

Ceramic Active Mixer

MACA-63H+

Level 0 (LO Power 0 dBm) 2000 to 6000 MHz



CASE STYLE: DZ1034

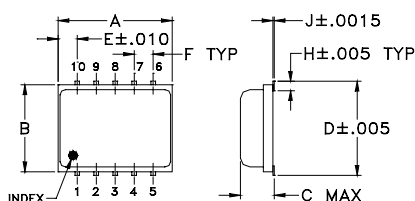
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	100mW
IF Current	40mA
LO Power	10mW
Permanent damage may occur if any of these limits are exceeded.	

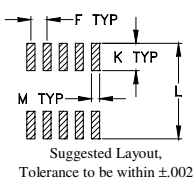
Pin Connections

LO	10
RF	5
IF	3
DC	7
GROUND	1,2,4,6,8,9

Outline Drawing



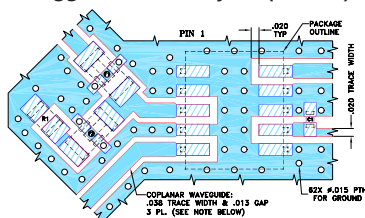
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	
.30	.250	.105	.266	.050	.050	.012	
7.62	6.35	2.67	6.76	1.27	1.27	0.30	
H	J	K	L	M		wt	
.029	.004	.085	.296	.030		grams	
0.74	0.10	2.16	7.52	0.76		0.3	

Demo Board MCL P/N: TB-404 Suggested PCB Layout (PL-283)



CAPACITOR C1: 1000 pF, 0402 SIZE
RESISTOR R1: 49.9 Ohm, 0805 SIZE
FILTER F1: LFCN-1400+, FV1206 CASE STYLE
FILTER F2: HFCN-1810+, FV1206 CASE STYLE

NOTE: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015". 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

- 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-Circuit's applicable established test performance criteria and measurement instructions.
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Features

- low conversion loss, 6.9 dB typ.
- wide bandwidth, 2000 to 6000 MHz
- LTCC double balanced mixer with LO amplifier
- aqueous washable
- low profile
- low cost
- protected by US patent 7,027,795

Applications

- PCN
- defense & weather radar
- WCDMA
- defense communications

Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS* (dB)	LO-RF ISOLATION (dB)	LO-IF ISOLATION (dB)	DC POWER		IP3 at center band (dBm)
				Volt	Current (mA) Max.	
LO/RF f _c -f _u	IF X̄ σ Max.	Typ. Min.	Typ. Min.			Typ.
2000-3500	DC-1000	6.9 0.1 8.9	16 10	5 110		20
3500-6000	DC-1000	6.9 0.1 8.9	8 3	5 110		19

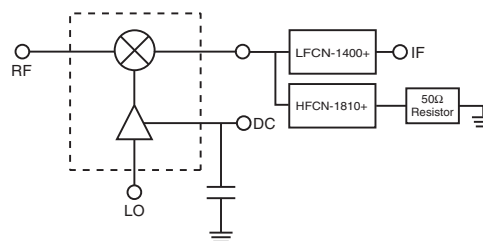
1 dB Compr. +10 dBm typ.

* Conversion loss at 30 MHz IF.

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
2005.10	1975.10	6.41	22.93	35.96	2.40	5.17
2205.10	2175.10	6.50	20.61	45.55	2.42	5.83
2405.10	2375.10	5.80	21.34	33.28	2.11	3.80
2605.10	2575.10	5.89	18.60	33.35	1.87	3.21
2805.10	2775.10	6.96	17.66	35.62	3.43	3.09
3005.10	2975.10	6.65	14.13	36.97	2.95	3.10
3205.10	3175.10	7.25	12.80	36.60	3.12	3.17
3405.10	3375.10	7.25	15.03	34.47	3.15	2.97
3605.10	3575.10	7.95	14.75	33.49	3.73	2.39
3805.10	3775.10	7.78	18.55	31.52	3.26	1.82
4005.10	3975.10	7.16	18.19	32.59	2.66	1.44
4405.10	4375.10	6.15	8.68	37.37	1.40	1.48
4605.10	4575.10	6.67	8.24	37.63	1.63	1.56
4805.10	4775.10	7.06	8.76	37.81	1.58	1.62
5005.10	4975.10	6.81	6.77	36.56	1.17	1.67
5205.10	5175.10	6.40	6.01	35.48	1.61	1.60
5405.10	5375.10	6.46	6.05	34.71	1.65	1.47
5605.10	5575.10	6.95	7.12	33.12	2.21	1.36
5805.10	5775.10	7.27	7.91	33.45	2.57	1.35
6005.10	5975.10	7.48	8.62	33.08	2.82	1.43

Electrical Schematic

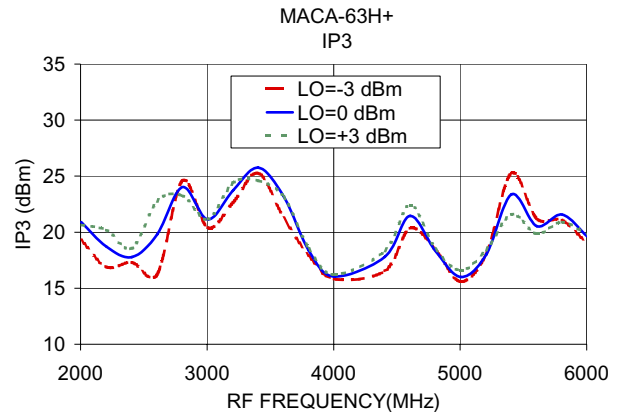
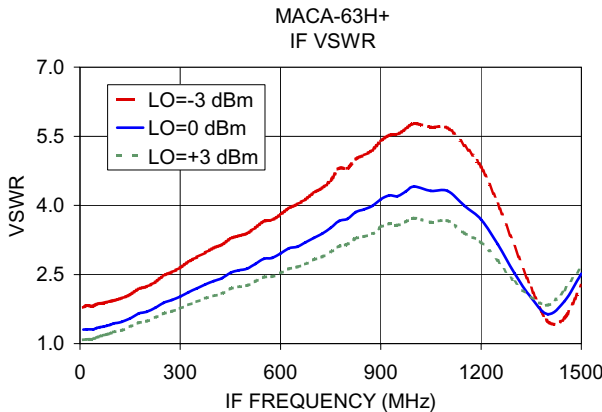
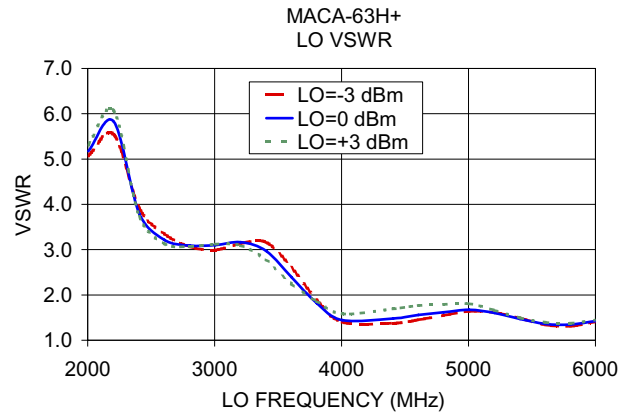
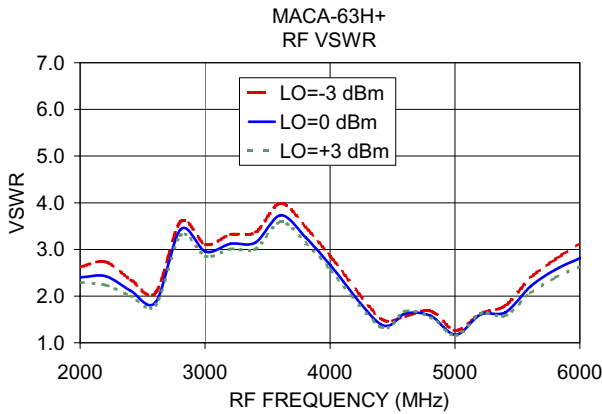
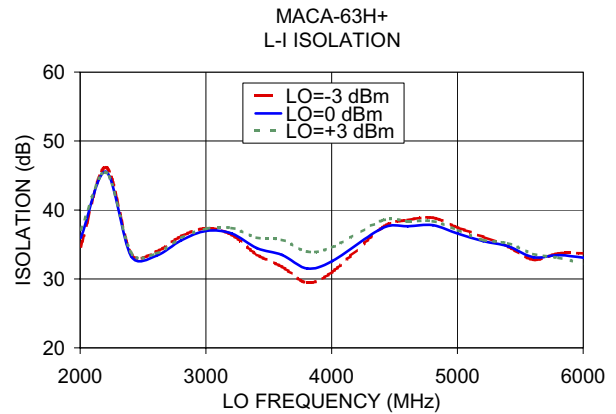
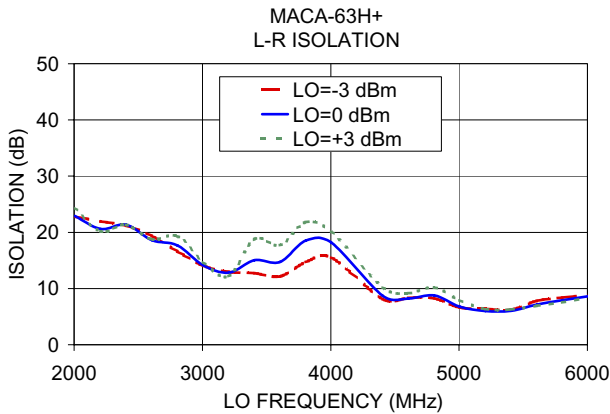
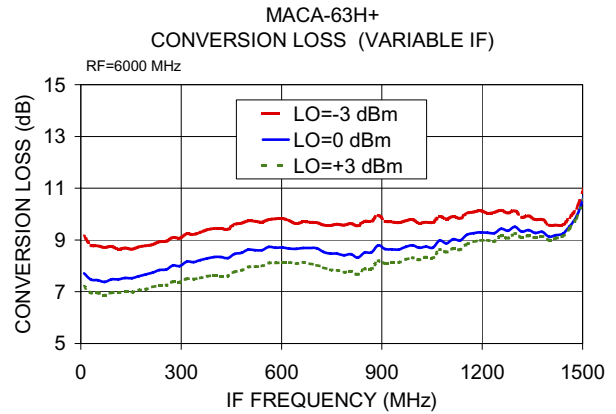
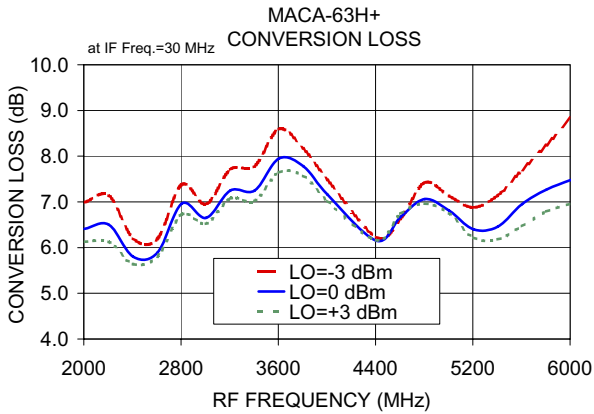


LFCN-1400+ & HFCN-1810+ are added to improve isolations.



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