

# Frequency Mixer

LRMS-30J

Level 7 (LO Power +7dBm) 200 to 3000 MHz



CASE STYLE: QQ569

## Maximum Ratings

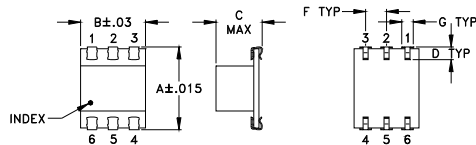
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

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

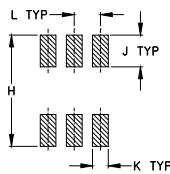
## Pin Connections

LO	1
RF	4
IF	5
GROUND	2,3,6

## Outline Drawing



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

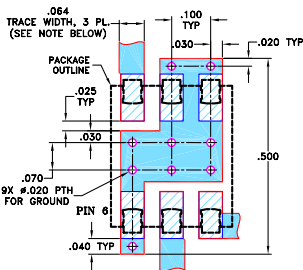
## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.390	.31	.225	.060	--	.100	.045
9.91	7.87	5.72	1.52	--	2.54	1.14

H	J	K	L	M	wt
.420	.120	.060	.100	--	grams
10.67	3.05	1.52	2.54	--	0.50

Demo Board MCL P/N: TB-44+  
Suggested PCB Layout (PL-083)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; 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

## Features

- wide bandwidth, 200 to 3000 MHz
- low conversion loss, 5.92 dB typ.
- aqueous washable
- J-leads for strain relief

## Applications

- cellular
- PCS
- GPS
- ISM
- cellular

## Electrical Specifications

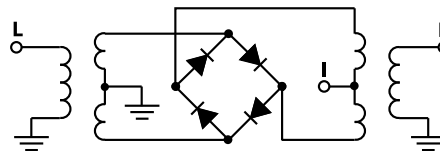
FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)				
		Typ.	Min.	Typ.	Min.					
200-3000	DC-1000	6.8	.30	9.0	9.8	30	17	27	7	14

1 dB COMP: +1 dBm typ.  
m= mid band [2f<sub>L</sub> to f<sub>U</sub>/2]

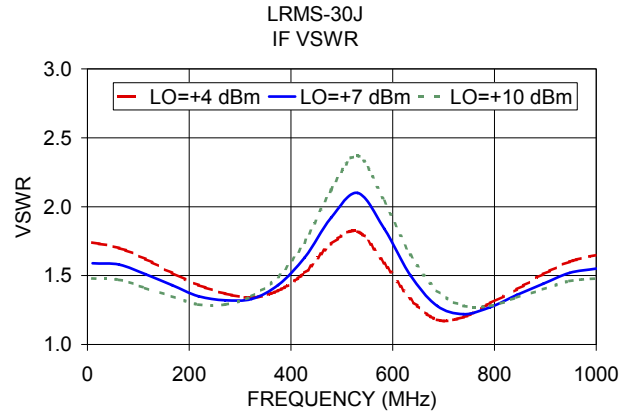
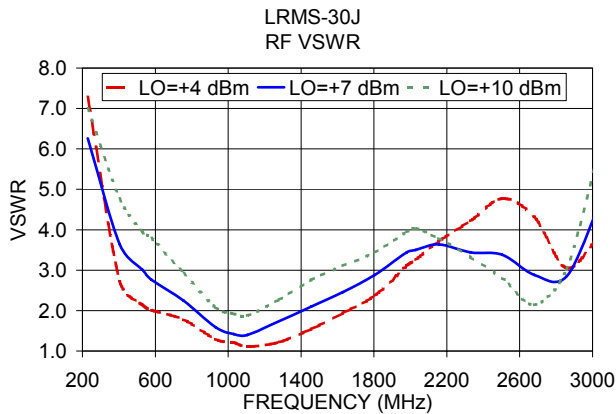
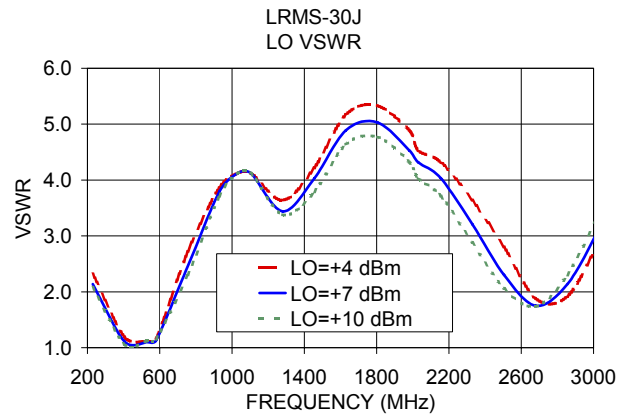
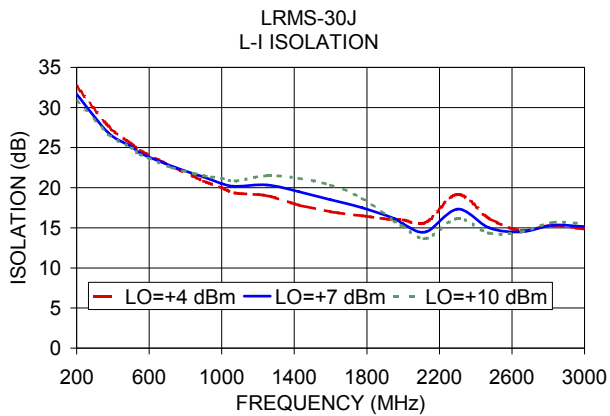
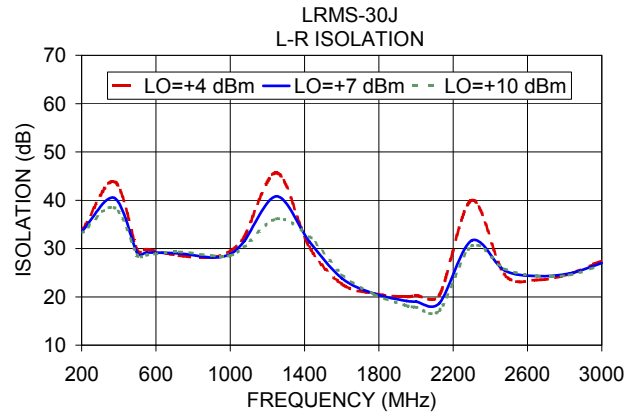
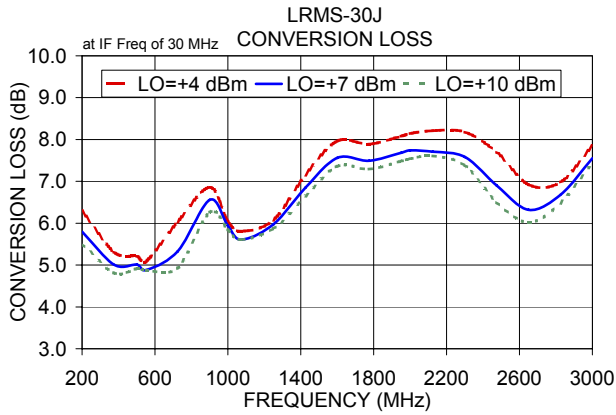
## Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	
						RF
200.00	230.00	5.80	33.50	31.67	6.26	2.14
375.00	405.00	5.01	40.50	26.84	3.64	1.11
500.00	530.00	5.01	29.00	25.17	3.01	1.10
550.00	580.00	4.88	29.16	24.33	2.76	1.13
725.00	755.00	5.33	29.00	22.67	2.25	2.46
900.00	930.00	6.56	28.17	21.34	1.59	3.79
1000.00	1030.00	5.94	28.84	20.50	1.42	4.12
1075.00	1105.00	5.61	31.50	20.17	1.40	4.12
1250.00	1280.00	5.97	40.83	20.33	1.74	3.44
1425.00	1455.00	6.85	31.50	19.50	2.10	4.03
1600.00	1630.00	7.56	23.84	18.50	2.46	4.89
1775.00	1805.00	7.49	20.66	17.50	2.88	5.03
1950.00	1980.00	7.68	19.16	16.16	3.44	4.53
2000.00	2030.00	7.74	19.00	15.50	3.50	4.32
2125.00	2155.00	7.71	18.67	14.50	3.64	4.03
2300.00	2330.00	7.58	31.66	17.33	3.44	3.21
2475.00	2505.00	6.90	25.50	15.00	3.38	2.30
2650.00	2680.00	6.32	24.34	14.50	2.88	1.75
2825.00	2855.00	6.68	24.83	15.33	2.84	2.14
3000.00	3030.00	7.55	27.00	15.17	4.53	3.11

## Electrical Schematic



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.  
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