

Non-Catalog Model

Frequency Mixer

LRMS-2R

Level 7 (LO Power +7 dBm)

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.



Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : QQQ130

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	5		1000	MHz
	RF (fL to fU)	5		1000	MHz
	IF	0		1000	MHz
Conversion Loss	mid band		6.6	8.0	dB
	Total Range			10.0	dB
LO-RF Isolation	Low Range	40	55		dB
	Mid Range	20	39		dB
	Upper Range	17	22		dB
LO-IF Isolation	Low Range	35	46		dB
	Mid Range	20	30		dB
	Upper Range	11	18		dB
1 dB Comp. Input Power			+1		dBm

Notes: Low Range = [fL to 10fL]
mid band = [2fL to fU/2]

Mid Range = [10fL to fU/2]

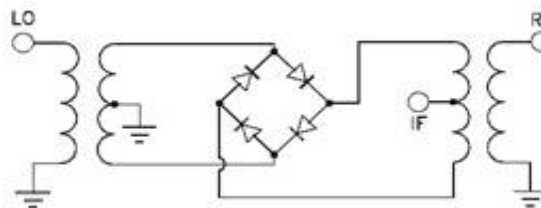
Upper Range = [fU/2 to fU]

Phase detection, positive polarity
Hermetic sealed diodes

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

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

Electrical Schematics



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Typical Performance Data

RF (MHz)	LO (MHz)	CONVERSION LOSS (dB)			LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
		@LO (dBm)				@LO (dBm)			@LO (dBm)		
		+10	+13	+16		+10	+13	+16	+10	+13	+16
5.0	35.0	7.36	6.93	6.73	5.0	63.5	67.4	71.5	54.1	57.2	60.9
10.0	40.0	7.46	7.00	6.77	10.0	62.6	66.5	69.9	53.9	56.9	60.1
20.0	50.0	7.48	6.97	6.74	20.0	62.6	65.9	67.4	54.3	56.8	58.5
35.2	65.2	7.44	6.92	6.69	35.2	61.5	62.9	63.6	54.4	55.6	56.0
50.0	80.0	7.34	6.86	6.64	50.0	59.5	60.5	60.5	53.6	53.9	53.5
65.3	95.3	7.34	6.89	6.83	65.3	58.5	58.5	58.3	52.7	52.2	51.4
100.0	70.0	7.28	6.84	6.63	100.0	55.4	55.1	54.8	50.3	48.9	47.9
155.8	125.8	7.13	6.72	6.69	155.8	52.3	52.1	52.0	47.8	46.2	45.2
200.0	170.0	7.05	6.70	6.57	200.0	50.0	49.8	49.5	46.6	44.7	43.4
246.2	216.2	7.10	6.75	6.62	246.2	48.3	48.1	47.9	45.7	43.7	42.1
306.5	276.5	7.36	6.96	6.76	306.5	45.9	45.8	45.9	44.2	42.0	40.4
366.8	336.8	7.32	6.97	6.74	366.8	44.5	44.5	44.6	41.9	39.7	38.2
427.1	397.1	7.33	6.99	6.72	427.1	42.0	42.1	41.9	39.6	37.8	36.2
500.0	470.0	7.39	7.03	6.79	500.0	39.8	39.9	40.1	36.4	35.1	34.0
577.9	547.9	7.76	7.29	6.96	577.9	38.5	38.5	38.6	34.0	32.6	31.2
668.3	638.3	8.01	7.63	7.29	668.3	37.0	36.9	36.8	30.5	29.5	28.2
758.8	728.8	8.26	7.68	7.26	758.8	35.1	34.7	34.3	27.6	26.7	25.8
849.2	819.2	8.75	7.98	7.47	849.2	33.5	33.1	32.9	24.5	23.7	23.1
909.5	879.5	9.29	8.51	7.90	909.5	32.7	32.5	32.3	22.8	22.4	21.6
1000.0	970.0	9.54	8.90	8.34	1000.0	32.2	32.0	31.8	20.4	20.2	19.6

REV. X1
LRMS-2R
060612
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Frequency Mixer

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Typical Performance Data

RF/LO (MHz)	RF VSWR (:1)			LO VSWR (:1)			IF (MHz)	IF VSWR (:1)			LO/RF (MHz)	max. DC output (mV)	DC Offset (mV)
	@LO (dBm)			@LO (dBm)				@LO (dBm)			@LO (dBm)		
	+10	+13	+16	+10	+13	+16		+10	+13	+16	+13		
5.0	1.30	1.35	1.38	1.72	2.44	3.27	5.0	1.40	1.22	1.11	10.0	230.4	-0.33
10.0	1.19	1.25	1.29	1.68	2.37	3.24	10.0	1.41	1.22	1.11	20.0	229.7	-0.33
20.0	1.15	1.22	1.27	1.80	2.52	3.36	20.0	1.42	1.23	1.12	39.1	228.1	-0.33
35.2	1.15	1.22	1.28	1.79	2.57	3.40	35.2	1.43	1.23	1.11	50.0	228.0	-0.30
50.0	1.15	1.23	1.29	1.77	2.54	3.37	50.0	1.45	1.24	1.12	68.2	225.8	-0.27
65.3	1.15	1.23	1.29	1.75	2.49	3.29	65.3	1.45	1.24	1.12	97.4	226.8	-0.27
100.0	1.15	1.22	1.28	1.70	2.44	3.24	100.0	1.45	1.25	1.13	126.5	227.3	-0.01
155.8	1.14	1.22	1.27	1.72	2.43	3.29	155.8	1.45	1.25	1.14	184.7	231.2	-0.21
200.0	1.15	1.23	1.28	1.68	2.36	3.19	200.0	1.46	1.27	1.16	213.8	228.9	-0.14
246.2	1.16	1.23	1.28	1.69	2.37	3.14	246.2	1.47	1.28	1.17	272.1	232.0	-0.06
306.5	1.18	1.25	1.30	1.71	2.40	3.16	306.5	1.51	1.31	1.20	330.3	243.0	0.13
366.8	1.21	1.27	1.32	1.75	2.39	3.15	366.8	1.54	1.34	1.23	388.5	241.6	0.44
427.1	1.24	1.30	1.35	1.81	2.44	3.24	427.1	1.56	1.37	1.26	446.8	221.4	1.08
500.0	1.30	1.36	1.41	1.91	2.58	3.36	500.0	1.55	1.35	1.25	505.0	210.1	0.90
577.9	1.39	1.44	1.49	2.07	2.74	3.57	577.9	1.61	1.43	1.33	592.4	199.0	0.85
668.3	1.52	1.56	1.61	2.26	2.95	3.85	668.3	1.63	1.46	1.36	679.7	195.2	1.19
758.8	1.68	1.72	1.77	2.50	3.17	4.04	758.8	1.62	1.46	1.37	767.1	196.7	2.99
849.2	1.91	1.95	1.99	2.81	3.58	4.39	849.2	1.59	1.44	1.37	854.4	185.4	3.77
909.5	2.09	2.13	2.17	2.96	3.70	4.51	909.5	1.56	1.43	1.37	912.6	176.7	4.58
1000.0	2.44	2.45	2.48	3.15	3.80	4.52	1000.0	1.49	1.38	1.33	1000.0	174.3	5.34

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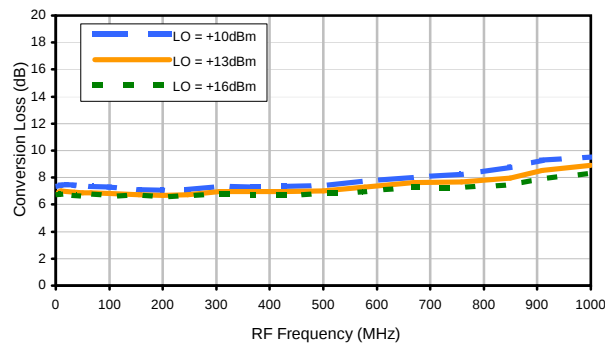


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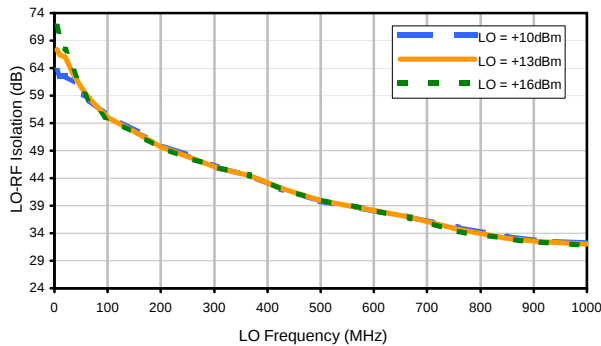


Typical Performance Curves

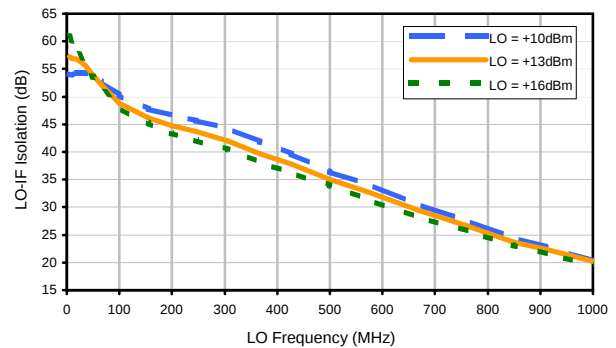
Conversion Loss



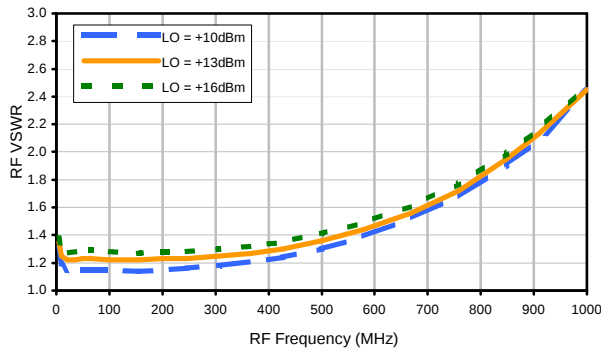
LO-RF Isolation



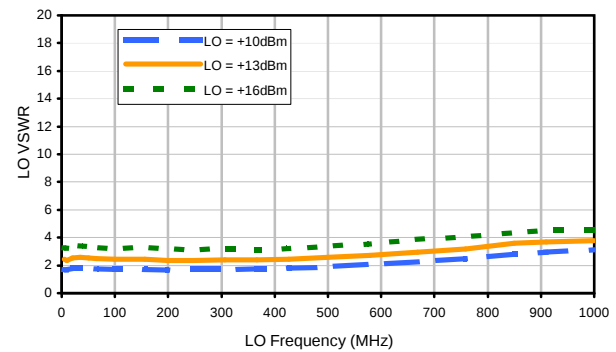
LO-IF Isolation



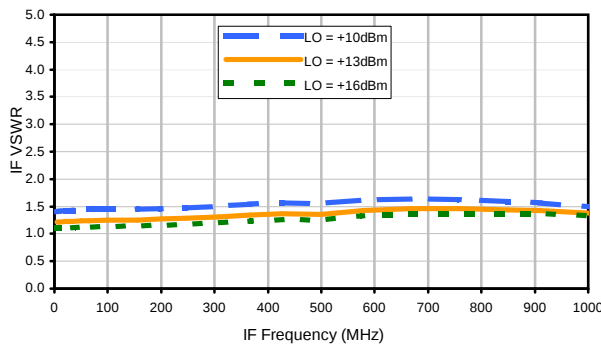
RF VSWR



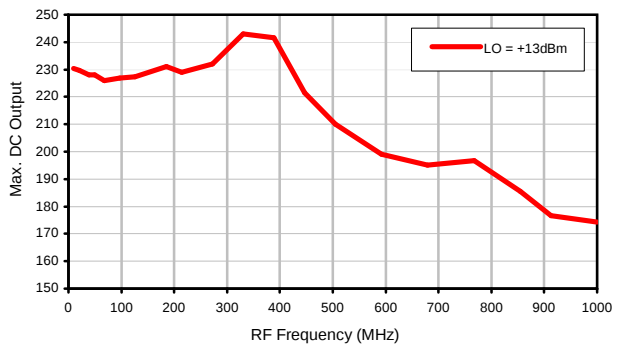
LO VSWR



IF VSWR



Max. DC Output



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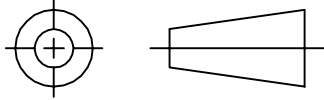
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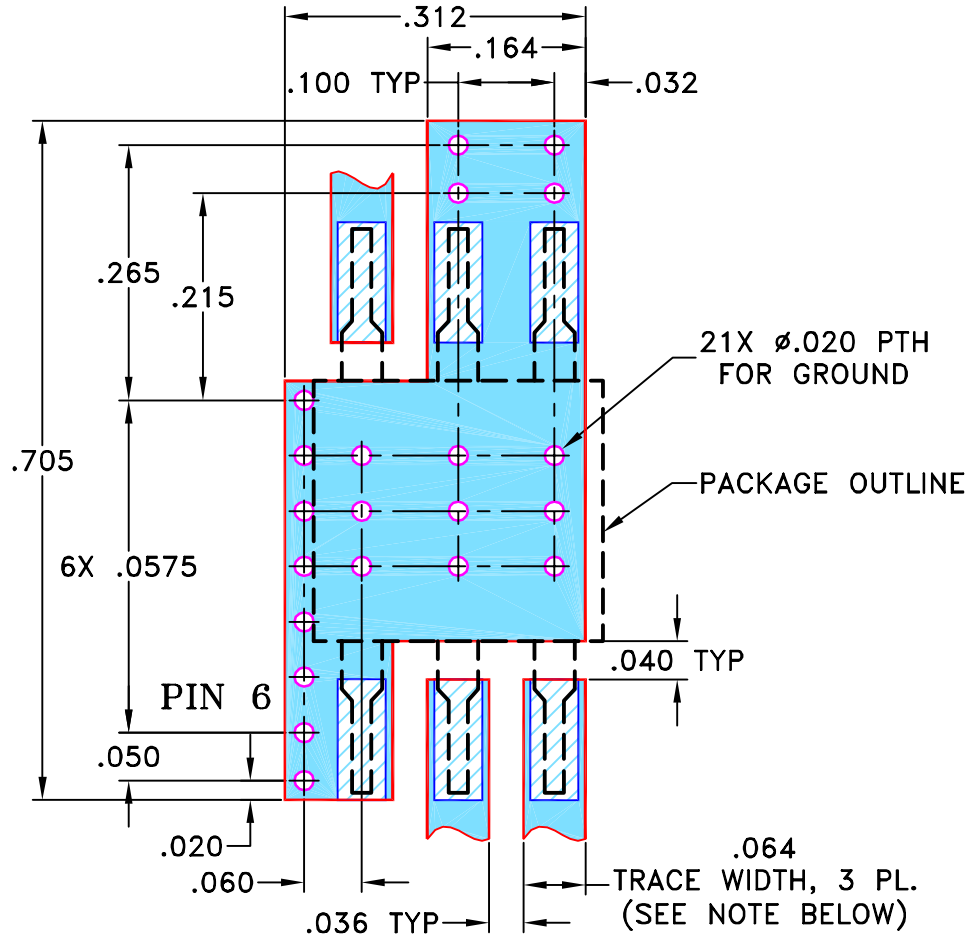
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82272	NEW RELEASE	08/02/02	AV	DJ
A	M102713	UPDATED NOTES	01/14/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR KK81 CASE STYLE, "w" PIN CONNECTION



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.030" \pm 0.002"$; 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

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES ON:
2 PL DECIMALS $\pm$
3 PL DECIMALS $\pm$.005
ANGLES $\pm$
FRACTIONS $\pm$

DRAWN

AV

07/23/02

CHECKED

WL

08/02/02

APPROVED

DJ

08/02/02



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PL, w, KK81, ASK, TB-174

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SIZE
A

CODE IDENT
15542

DRAWING NO:
98-PL-082

REV:
A

FILE: 98PL082

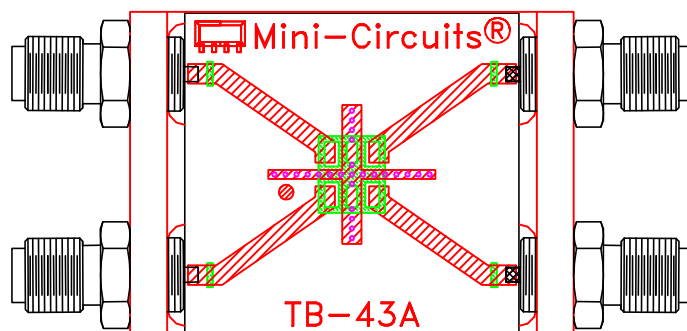
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SHEET: 1 OF 1

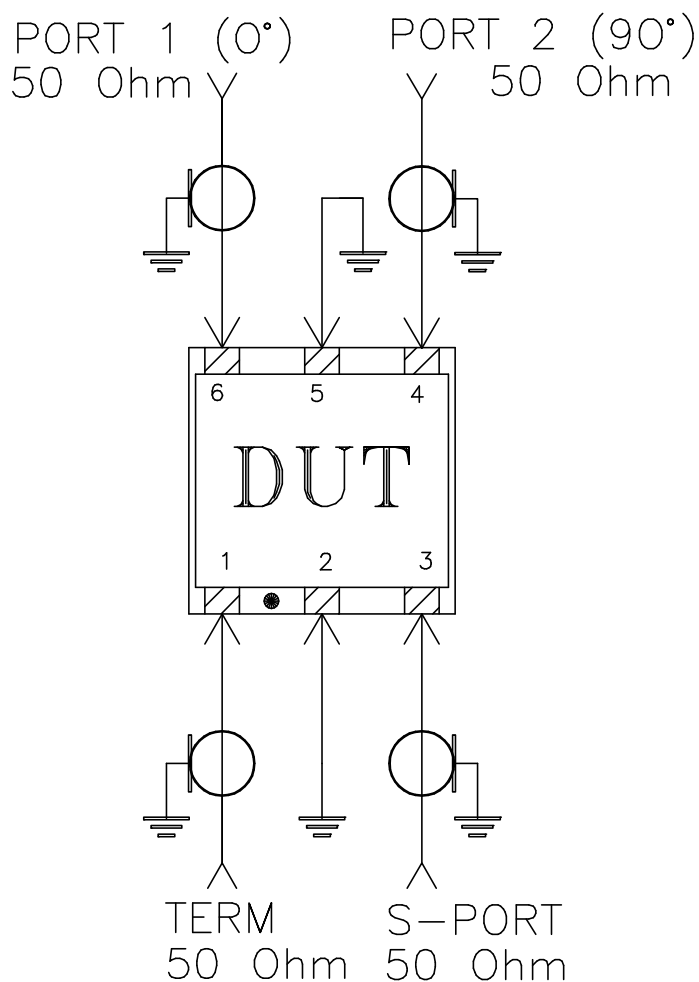
ASHEETA1.DWG REV:A DATE:01/12/95

Evaluation Board and Circuit

For Pin Connection refer to Data Sheet of the DUT



TB-43



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215