

# Surface Mount Image Reject Mixer

## RCIR-161LH+

Level 10 (LO Power +10dBm) 80 to 168 MHz



CASE STYLE: HU1416

### Maximum Ratings

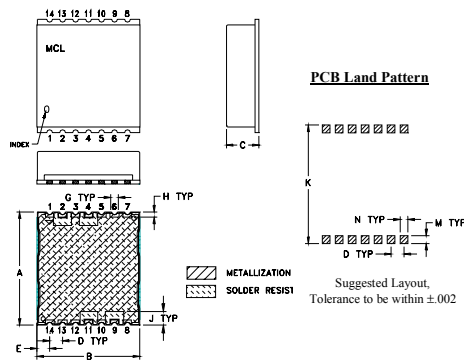
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	100mW
IF Current	40mA

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

### Pad Connections

LO	2
RF	9
IF	4
GROUND	1,3,4,5,6,7,8,10,12,13,14
50 OHM TERM EXTERNAL	11

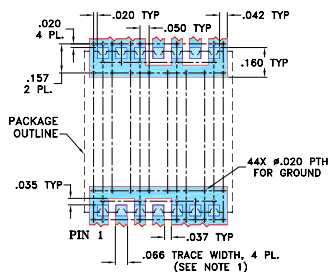
### Outline Drawing



### Outline Dimensions (inch)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	wt
.870	.800	.25	.100	.097	--	.060	.040	.105	.910	--	.060	.060	--	grams
22.10	20.32	6.35	2.54	2.46	--	1.52	1.02	2.67	23.11	--	1.52	1.52	--	2.85

### Demo Board MCL P/N: TB-516+ Suggested PCB Layout (PL-298)



- 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 PCB IS CONTINUOUS GROUND PLANE.

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

#### 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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### Features

- excellent image rejection, 32 dB typ.
- low conversion loss, 6.1 dB typ.
- aqueous washable

### Applications

- VHF
- military and avionics

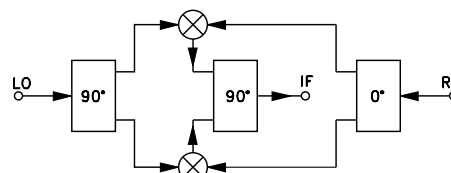
### Electrical Specifications at 25°C

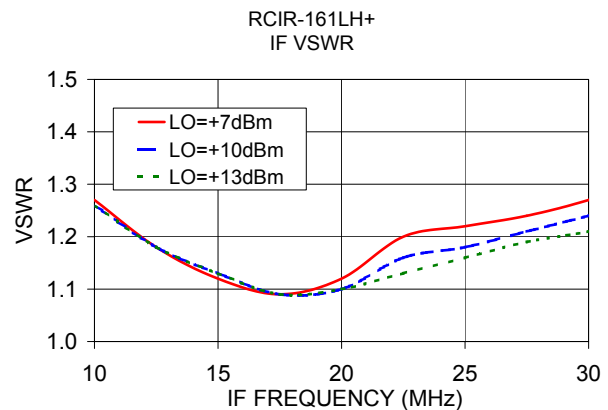
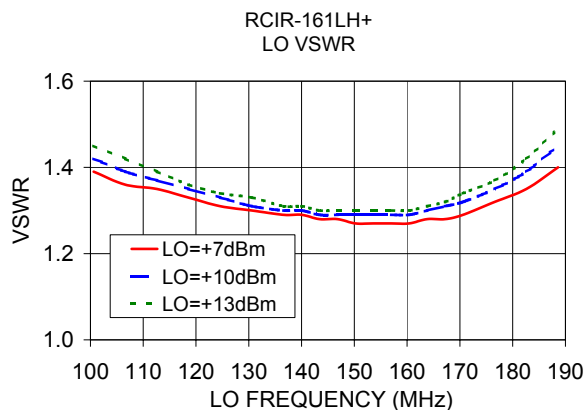
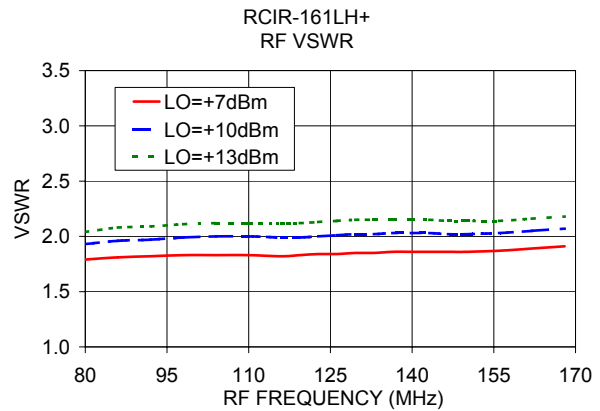
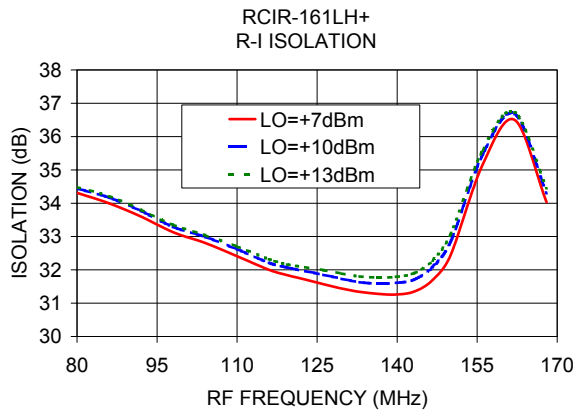
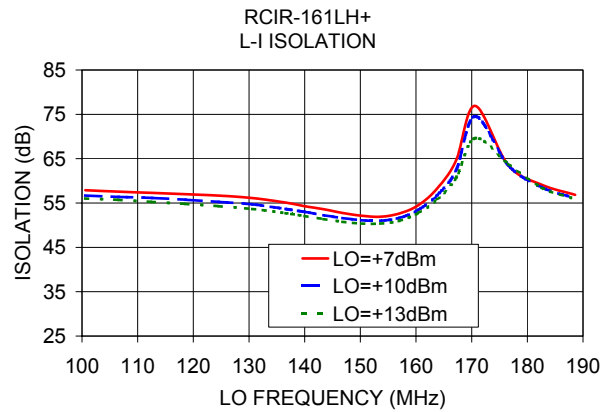
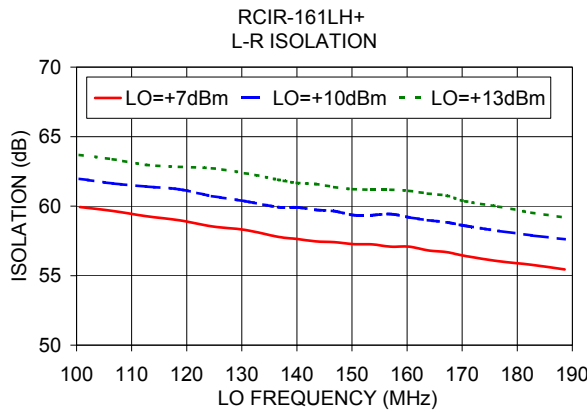
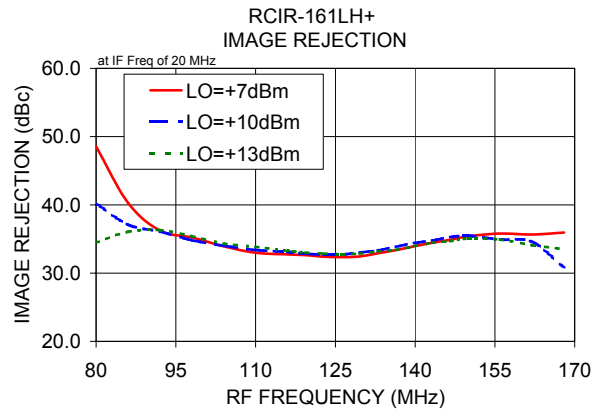
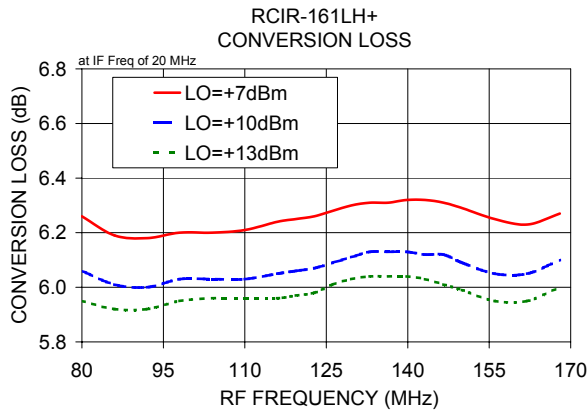
Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range, RF		80	—	168	MHz
Frequency Range, LO		100	—	188	MHz
Frequency Range, IF		18	—	22	MHz
Conversion Loss (RF<LO)	80-168	—	6.1	7.3	dB
Image Rejection (RF>LO)	120-208	18	31	—	dBc
LO to RF Isolation	100-188	45	58	—	dB
LO to IF Isolation	100-188	32	48	—	dB
RF to IF Isolation	80-168	18	31	—	dB
IP3	80-168	—	17	—	dBm
RF Input Power at 1 dB	80-168	—	+1	—	dBm

### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Image Rejection (dBc)	Isolation (dB)			VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO			L-R	L-I	R-I		
80.00	100.60	6.06	40.21	61.96	56.69	34.44	1.93	1.42
86.00	106.60	6.01	37.10	61.63	56.38	34.17	1.96	1.39
92.00	112.60	6.00	36.09	61.41	56.14	33.77	1.97	1.37
98.00	118.60	6.03	34.82	61.21	55.74	33.29	1.99	1.35
104.00	124.60	6.03	34.01	60.72	55.24	32.99	2.00	1.33
110.00	130.60	6.03	33.39	60.36	54.69	32.62	2.00	1.31
116.00	136.60	6.05	33.10	59.93	53.65	32.21	1.99	1.30
119.40	140.00	6.06	32.84	59.91	53.00	32.07	1.99	1.30
122.80	143.40	6.07	32.71	59.73	52.26	31.96	2.00	1.29
126.20	146.80	6.09	32.72	59.64	51.62	31.85	2.01	1.29
129.60	150.20	6.11	33.02	59.36	51.11	31.73	2.02	1.29
133.00	153.60	6.13	33.32	59.35	51.02	31.63	2.02	1.29
136.40	157.00	6.13	33.86	59.43	51.64	31.59	2.03	1.29
139.80	160.40	6.13	34.40	59.19	53.46	31.61	2.03	1.29
143.20	163.80	6.12	34.77	58.99	56.74	31.71	2.03	1.30
146.60	167.20	6.12	35.26	58.84	62.35	32.08	2.02	1.31
150.00	170.60	6.09	35.48	58.58	74.54	32.83	2.02	1.32
156.00	176.60	6.05	34.92	58.22	63.49	35.45	2.03	1.35
162.00	182.60	6.05	34.60	57.89	58.54	36.68	2.05	1.39
168.00	188.60	6.10	30.83	57.62	56.10	34.30	2.07	1.45

### Electrical Schematic





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