

Surface Mount Image Reject Mixer

RCIR-42LH+

Level 10 (LO Power +10dBm) 125 to 425 MHz



CASE STYLE: HU1416

Maximum Ratings

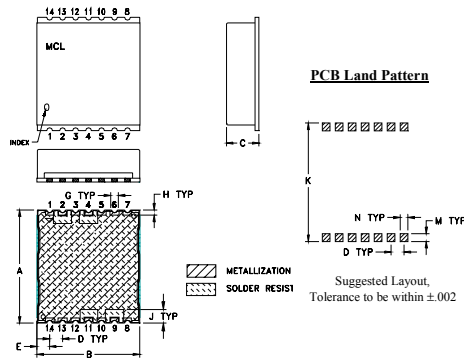
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	100mW
IF Current	40mA

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

Pin Connections

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

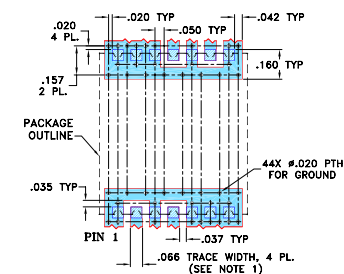
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
.870	.800	.25	.100	.097	--	.060	.040
22.10	20.32	6.35	2.54	2.46	--	1.52	1.02
J	K	L	M	N	P	wt	
.105	.910	--	.060	.060	--	grams	
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.
C. The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- excellent image rejection, 31 dB typ.
- low conversion loss, 6.3 dB typ.
- aqueous washable

Applications

- UHF
- military and avionics

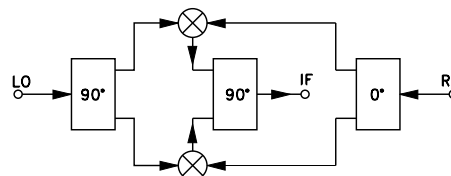
Electrical Specifications at 25°C

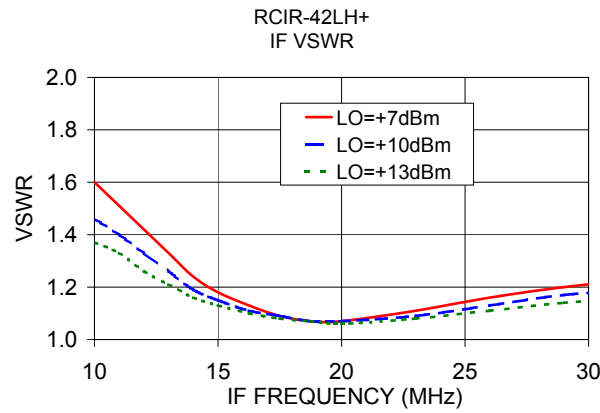
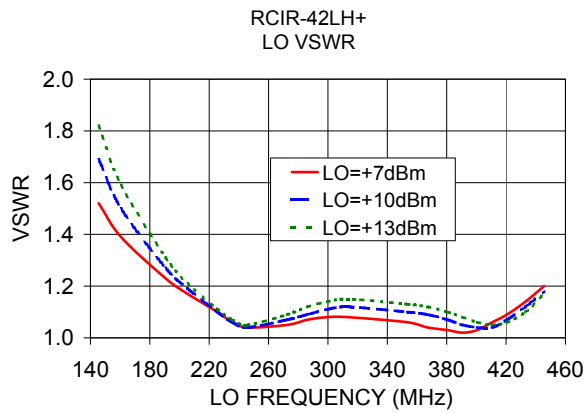
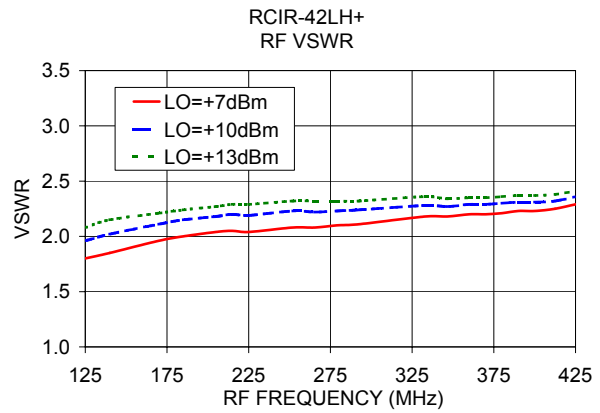
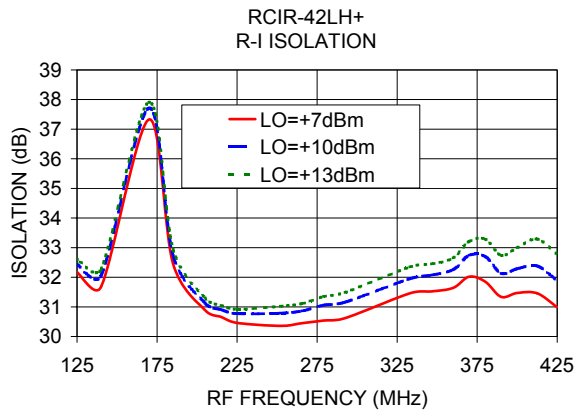
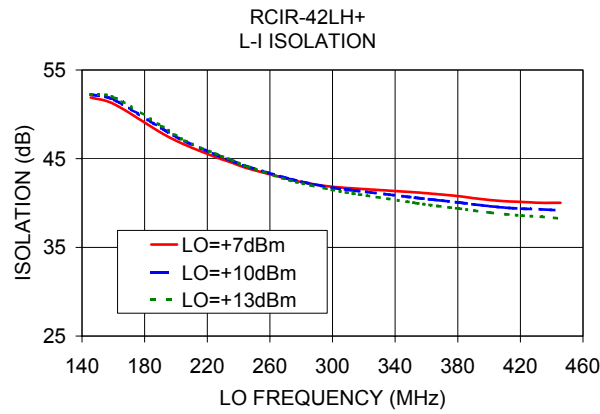
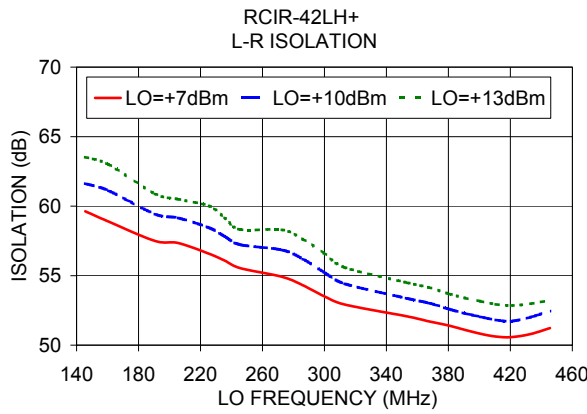
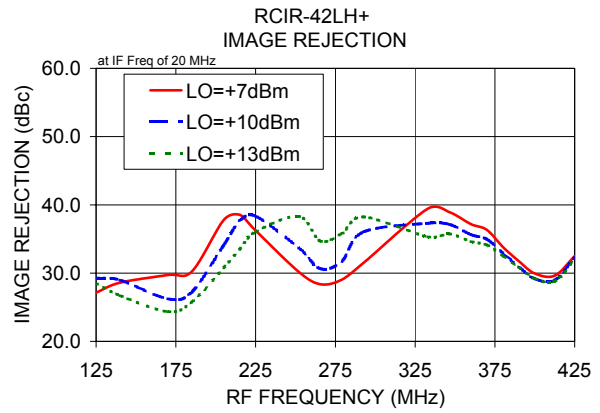
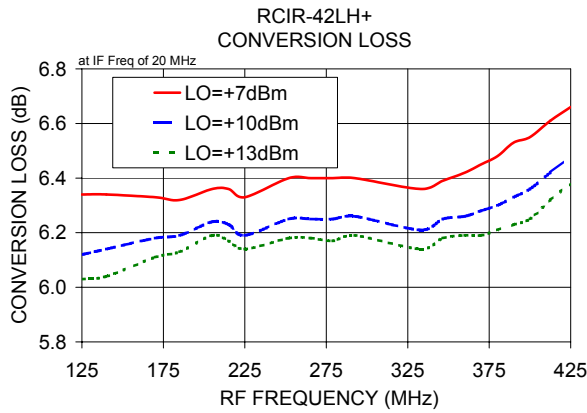
Parameter	Min.	Typ.	Max.	Unit
Frequency Range, RF	125	—	425	MHz
Frequency Range, LO	145	—	445	MHz
Frequency Range, IF	18	—	22	MHz
Conversion Loss (RF<LO)		6.5	7.5	dB
Image Rejection (RF>LO)	18	25	—	dBc
LO to RF Isolation	40	50	—	dB
LO to IF Isolation	28	37	—	dB
RF to IF Isolation	20	29	—	dB
IP3	—	13	—	dBm
RF Input Power at 1 dB Compression	—	+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	L-R	L-I	R-I		
125.00	145.60	6.12	29.29	61.62	52.24	32.43	1.96	1.69		
140.00	160.60	6.14	28.98	61.12	51.63	32.05	2.02	1.50		
170.00	190.60	6.18	26.24	59.43	48.44	37.71	2.11	1.27		
185.00	205.60	6.19	27.23	59.15	46.97	32.74	2.15	1.19		
205.00	225.60	6.24	34.07	58.44	45.45	31.13	2.18	1.10		
215.00	235.60	6.23	37.66	57.82	44.78	30.91	2.20	1.06		
225.00	245.60	6.19	38.35	57.23	44.11	30.77	2.19	1.04		
252.00	272.60	6.25	33.71	56.85	42.73	30.79	2.23	1.07		
265.50	286.10	6.25	30.66	56.20	42.18	30.86	2.22	1.09		
279.00	299.60	6.25	31.73	55.26	41.74	31.06	2.23	1.11		
292.50	313.10	6.26	36.03	54.42	41.43	31.16	2.24	1.12		
333.00	353.60	6.21	37.31	53.36	40.59	31.95	2.28	1.10		
346.50	367.10	6.25	37.14	53.04	40.32	32.07	2.27	1.09		
360.00	380.60	6.26	35.63	52.59	40.06	32.26	2.29	1.07		
370.00	390.60	6.28	34.96	52.29	39.84	32.74	2.29	1.05		
380.00	400.60	6.30	32.93	52.04	39.64	32.70	2.30	1.04		
390.00	410.60	6.33	30.95	51.81	39.48	32.13	2.31	1.04		
400.00	420.60	6.36	29.18	51.73	39.37	32.29	2.31	1.07		
412.50	433.10	6.42	28.97	52.01	39.29	32.38	2.32	1.12		
425.00	445.60	6.48	32.31	52.46	39.17	31.89	2.36	1.18		

Electrical Schematic





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