

Surface Mount Voltage Controlled Oscillator

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

Applications

- VHF communication systems
- instrumentation



Generic photo used for illustration purposes only

CASE STYLE: BK377

+RoHS Compliant

The +Suffix identifies 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 dBr (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	-82	-102	-122	-142	1.0	0.2	9-14		-28	-20	0.12	12	20

Pin Connections

RF OUT	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

Permanent damage may occur if any of these limits are exceeded.

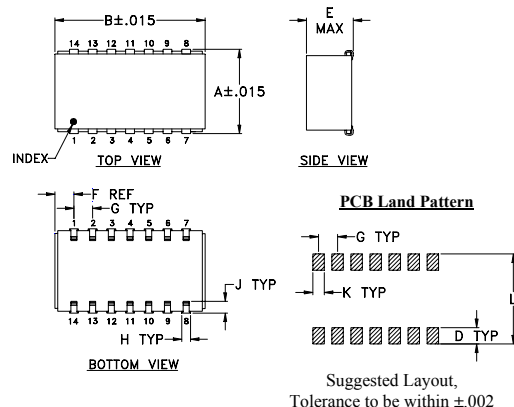
Tape & Reel: F107

7" Reels with 10, 20, 50, 100 devices

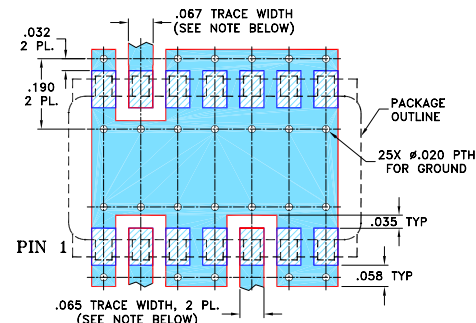
13" Reels with 200 devices

Environmental Ratings: ENV65

Outline Drawing



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



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B 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	wt (max)
.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	2.0

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.
- C. The parts covered by this specification document 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

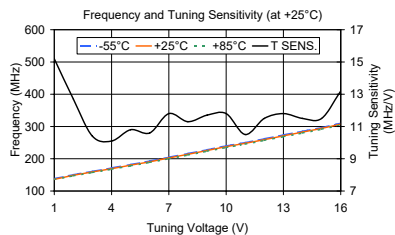


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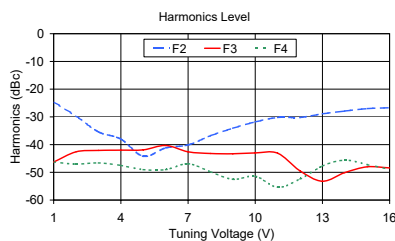
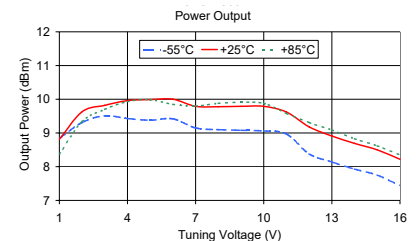
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Performance Data & Curves

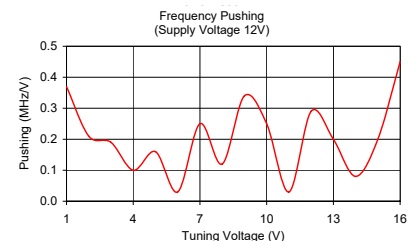
JTOS-300+



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	15.20	138.58	136.00	135.70	8.84	8.81	8.37
2.00	12.70	150.61	148.68	147.15	9.31	9.63	9.34
3.00	10.40	161.06	159.08	157.38	9.51	9.82	9.70
4.00	10.10	171.65	169.21	167.46	9.43	9.96	9.93
5.00	10.80	182.25	180.05	177.96	9.38	9.99	9.99
6.00	10.60	193.33	190.70	188.70	9.42	10.00	9.85
7.00	11.80	204.78	202.46	200.30	9.15	9.79	9.80
8.00	11.30	216.40	213.80	211.48	9.10	9.78	9.88
9.00	11.70	227.96	225.50	223.48	9.08	9.79	9.91
10.00	11.80	240.03	237.35	234.88	9.06	9.79	9.88
11.00	10.50	250.31	247.82	245.40	8.97	9.62	9.58
12.00	11.50	261.96	259.30	256.93	8.38	9.18	9.31
13.00	11.80	274.03	271.13	268.48	8.14	8.91	9.09
14.00	11.50	285.33	282.63	279.91	7.93	8.69	8.83
15.00	11.50	296.50	294.15	291.66	7.75	8.50	8.62
16.00	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	
1.00	-24.60	-46.30	-46.30	0.37
2.00	-29.70	-42.60	-47.00	0.21
3.00	-35.40	-42.10	-46.60	0.19
4.00	-38.00	-42.00	-47.50	0.10
5.00	-44.20	-41.90	-49.00	0.16
6.00	-41.20	-40.30	-49.00	0.03
7.00	-40.10	-42.60	-46.90	0.25
8.00	-36.80	-43.20	-49.80	0.12
9.00	-34.10	-43.30	-52.50	0.34
10.00	-31.80	-43.00	-51.40	0.25
11.00	-30.20	-43.10	-55.40	0.03
12.00	-30.20	-49.50	-52.40	0.29
13.00	-28.90	-53.20	-47.70	0.20
14.00	-27.90	-50.10	-45.60	0.08
15.00	-27.00	-48.00	-47.20	0.20
16.00	-26.70	-48.40	-48.90	0.45



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