

# Voltage Controlled Oscillator

# JTOS-300+ JTOS-300

Linear Tuning 150 to 280 MHz

### Features

- flat tuning sensitivity, 9-14 MHz/V typ.
- excellent harmonic suppression, -28 dBc typ.
- low phase noise, -142 dBc/Hz at 1 MHz offset
- aqueous washable



CASE STYLE: BK377  
PRICE: \$15.95 ea. QTY (5-49)

### Applications

- VHF communication systems
- instrumentation

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

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

### Electrical Specifications

MODEL NO.	FREQ. (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)
JTOS-300	150	280	+9.0	1	16	-82	-102	-122	-142	1.0	0.2	9-14	-28	-20	0.12	12	20

### Pin Connections

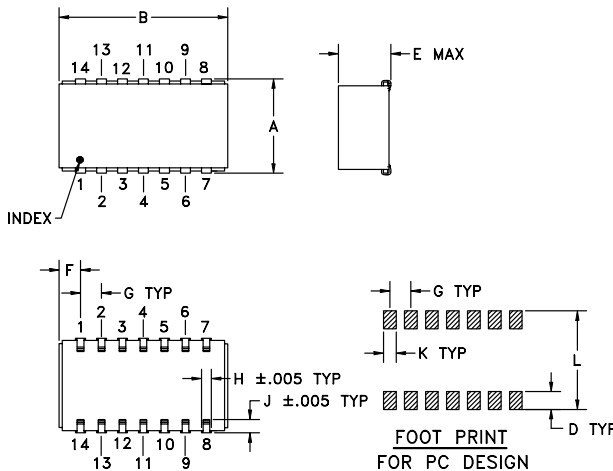
RFOUT	13
VCC	2
V-TUNE	5
GROUND	1,3,4,6,7,8,9,10,11,12,14

### Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+16V
Absolute Max. Tuning Voltage (Vtune)	+18V

all specifications: 50 ohm system

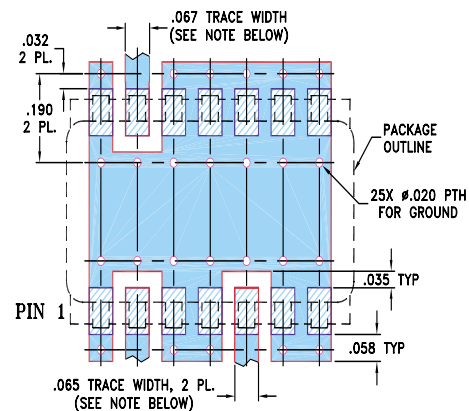
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	wt
.505	.800	--	.100	.250	.100	.100	.047	.065	.065	.525	grams
12.83	20.32	--	2.54	6.35	2.54	2.54	1.19	1.65	1.65	13.34	3.0

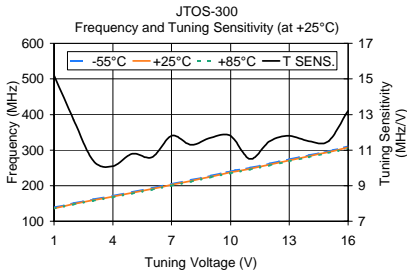
### Demo Board MCL P/N: TB-04 Suggested PCB Layout (PL-005)



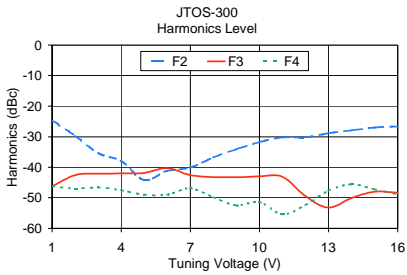
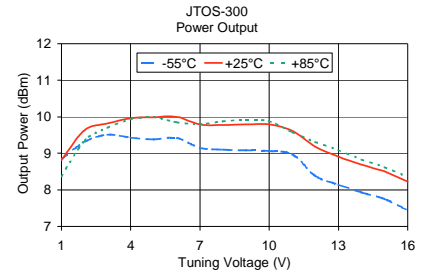
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE BOTTOM IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Performance Curves



V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
1.0	15.20	138.58	136.00	135.70	8.84	8.81	8.37
2.0	12.70	150.61	148.68	147.15	9.31	9.63	9.34
3.0	10.40	161.06	159.08	157.38	9.51	9.82	9.70
4.0	10.10	171.65	169.21	167.46	9.43	9.96	9.93
5.0	10.80	182.25	180.05	177.96	9.38	9.99	9.99
6.0	10.60	193.33	190.70	188.70	9.42	10.00	9.85
7.0	11.80	204.78	202.46	200.30	9.15	9.79	9.80
8.0	11.30	216.40	213.80	211.48	9.10	9.78	9.88
9.0	11.70	227.96	225.50	223.48	9.08	9.79	9.91
10.0	11.80	240.03	237.35	234.88	9.06	9.79	9.88
11.0	10.50	250.31	247.82	245.40	8.97	9.62	9.58
12.0	11.50	261.96	259.30	256.93	8.38	9.18	9.31
13.0	11.80	274.03	271.13	268.48	8.14	8.91	9.09
14.0	11.50	285.33	282.63	279.91	7.93	8.69	8.83
15.0	11.50	296.50	294.15	291.66	7.75	8.50	8.62
16.0	13.20	310.38	307.38	304.65	7.44	8.22	8.35



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
1.0	-24.60	-46.30	-46.30	0.37
2.0	-29.70	-42.60	-47.00	0.21
3.0	-35.40	-42.10	-46.60	0.19
4.0	-38.00	-42.00	-47.50	0.10
5.0	-44.20	-41.90	-49.00	0.16
6.0	-41.20	-40.30	-49.00	0.03
7.0	-40.10	-42.60	-46.90	0.25
8.0	-36.80	-43.20	-49.80	0.12
9.0	-34.10	-43.30	-52.50	0.34
10.0	-31.80	-43.00	-51.40	0.25
11.0	-30.20	-43.10	-55.40	0.03
12.0	-30.20	-49.50	-52.40	0.29
13.0	-28.90	-53.20	-47.70	0.20
14.0	-27.90	-50.10	-45.60	0.08
15.0	-27.00	-48.00	-47.20	0.20
16.0	-26.70	-48.40	-48.90	0.45

