

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
PRICE: \$14.95 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

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.	V _{cc} (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

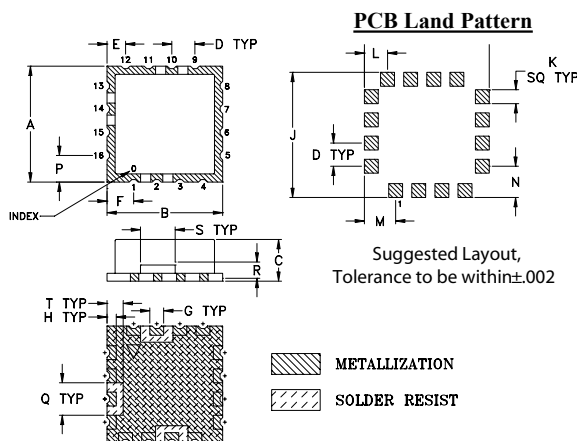
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

Maximum Ratings

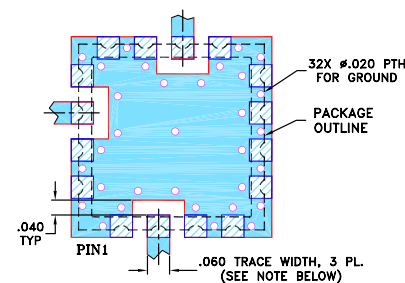
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (V _{cc})	+13V
Absolute Max. Tuning Voltage (V _{tune})	+18V

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

Outline Drawing



Demo Board MCL P/N: 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

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IF/RF MICROWAVE COMPONENTS

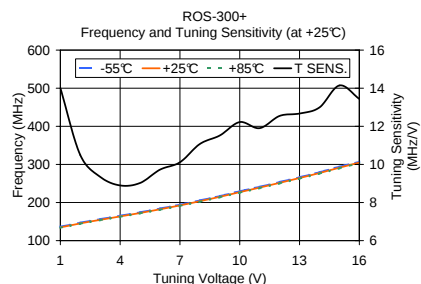
For detailed performance specs & shipping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp.

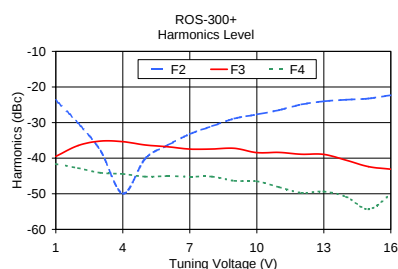
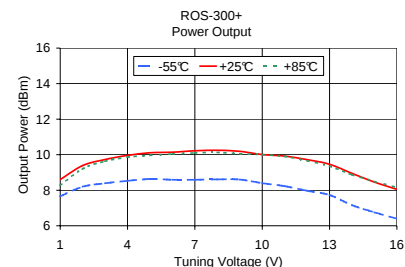
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Performance Data & Curves

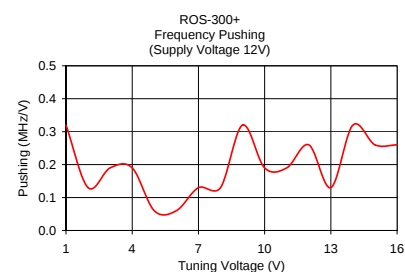
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V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
1.00	14.02	136.70	134.78	133.76	7.66	8.60	8.27
2.00	10.50	147.20	145.28	144.26	8.20	9.39	9.21
3.00	9.34	156.48	154.62	153.54	8.39	9.73	9.63
4.00	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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