

5V Tuning for PLL IC's 2000 to 2200 MHz

Features

- wide frequency range, 2000 to 2200 MHz typ.
- low phase noise, -137 dBc/Hz at 1 MHz offset
- suitable for PLL & synthesizer IC's
- 5Volts supply & tuning voltage

Applications

- PPL circuitry
- measurement instrumentation
- satellite systems
- PCS



CASE STYLE: BK377

PRICE: Contact Sales Dept.

Electrical Specifications

Frequency (MHz)		Power Output (dBm)	Tuning Voltage (V)		Phase Noise (dBc/Hz) SSB at offset frequencies: Typ.				Pulling pk-pk @ 12 dB _r (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.
2000	2200	+7.0	0.5	5.0	-67	-94	-116	-137	14	4	57-91	-15	-10	150		5	25

Pin Connections

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

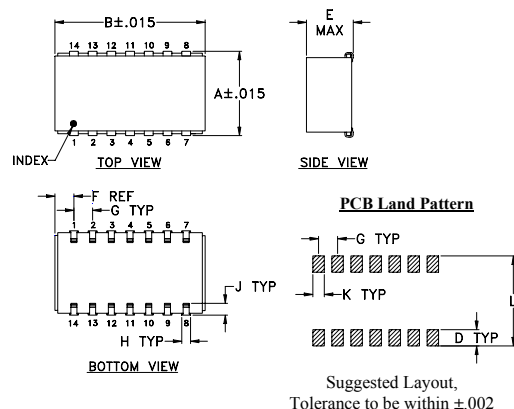
Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+7V
Absolute Max. Tuning Voltage (Vtune)	+7V

all specifications: 50 ohm system

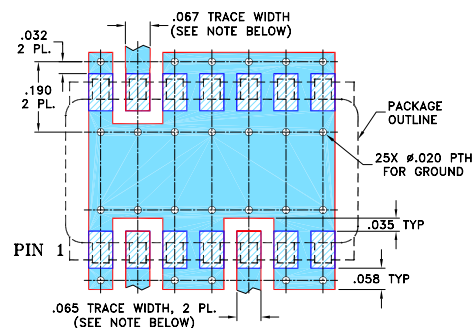
Permanent damage may occur if any of these limits are exceeded.

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 $.030" \pm .002"$; 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
.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

Notes

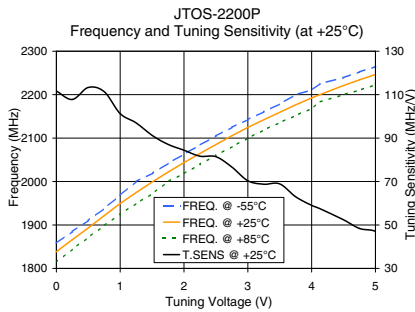
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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



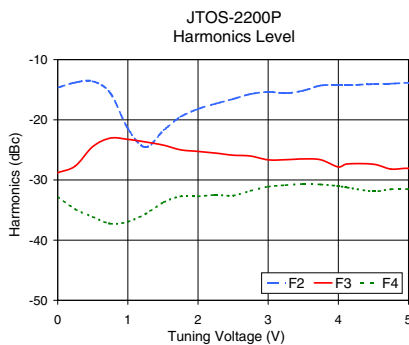
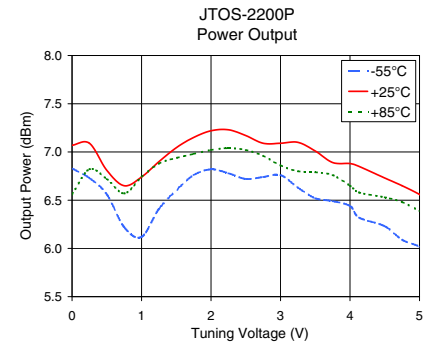
NON-CATALOG

Performance Data & Curves

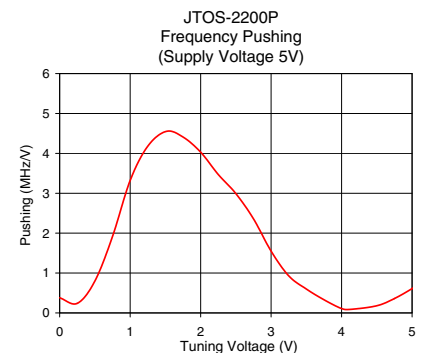
JTOS-2200P



V TUNE	TUNING SENS. (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)		
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C
0.50	113.32	1910.6	1893.2	1871.2	6.56	6.81	6.72
1.00	101.26	1968.4	1949.4	1925.2	6.12	6.74	6.74
2.00	84.40	2063.2	2043.5	2018.2	6.82	7.22	7.02
2.50	81.44	2104.8	2085.0	2060.2	6.72	7.17	7.02
3.00	70.36	2142.7	2124.6	2099.8	6.76	7.09	6.86
3.50	68.91	2178.6	2159.3	2135.7	6.52	7.01	6.79
4.00	59.01	2210.5	2192.3	2167.9	6.44	6.88	6.65
4.50	52.37	2239.2	2221.1	2200.1	6.23	6.73	6.53
5.00	47.06	2264.4	2246.3	2222.7	6.02	6.56	6.39



V TUNE	HARMONICS (dBc)			FREQ. PUSHING (MHz/V)
	F2	F3	F4	
0.50	-13.6	-24.5	-36.1	0.80
1.00	-21.4	-23.3	-36.9	3.32
2.00	-18.2	-25.3	-32.7	4.03
2.50	-16.6	-25.9	-32.6	2.99
3.00	-15.4	-26.7	-31.1	1.55
3.50	-15.2	-26.5	-30.7	0.60
4.00	-14.2	-27.8	-31.0	0.11
4.50	-14.1	-27.4	-31.9	0.18
5.00	-13.8	-28.1	-31.5	0.61



Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- 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

