

# Surface Mount Voltage Controlled Oscillator

# ROS-3388-219+

Linear Tuning 3080 to 3380 MHz



## Features

- Low pulling
- Low pushing
- Aqueous washable

## Applications

- WiMAX
- Outdoor units 8GHz
- Satellite systems
- Radar and navigation system

CASE STYLE: CK605  
PRICE: \$15.95 ea. QTY (5-49)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

*The +Suffix has been added in order to identify 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 dBc (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.	Max.	Max.
ROS-3388-219+	3080	3380	+5	-74	-99	-120	-140	0.5	13	30	-37	30	60	-90	-30	-20	1.5	2	5	42

## Pin Connections

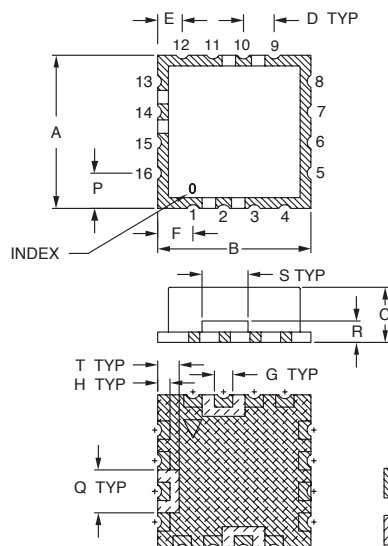
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

## Maximum Ratings

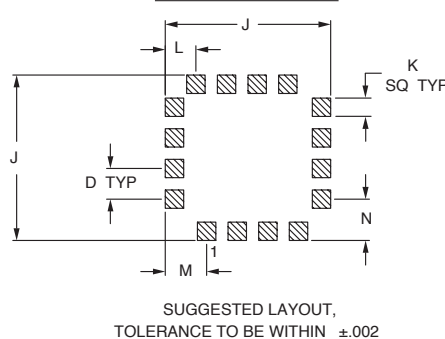
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	7V
Absolute Max. Tuning Voltage (Vtune)	15V
All specifications	50 ohm system

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

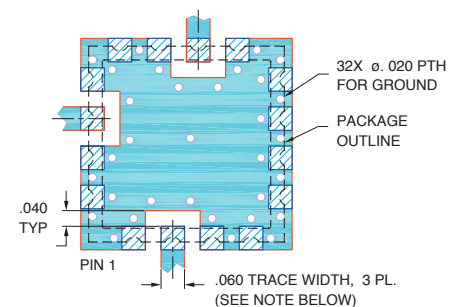
## Outline Drawing



## PCB Land Pattern



## Demo Board MCL P/N: TB-10 Suggested PCB Layout (PL-012)



- NOTES:**
1. TRACE WIDTH IS SHOWN FOR RF4 WITH DIELECTRIC THICKNESS .030" ± .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	R	S	T	wt.
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060	.100	.135	.135	.115	.140	.070	.150	.070	grams
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72	1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

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For detailed performance specs & shopping online see web site

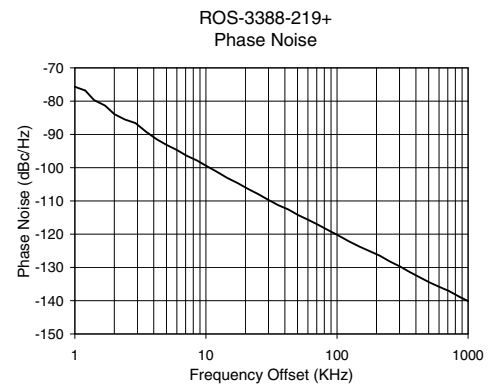
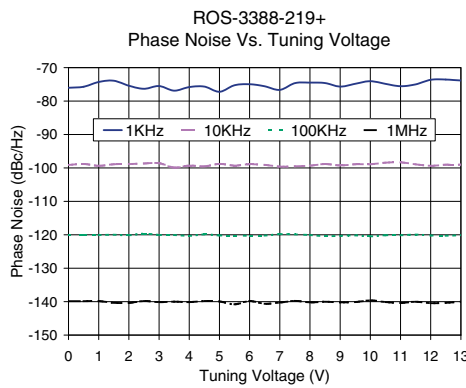
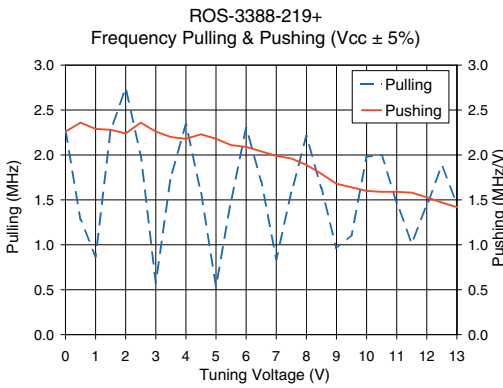
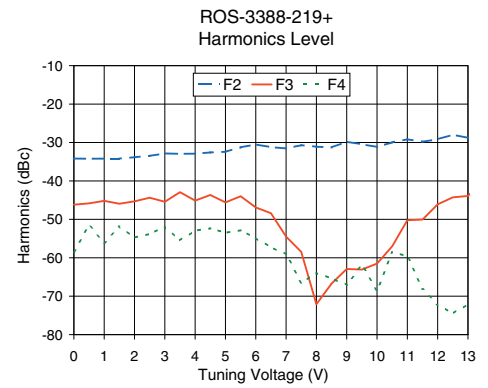
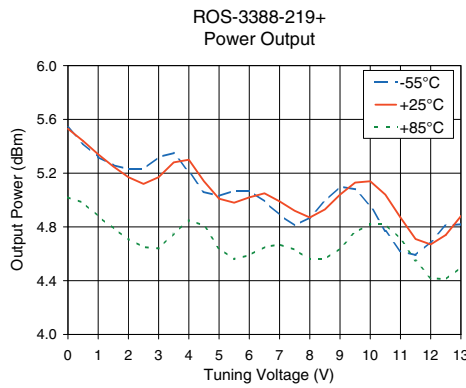
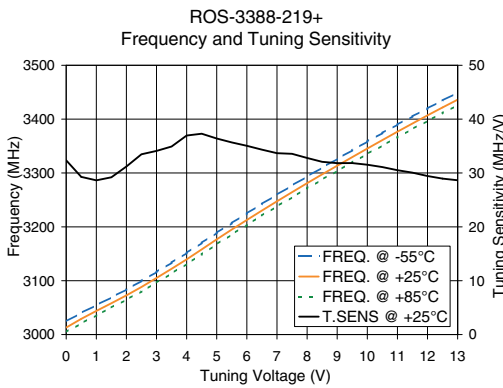
REV. OR  
M110356  
EDR-8439F1  
ROS-3388-219+  
RAV  
090818  
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# Performance Data & Curves\*

# ROS-3388-219+

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 3225 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	32.35	3024.5	3013.0	3004.9	5.54	5.53	5.02	33.79	-34.2	-46.2	-58.4	2.26	2.27	-76.0	-99.1	-120.1	-139.9	1.0	-75.68
0.50	29.28	3040.1	3029.2	3020.8	5.42	5.44	4.98	33.78	-34.2	-45.8	-51.6	2.36	1.28	-75.7	-98.8	-120.1	-139.9	2.0	-83.90
1.00	28.64	3054.5	3043.9	3035.7	5.32	5.34	4.88	33.81	-34.2	-45.2	-56.1	2.29	0.87	-74.3	-99.4	-120.1	-139.8	3.5	-89.23
1.50	29.20	3068.9	3058.2	3050.1	5.26	5.25	4.79	33.83	-34.2	-45.9	-51.9	2.28	2.28	-73.9	-98.9	-120.0	-140.4	6.0	-94.68
2.00	31.20	3083.6	3072.8	3064.7	5.23	5.17	4.71	33.86	-33.8	-45.3	-54.7	2.24	2.74	-75.4	-98.9	-120.2	-140.4	8.5	-97.79
2.50	33.47	3099.7	3088.4	3079.9	5.23	5.12	4.65	33.87	-33.5	-44.4	-53.8	2.36	2.00	-76.3	-98.7	-119.7	-139.8	10.0	-99.41
3.00	34.09	3116.3	3105.1	3096.5	5.32	5.17	4.64	33.91	-32.9	-45.4	-52.0	2.26	0.58	-75.5	-98.6	-120.0	-140.1	20.8	-106.33
4.00	36.96	3151.5	3139.6	3131.0	5.21	5.30	4.85	33.98	-32.9	-45.1	-52.9	2.18	2.34	-75.8	-99.3	-120.3	-140.1	35.5	-111.25
5.00	36.40	3188.8	3176.7	3167.6	5.03	5.01	4.64	34.04	-32.4	-45.6	-53.5	2.18	0.54	-77.2	-98.8	-120.2	-139.9	60.7	-115.73
6.00	35.04	3224.9	3212.8	3203.6	5.07	5.02	4.59	34.15	-30.5	-46.9	-54.9	2.09	2.30	-75.0	-98.9	-120.3	-139.8	86.7	-118.91
6.50	34.33	3242.5	3230.3	3221.1	4.99	5.05	4.65	34.19	-31.2	-48.4	-57.3	2.04	1.71	-75.6	-99.1	-120.2	-140.6	100.0	-120.18
7.00	33.69	3259.7	3247.5	3238.2	4.89	4.99	4.67	34.24	-31.6	-54.5	-59.1	1.99	0.84	-76.6	-99.6	-119.8	-140.3	148.1	-123.72
8.00	32.79	3293.6	3281.1	3271.5	4.87	4.87	4.56	34.32	-31.1	-72.1	-64.0	1.89	2.21	-74.5	-99.3	-120.1	-140.2	177.0	-125.09
9.00	31.83	3326.1	3313.5	3303.9	5.10	5.04	4.64	34.42	-29.8	-62.9	-67.0	1.68	0.96	-75.7	-99.3	-120.3	-140.2	211.6	-126.45
9.50	31.84	3342.4	3329.4	3319.6	5.08	5.13	4.76	34.46	-30.5	-63.1	-61.9	1.64	1.11	-74.8	-98.9	-120.2	-140.1	302.4	-129.71
10.00	31.54	3358.5	3345.4	3335.3	4.96	5.14	4.82	34.49	-31.2	-61.5	-68.5	1.60	1.98	-74.1	-98.9	-120.5	-139.6	361.5	-131.46
10.50	31.09	3374.3	3361.1	3350.9	4.77	5.04	4.82	34.54	-30.0	-57.0	-58.6	1.59	2.00	-74.9	-98.4	-120.1	-140.1	507.5	-134.51
11.00	30.51	3389.8	3376.7	3366.4	4.62	4.87	4.71	34.60	-29.2	-50.2	-59.6	1.59	1.47	-75.5	-98.3	-120.2	-140.4	606.7	-135.88
12.50	28.96	3434.6	3421.7	3411.4	4.81	4.74	4.41	34.80	-28.0	-44.3	-74.5	1.47	1.88	-73.6	-99.1	-120.3	-140.4	851.6	-138.75
13.00	28.64	3449.2	3436.2	3425.8	4.82	4.88	4.50	34.85	-28.8	-43.9	-72.1	1.42	1.46	-73.8	-99.0	-120.1	-140.0	1000.0	-140.11

\*at 25°C unless mentioned otherwise



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