

# Voltage Controlled Oscillator

# ROS-425-319+

5V Tuning for PLL IC's 390 to 425 MHz

### Features

- Linear Tuning characteristics
- Ultra low Phase Noise
- Very low Pushing
- Low Pulling
- Aqueous washable

### Applications

- Wireless communication
- PLL circuitry
- Frequency synthesizers



CASE STYLE: CK605  
PRICE: \$19.95 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 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.
ROS-425-319+	390	425	+0.5	-93	-119	-140	-161	0.5	5	11	120	20	-90	-21	-12	0.1	0.04	5	22

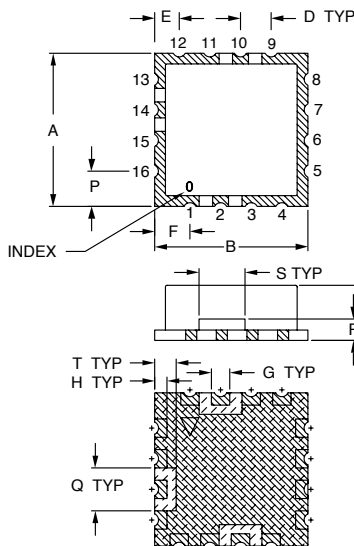
### Pin Connections

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

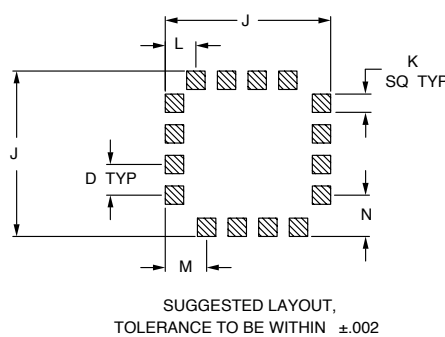
### Maximum Ratings

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)	7V
All specifications	50 ohm system

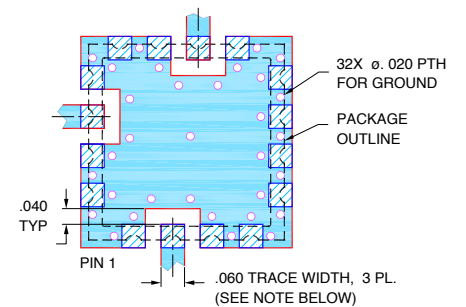
### Outline Drawing



### 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 For detailed performance specs & shopping online see Mini-Circuits web site



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RF/IF MICROWAVE COMPONENTS



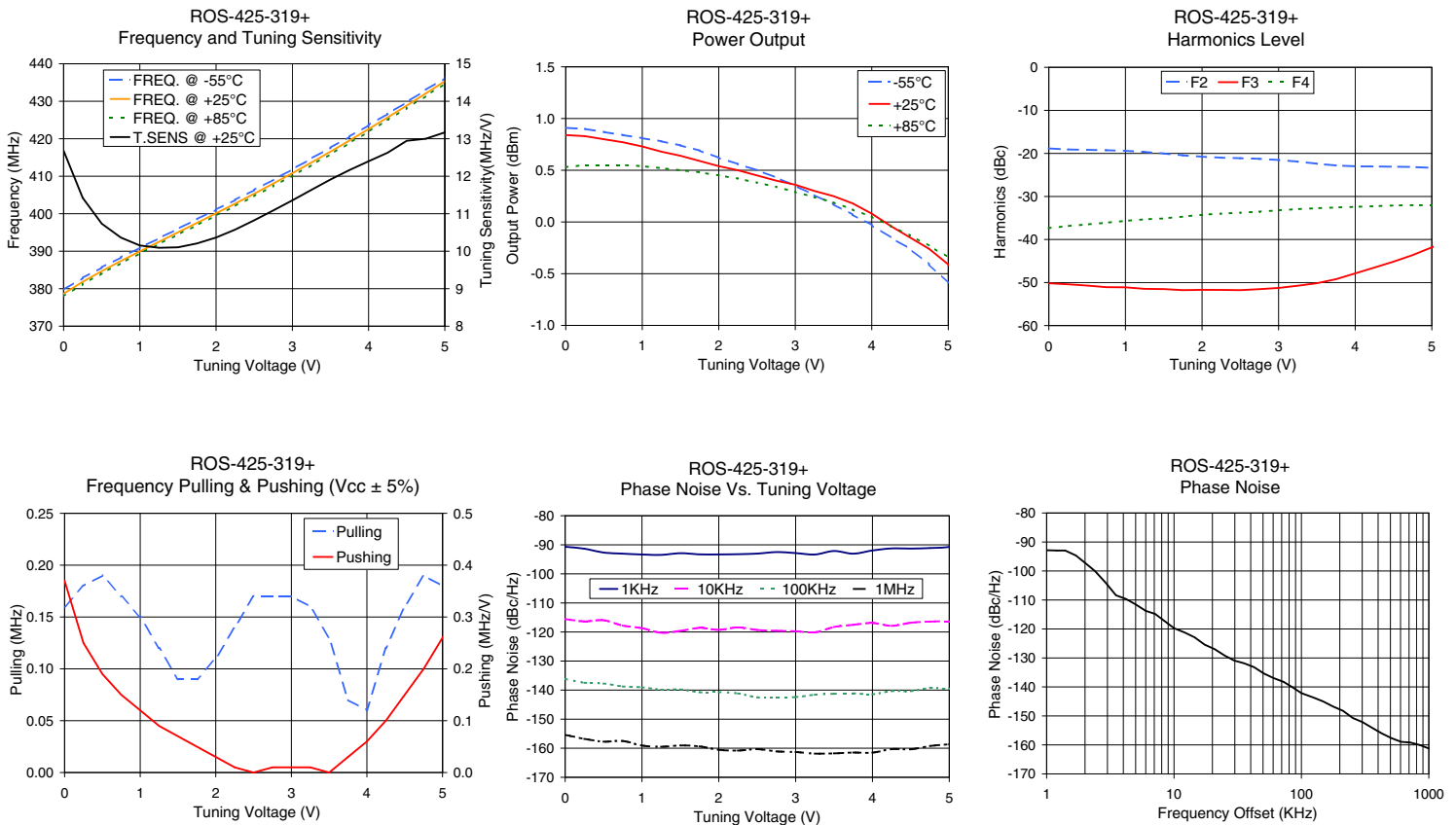
REV. OR  
M107025  
EDR-8087  
ROS-425-319+  
RAV  
071120  
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# Performance Data & Curves\*

# ROS-425-319+

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 408 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	12.68	379.7	378.7	378.0	0.91	0.84	0.53	17.17	-18.8	-50.2	-37.4	0.37	0.16	-90.7	-115.6	-136.2	-155.4	1.0	-92.83
0.50	10.74	385.7	384.7	384.1	0.87	0.80	0.55	17.20	-19.2	-50.7	-36.5	0.19	0.19	-92.7	-116.0	-137.7	-157.7	2.0	-97.20
0.75	10.36	388.3	387.4	386.8	0.84	0.77	0.55	17.29	-19.3	-51.1	-36.1	0.15	0.17	-93.1	-117.8	-138.7	-157.5	3.5	-108.38
1.00	10.15	390.9	390.0	389.4	0.81	0.73	0.54	17.34	-19.4	-51.1	-35.7	0.12	0.15	-93.3	-118.7	-139.1	-159.1	6.0	-113.76
1.25	10.09	393.4	392.5	391.9	0.78	0.68	0.52	17.37	-19.7	-51.5	-35.3	0.09	0.12	-93.5	-120.3	-139.9	-159.5	8.5	-117.41
1.50	10.10	396.0	395.0	394.4	0.74	0.64	0.50	17.42	-20.0	-51.5	-35.1	0.07	0.09	-92.9	-119.6	-139.8	-159.0	10.0	-119.73
1.75	10.21	398.5	397.5	397.0	0.69	0.59	0.48	17.43	-20.5	-51.8	-34.7	0.05	0.09	-93.3	-118.6	-140.7	-159.4	20.8	-126.94
2.00	10.36	401.1	400.1	399.5	0.62	0.54	0.45	17.45	-20.8	-51.7	-34.3	0.03	0.11	-93.3	-119.3	-140.7	-160.5	35.5	-131.84
2.25	10.58	403.7	402.7	402.1	0.56	0.50	0.42	17.45	-21.0	-51.7	-34.0	0.01	0.14	-93.2	-118.4	-141.1	-160.8	60.7	-136.97
2.50	10.82	406.3	405.3	404.7	0.50	0.45	0.38	17.44	-21.1	-51.8	-33.8	0.00	0.17	-93.0	-119.3	-142.5	-160.3	86.7	-140.32
2.75	11.09	409.1	408.0	407.4	0.43	0.40	0.34	17.44	-21.3	-51.5	-33.5	0.01	0.17	-92.5	-119.6	-142.6	-161.1	100.0	-142.15
3.00	11.36	411.8	410.8	410.1	0.35	0.36	0.29	17.43	-21.5	-51.3	-33.2	0.01	0.17	-92.9	-119.7	-142.4	-161.3	148.1	-145.01
3.25	11.64	414.7	413.7	413.0	0.26	0.30	0.24	17.41	-21.9	-50.7	-32.9	0.01	0.16	-93.3	-120.1	-141.6	-161.9	177.0	-146.75
3.50	11.91	417.6	416.6	415.9	0.17	0.25	0.19	17.39	-22.4	-50.2	-32.7	0.00	0.13	-92.1	-118.3	-141.3	-161.8	211.6	-148.23
3.75	12.16	420.6	419.5	418.8	0.07	0.18	0.12	17.36	-22.8	-49.2	-32.6	0.03	0.07	-93.0	-117.5	-141.1	-161.5	302.4	-152.16
4.00	12.40	423.6	422.6	421.9	-0.03	0.08	0.05	17.32	-23.0	-47.9	-32.4	0.06	0.06	-91.9	-116.9	-141.4	-161.5	361.5	-154.17
4.25	12.63	426.7	425.7	425.0	-0.15	-0.04	-0.04	17.28	-23.0	-46.5	-32.3	0.10	0.12	-91.2	-117.9	-140.3	-160.3	507.5	-157.63
4.50	12.94	429.8	428.8	428.2	-0.26	-0.15	-0.13	17.23	-23.1	-45.2	-32.1	0.15	0.16	-91.3	-116.8	-140.4	-160.4	606.7	-158.95
4.75	13.00	433.0	432.1	431.4	-0.41	-0.26	-0.23	17.18	-23.2	-43.6	-32.0	0.20	0.19	-91.1	-116.4	-139.2	-159.2	851.6	-160.03
5.00	13.17	436.2	435.3	434.7	-0.59	-0.41	-0.34	17.12	-23.4	-41.8	-32.1	0.26	0.18	-90.7	-116.3	-139.6	-158.6	1000.0	-161.22

\*at 25°C unless mentioned otherwise



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