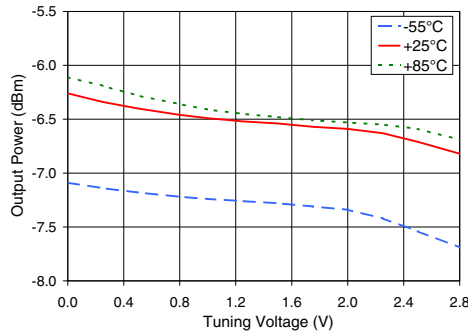
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 1398 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	25.77	1358.0	1352.7	1347.5	-7.09	-6.26	-6.11	12.04	-18.0	-23.1	-33.8	0.89	0.46	-82.4	-105.5	-125.9	-143.3	1.0	-81.24
0.25	24.46	1364.2	1359.1	1354.1	-7.14	-6.34	-6.19	12.05	-17.7	-22.7	-34.5	0.89	0.51	-82.9	-105.7	-126.2	-145.9	3.5	-95.51
0.50	24.09	1370.3	1365.2	1360.3	-7.18	-6.40	-6.28	12.05	-17.6	-22.7	-33.8	0.89	0.57	-82.9	-105.9	-126.2	-146.0	6.0	-100.43
0.80	24.54	1377.5	1372.5	1367.5	-7.22	-6.46	-6.36	12.06	-17.7	-22.7	-33.1	0.91	0.58	-82.9	-105.7	-126.0	-146.4	8.5	-103.68
1.00	25.18	1382.4	1377.3	1372.4	-7.24	-6.49	-6.41	12.06	-17.8	-22.5	-33.0	0.94	0.55	-83.1	-105.7	-126.3	-146.4	10.0	-105.04
1.25	26.46	1388.8	1383.6	1378.6	-7.26	-6.52	-6.45	12.07	-18.1	-22.0	-32.8	0.98	0.48	-83.1	-105.5	-126.1	-146.2	35.5	-116.61
1.50	28.18	1395.6	1390.2	1385.1	-7.28	-6.54	-6.48	12.08	-18.4	-21.6	-32.9	1.05	0.37	-81.5	-105.5	-126.0	-146.7	60.7	-121.23
1.75	30.41	1402.8	1397.3	1392.0	-7.31	-6.57	-6.51	12.08	-18.4	-21.5	-32.2	1.15	0.22	-81.9	-105.4	-125.9	-146.0	86.7	-124.58
2.00	32.92	1410.7	1404.9	1399.4	-7.34	-6.59	-6.53	12.09	-18.7	-21.5	-31.7	1.27	0.19	-81.8	-105.1	-125.7	-146.5	100.0	-125.83
2.25	35.06	1419.1	1413.1	1407.4	-7.42	-6.63	-6.55	12.10	-19.1	-20.8	-32.6	1.41	0.37	-81.2	-105.0	-125.6	-145.6	302.4	-135.28
2.50	37.00	1428.1	1421.9	1416.0	-7.54	-6.71	-6.59	12.11	-19.6	-20.3	-32.2	1.48	0.49	-81.0	-104.8	-125.3	-146.2	507.5	-140.33
2.80	38.41	1439.6	1433.1	1426.9	-7.69	-6.82	-6.69	12.12	-20.2	-20.0	-32.1	1.45	0.48	-80.2	-104.7	-125.0	-145.6	1000.0	-146.67

*at 25°C unless mentioned otherwise

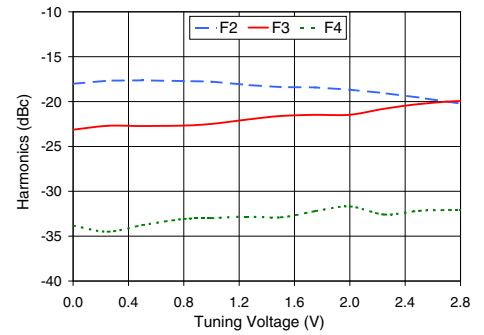
MOS-1400-119+
Frequency and Tuning Sensitivity



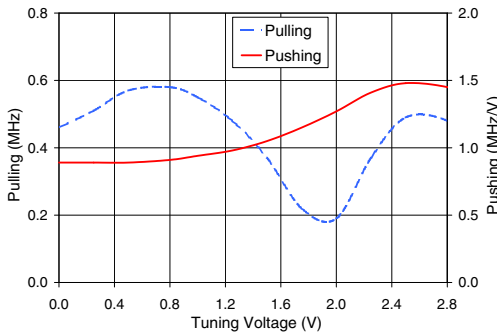
MOS-1400-119+
Power Output



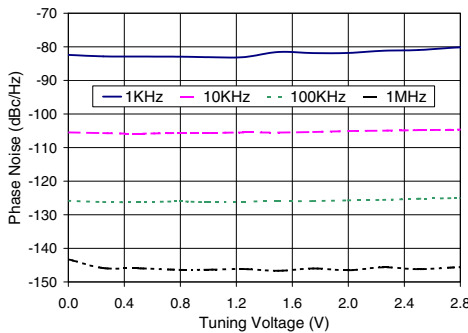
MOS-1400-119+
Harmonics Level



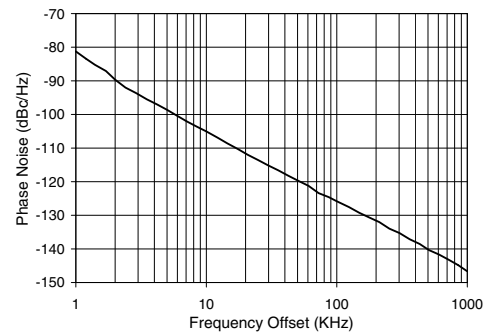
MOS-1400-119+
Frequency Pulling & Pushing (Vcc ± 5%)



MOS-1400-119+
Phase Noise Vs. Tuning Voltage



MOS-1400-119+
Phase Noise



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