

# Surface Mount Voltage Controlled Oscillator

## ROS-400+

### Linear Tuning 200 to 380 MHz



CASE STYLE: CK605  
PRICE: \$14.95 ea. QTY (5-49)

**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

#### Features

- octave band tuning
- low phase noise, -100 dBc/Hz at 10 kHz offset
- linear tuning, 9-22 MHz/V typ.
- excellent harmonic suppression, -24 dBc typ.
- aqueous washable

#### Applications

- test instruments-signal generators
- VHF/UHF

#### Electrical Specifications

FREQUENCY (MHz)	POWER OUTPUT (dBm)	TUNING VOLTAGE (V)	PHASE NOISE (dBc/Hz)				PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	TUNING SENSITIVITY (MHz/V)	HARMONICS (dBc)		3 dB MODULATION BANDWIDTH (MHz)	DC OPERATING POWER	
			SSB at offset frequencies: Typ.							Typ.	Typ.		Typ.	Max.
Min.	Max.	Typ.	Min.	Max.	1 kHz	10 kHz	100 kHz	1 MHz	Typ.	Typ.	Typ.	Max.	Typ.	Max.
200	380	+9.5	0.5	17	-80	-100	-120	-140	0.2	0.3	9-22	-24 -18	0.1	12 20

#### Pin Connections

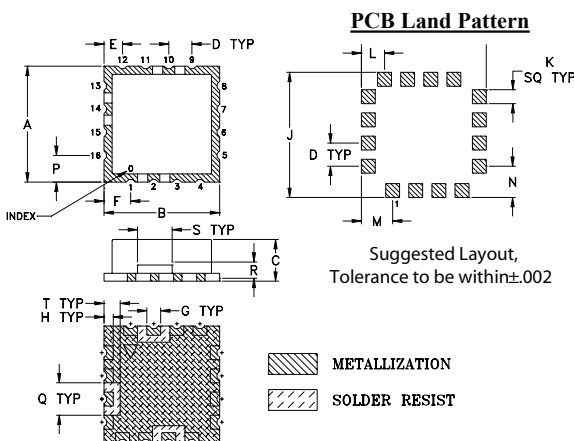
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

#### Maximum Ratings

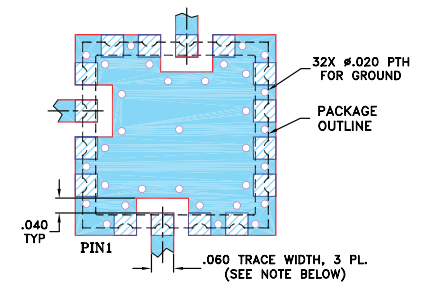
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+13V
Absolute Max. Tuning Voltage (Vtune)	+18V

all specifications: 50 ohm system  
Permanent damage may occur if any of these limits are exceeded.

#### Outline Drawing



#### Demo Board MCL PIN: TB-10 Suggested PCB Layout (PL-012)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR FR4 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

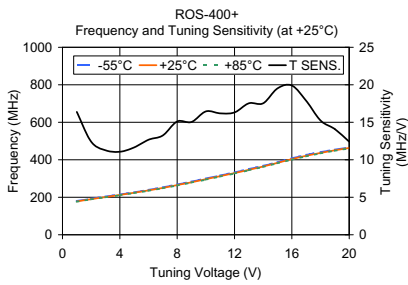
#### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
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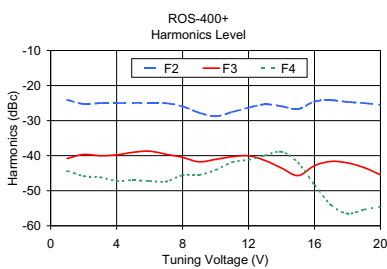
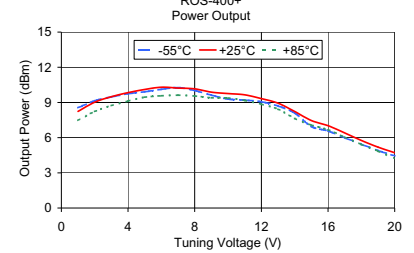


# Performance Data & Curves

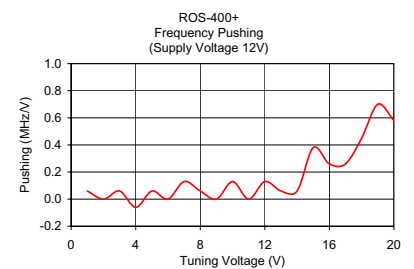
# ROS-400+



V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
1.00	16.38	179.97	177.60	176.26	8.55	8.24	7.47
2.00	12.42	192.32	190.02	188.54	9.14	9.02	8.23
3.00	11.26	203.71	201.28	199.74	9.47	9.49	8.73
4.00	11.07	214.98	212.35	210.75	9.74	9.84	9.12
5.00	11.65	226.50	224.00	222.21	9.91	10.11	9.45
6.00	12.67	239.55	236.67	234.30	10.12	10.30	9.57
7.00	13.25	253.12	249.92	247.94	10.27	10.23	9.62
8.00	15.10	268.03	265.02	262.46	10.02	10.16	9.55
9.00	15.04	283.52	280.06	277.89	9.63	9.88	9.40
10.00	16.45	299.65	296.51	294.08	9.29	9.76	9.38
11.00	16.19	316.22	312.70	309.89	9.20	9.65	9.17
12.00	16.32	332.54	329.02	326.53	9.06	9.33	8.85
13.00	17.54	350.40	346.56	343.74	8.70	8.94	8.43
14.00	17.54	367.74	364.10	361.47	8.10	8.23	7.64
15.00	19.52	387.07	383.62	380.93	6.95	7.46	7.07
16.00	19.90	407.87	403.52	400.19	6.57	7.02	6.67
17.00	17.86	426.24	421.38	417.79	5.99	6.40	6.05
18.00	15.23	440.83	436.61	433.79	5.44	5.76	5.42
19.00	14.08	453.63	450.69	448.06	4.90	5.19	4.85
20.00	12.42	466.43	463.10	460.03	4.45	4.71	4.21



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
1.00	-24.09	-40.80	-44.37	0.06
2.00	-25.26	-39.65	-45.79	0.00
3.00	-25.02	-40.01	-46.16	0.06
4.00	-25.00	-39.77	-47.19	-0.06
5.00	-24.96	-39.04	-47.00	0.06
6.00	-24.91	-38.71	-47.24	0.00
7.00	-25.03	-39.60	-47.39	0.13
8.00	-25.95	-40.49	-45.57	0.06
9.00	-27.74	-41.74	-45.49	0.00
10.00	-28.76	-41.06	-44.06	0.13
11.00	-27.57	-40.30	-41.89	0.00
12.00	-26.30	-40.04	-41.16	0.13
13.00	-25.35	-41.39	-39.93	0.06
14.00	-25.91	-43.54	-38.90	0.06
15.00	-26.71	-45.68	-42.00	0.38
16.00	-24.56	-42.85	-48.34	0.26
17.00	-24.18	-41.65	-54.06	0.26
18.00	-24.68	-42.06	-56.52	0.45
19.00	-25.00	-43.40	-55.40	0.70
20.00	-25.51	-45.46	-54.55	0.58



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