

# Surface Mount Voltage Controlled Oscillator

# ROS-300+

## Linear Tuning 150 to 280 MHz

### Features

- octave band tuning
- low phase noise, -102 dBc/Hz at 10 kHz typ.
- linear tuning, 7-17 MHz/V
- excellent harmonic suppression, -28 dBc typ.
- aqueous washable

### Applications

- test instruments-signal generators
- digital cordless phone



CASE STYLE: CK605

**+ 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

FREQUENCY (MHz)		POWER OUTPUT (dBm)	TUNING VOLTAGE (V)		PHASE NOISE (dBc/Hz) SSB at offset frequencies: Typ.				PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	TUNING SENSITIVITY (MHz/V)	HARMONICS (dBc)		3 dB MODULATION BANDWIDTH (MHz)	DC OPERATING POWER	
Min.	Max.	Typ.	Min.	Max.	1 kHz	10 kHz	100 kHz	1 MHz	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Vcc (volts)	Current (mA) Max.
150	280	+9.0	1	16	-80	-102	-122	-142	0.5	0.3	7-17	-28	-18	0.1	12	20

### Pin Connections

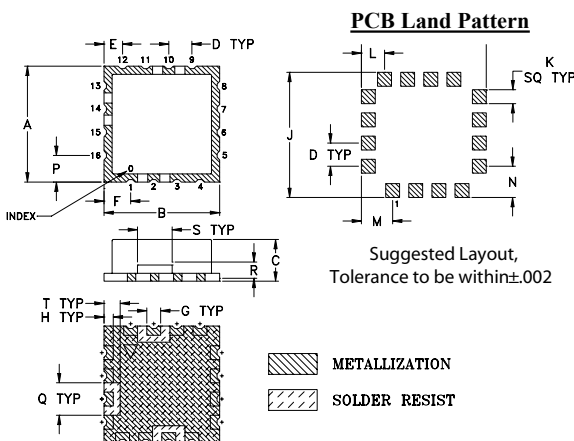
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

### Maximum Ratings

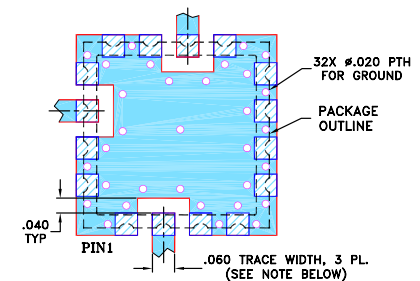
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+13V
Absolute Max. Tuning Voltage (Vtune)	+18V

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



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)

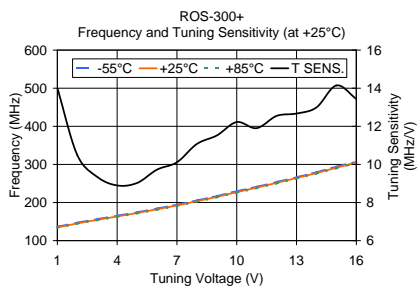
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For detailed performance specs & shipping online see web site

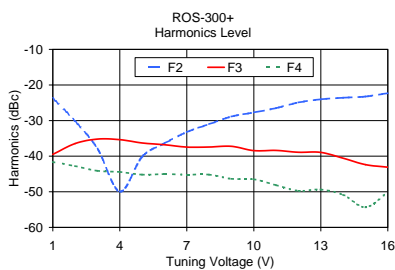
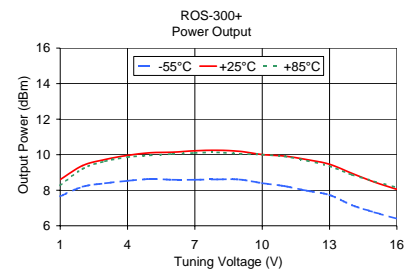
REV. E  
M151107  
EDR-4403  
ROS-300+  
MM/TD/CP/AM  
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Page 1 of 2

# Performance Data & Curves

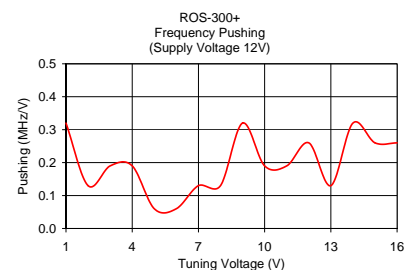
# ROS-300+



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	14.02	136.70	134.78	133.76	7.66	8.60	8.27
2.00	10.50	147.20	145.28	144.26	8.20	9.39	9.21
3.00	9.34	156.48	154.62	153.54	8.39	9.73	9.63
4.00	8.90	165.44	163.52	162.43	8.53	9.96	9.86
5.00	9.02	174.53	172.54	171.46	8.63	10.11	9.96
6.00	9.73	184.32	182.27	180.93	8.59	10.14	10.04
7.00	10.11	194.43	192.38	191.10	8.59	10.22	10.10
8.00	11.07	205.70	203.46	201.98	8.61	10.25	10.13
9.00	11.52	217.02	214.98	213.57	8.60	10.19	10.05
10.00	12.22	229.63	227.20	225.66	8.40	10.01	10.00
11.00	11.90	241.41	239.10	237.57	8.23	9.92	9.90
12.00	12.54	253.95	251.65	250.11	7.97	9.72	9.66
13.00	12.67	266.50	264.32	262.59	7.73	9.46	9.35
14.00	12.99	279.55	277.31	275.84	7.16	8.95	8.87
15.00	14.14	294.08	291.46	289.73	6.76	8.46	8.50
16.00	13.44	307.20	304.90	303.30	6.39	8.05	8.15



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
1.00	-23.71	-39.50	-41.63	0.32
2.00	-30.16	-36.45	-42.78	0.13
3.00	-37.90	-35.20	-44.11	0.19
4.00	-49.94	-35.35	-44.42	0.19
5.00	-40.15	-36.29	-45.18	0.06
6.00	-36.40	-36.79	-45.03	0.06
7.00	-33.22	-37.44	-45.20	0.13
8.00	-31.00	-37.43	-45.19	0.13
9.00	-28.88	-37.23	-46.36	0.32
10.00	-27.72	-38.45	-46.50	0.19
11.00	-26.48	-38.39	-48.14	0.19
12.00	-24.91	-38.90	-49.73	0.26
13.00	-24.03	-38.94	-49.38	0.13
14.00	-23.58	-40.56	-50.86	0.32
15.00	-23.24	-42.37	-54.35	0.26
16.00	-22.31	-43.10	-50.14	0.26



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