

## Voltage Controlled Oscillator

ROS-615+

5V Tuning for PLL IC's 580 to 615 MHz

## Features

- Linear tuning characteristics
- Low phase noise
- Low pushing
- Low pulling
- 0.5-5V tuning voltage range
- Aqueous washable

## Applications

- PLL circuitry
- Frequency synthesizers
- Wireless microphones



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. There has been no change to the model's material, form, fit, or function. 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  Typ.				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dB <sub>r</sub> (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
								VOLTAGE RANGE (V)	SENSI- TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	V <sub>cc</sub> (volts)						Current (mA)	
	Min.	Max.		Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.		Typ.	Typ.			Typ.	Max.
ROS-615+	580	615	-0.6	-90	-113	-133	-153	0.5	5.0	12 - 13	80	19	-90	-21	-13	0.2	0.2	5	17

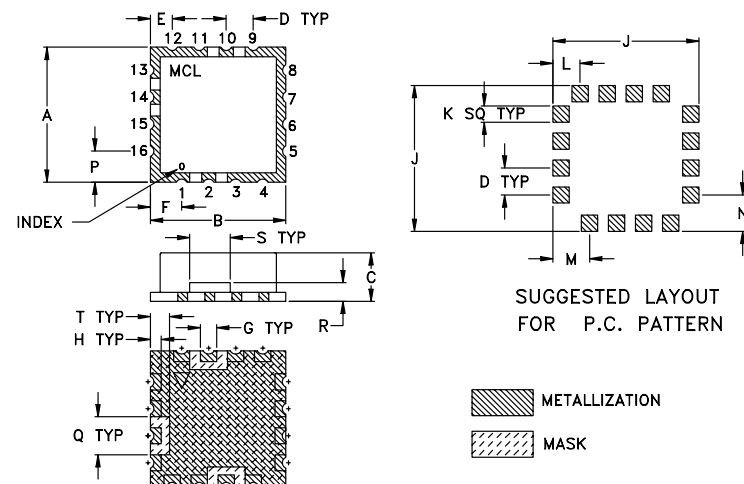
## Pin Connections

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

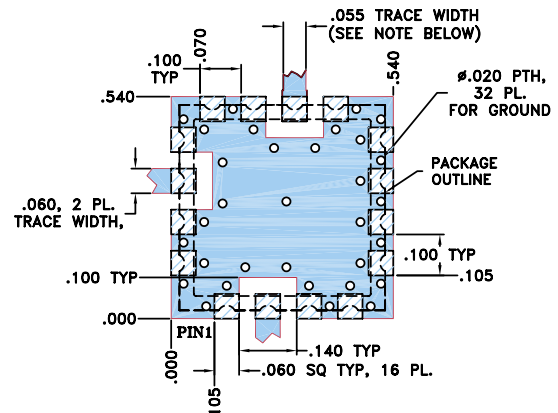
## Maximum Ratings

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



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



NOTE: 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.

DENOTES PCB COPPER LAYOUT  
 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

# Performance Data & Curves\*

# ROS-615+

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 596 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1KHz	10KHz	100KHz	1MHz		
0.00	13.87	564.9	562.5	560.0	-1.80	-1.00	-0.99	12.26	-19.9	-31.6	-39.1	0.01	0.36	-89.9	-113.6	-133.0	-152.3	1.0	-89.95
0.50	12.09	571.4	569.1	566.9	-1.71	-0.91	-0.89	12.29	-20.0	-31.3	-39.3	0.06	0.19	-89.5	-112.4	-133.1	-152.0	2.0	-98.05
0.75	11.73	574.4	572.1	569.9	-1.67	-0.87	-0.85	12.31	-20.1	-31.2	-39.1	0.08	0.17	-89.9	-113.2	-132.7	-152.4	3.5	-103.39
1.00	11.55	577.4	575.1	572.8	-1.63	-0.83	-0.82	12.33	-20.2	-31.2	-39.2	0.10	0.14	-90.3	-111.9	-132.5	-152.8	6.0	-107.88
1.25	11.50	580.3	578.0	575.7	-1.60	-0.79	-0.78	12.34	-20.3	-31.0	-39.4	0.12	0.15	-89.3	-112.5	-132.8	-152.7	8.5	-110.99
1.50	11.53	583.2	580.8	578.6	-1.57	-0.75	-0.75	12.35	-20.4	-30.7	-39.1	0.12	0.16	-87.2	-112.2	-132.6	-152.6	10.0	-112.89
1.75	11.63	586.1	583.7	581.4	-1.53	-0.72	-0.72	12.37	-20.4	-30.5	-39.0	0.13	0.17	-89.3	-111.8	-132.8	-152.0	20.8	-119.43
2.00	11.77	589.1	586.6	584.3	-1.49	-0.68	-0.70	12.38	-20.4	-30.3	-39.1	0.12	0.17	-91.1	-112.9	-133.1	-153.2	35.5	-124.02
2.25	11.94	592.1	589.6	587.2	-1.46	-0.65	-0.68	12.38	-20.4	-30.1	-39.1	0.11	0.17	-91.2	-113.2	-132.6	-152.3	60.7	-128.41
2.50	12.12	595.1	592.6	590.2	-1.42	-0.62	-0.66	12.39	-20.5	-29.9	-39.1	0.09	0.17	-89.6	-112.8	-132.5	-152.3	86.7	-131.74
2.75	12.30	598.2	595.6	593.2	-1.39	-0.60	-0.65	12.40	-20.6	-29.6	-39.3	0.07	0.18	-90.9	-111.8	-132.8	-153.0	100.0	-132.75
3.00	12.46	601.3	598.7	596.3	-1.36	-0.58	-0.64	12.41	-20.7	-29.4	-39.3	0.03	0.20	-91.2	-112.8	-132.5	-153.1	148.1	-136.25
3.25	12.60	604.4	601.8	599.4	-1.33	-0.57	-0.64	12.41	-20.7	-29.2	-39.0	0.02	0.21	-89.5	-113.4	-132.3	-153.1	177.0	-137.54
3.50	12.69	607.6	604.9	602.5	-1.32	-0.57	-0.64	12.42	-20.7	-29.1	-39.0	0.07	0.22	-89.0	-112.1	-132.7	-153.1	211.6	-139.82
3.75	12.73	610.8	608.1	605.6	-1.31	-0.57	-0.64	12.42	-20.7	-28.8	-38.9	0.12	0.22	-89.5	-112.0	-132.6	-152.7	302.4	-142.72
4.00	12.73	614.0	611.3	608.8	-1.31	-0.58	-0.64	12.42	-20.8	-28.6	-38.5	0.17	0.22	-89.7	-113.1	-132.3	-152.7	361.5	-144.00
4.25	12.67	617.2	614.5	612.0	-1.32	-0.59	-0.65	12.43	-21.0	-28.4	-38.0	0.22	0.23	-87.9	-113.6	-132.0	-151.8	507.5	-146.78
4.50	12.57	620.3	617.6	615.1	-1.33	-0.61	-0.66	12.43	-21.2	-28.2	-37.8	0.26	0.23	-89.6	-112.0	-131.8	-151.6	600.0	-148.26
4.75	12.42	623.5	620.8	618.2	-1.35	-0.63	-0.68	12.43	-21.3	-28.1	-37.3	0.29	0.23	-88.5	-110.8	-131.5	-151.0	851.6	-151.67
5.00	12.25	626.6	623.9	621.3	-1.38	-0.66	-0.70	12.43	-21.3	-28.0	-36.8	0.31	0.23	-88.9	-111.8	-132.0	-152.0	1000.0	-153.13

\*at 25°C unless mentioned otherwise

