

# Surface Mount Voltage Controlled Oscillator

# MOS-114+

Wide Band 57 to 114 MHz

## Features

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

## Applications

- television
- radio FM
- mobile radio services
- safety warning systems



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.	Typ.			Typ.	Typ.
MOS-114+	57	114	+7	-85	-110	-131	-152	0.5	14	6	-	0.055	-90	-12	-	0.3	0.1	15	22

## Pin Connections

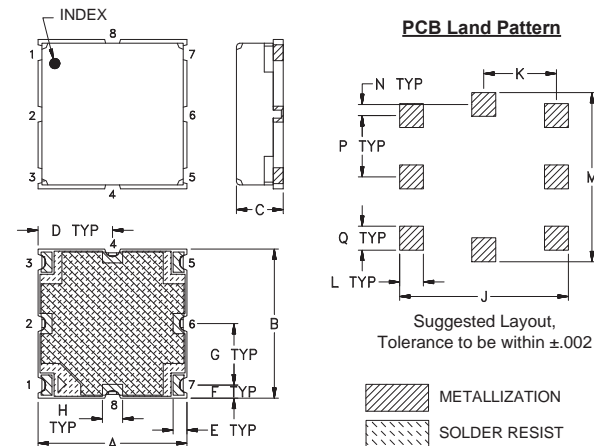
RF OUT	5
VCC	3
V-TUNE	1
GROUND	2,4,6,7,8

## Maximum Ratings

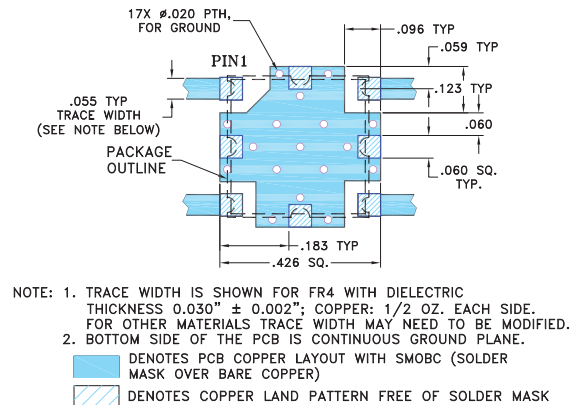
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	17V
Absolute Max. Tuning Voltage (Vtune)	16V
All specifications	50 ohm system

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.

## 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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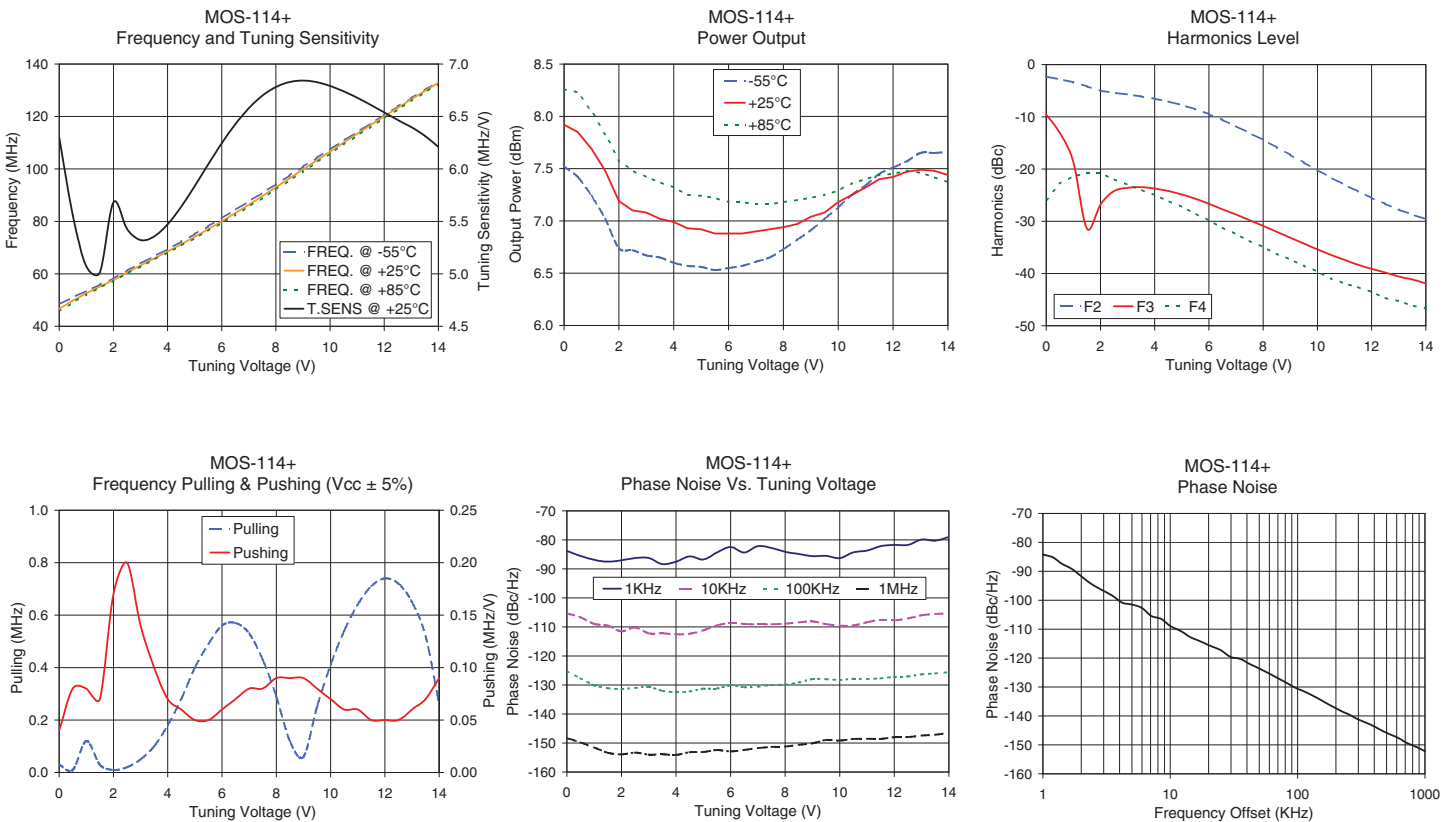
REV. C  
M151108  
EDR-7913  
MOS-114+  
RAV  
150512  
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# Performance Data & Curves\*

# MOS-114+

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 86 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	6.30	48.4	46.7	45.6	7.52	7.92	8.26	18.29	-2.3	-9.6	-25.9	0.04	0.03	-83.8	-105.3	-125.2	-148.3	1.0	-84.21
0.50	5.56	51.0	49.8	49.1	7.42	7.85	8.23	18.23	-2.8	-13.1	-22.8	0.08	0.01	-85.5	-106.7	-127.7	-149.8	2.0	-91.74
1.00	5.07	53.5	52.6	52.1	7.24	7.69	8.05	18.14	-3.4	-18.7	-21.4	0.08	0.12	-86.8	-109.0	-130.1	-151.5	3.5	-98.39
2.00	5.68	58.3	57.6	57.3	6.74	7.19	7.58	17.84	-5.0	-26.8	-20.8	0.17	0.01	-87.1	-111.5	-131.4	-153.9	6.0	-102.69
3.00	5.32	64.0	63.2	62.8	6.67	7.08	7.42	17.60	-5.7	-23.6	-23.0	0.14	0.05	-86.3	-112.2	-130.6	-154.0	8.5	-106.46
4.00	5.47	69.4	68.5	68.1	6.60	6.99	7.32	17.42	-6.5	-23.7	-25.0	0.07	0.18	-87.5	-112.5	-132.5	-154.1	10.0	-108.92
5.00	5.84	75.1	74.1	73.6	6.56	6.92	7.24	17.27	-7.7	-24.9	-27.3	0.05	0.40	-86.8	-111.2	-131.3	-153.1	20.8	-115.85
6.00	6.25	81.2	80.0	79.4	6.55	6.88	7.18	17.14	-9.5	-26.7	-29.9	0.06	0.56	-82.5	-108.6	-130.2	-152.9	35.5	-120.28
6.50	6.43	84.4	83.2	82.5	6.57	6.88	7.18	17.08	-10.6	-27.7	-31.2	0.07	0.57	-84.4	-109.0	-130.8	-152.4	60.7	-125.39
7.00	6.58	87.6	86.4	85.7	6.61	6.90	7.16	17.03	-11.8	-28.7	-32.5	0.08	0.53	-82.2	-109.1	-130.6	-151.8	86.7	-129.23
8.00	6.78	94.2	93.0	92.2	6.73	6.94	7.18	16.97	-14.4	-30.9	-34.9	0.09	0.29	-84.1	-108.9	-129.9	-151.2	100.0	-130.62
9.00	6.84	100.8	99.8	99.0	6.91	7.04	7.22	16.92	-17.3	-33.1	-37.3	0.09	0.06	-85.6	-108.1	-128.0	-150.1	148.1	-134.31
10.00	6.79	107.5	106.6	105.9	7.13	7.18	7.29	16.90	-20.2	-35.4	-39.6	0.07	0.41	-86.3	-109.6	-128.3	-149.2	177.0	-136.12
11.00	6.68	114.1	113.4	112.7	7.34	7.32	7.40	16.89	-23.0	-37.4	-41.9	0.06	0.64	-83.7	-108.4	-127.9	-148.5	211.6	-137.89
11.50	6.61	117.4	116.7	116.0	7.45	7.40	7.44	16.89	-24.3	-38.3	-42.6	0.05	0.71	-82.2	-107.6	-127.7	-148.6	302.4	-141.30
12.00	6.54	120.6	120.1	119.4	7.51	7.42	7.45	16.88	-25.5	-39.1	-43.5	0.05	0.74	-81.7	-107.7	-127.2	-148.0	361.5	-142.68
12.50	6.46	123.8	123.3	122.7	7.57	7.47	7.48	16.89	-26.7	-39.8	-44.7	0.05	0.72	-81.8	-107.1	-127.0	-148.0	507.5	-145.98
13.00	6.40	127.0	126.6	126.0	7.65	7.49	7.46	16.89	-27.8	-40.6	-45.3	0.06	0.65	-79.9	-106.0	-126.3	-147.4	606.7	-147.42
13.50	6.32	130.1	129.8	129.2	7.65	7.48	7.42	16.88	-28.7	-41.1	-46.1	0.07	0.52	-80.3	-105.5	-126.0	-147.1	851.6	-150.69
14.00	6.21	133.2	132.9	132.4	7.66	7.44	7.37	16.88	-29.6	-41.9	-46.7	0.09	0.26	-79.0	-105.4	-125.6	-146.5	1000.0	-152.17

\*at 25°C unless mentioned otherwise



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