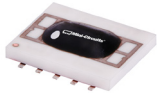


Ceramic

Active Mixer

Level -3 (LO Power -3 dBm) 750 to 2400 MHz

MACA-242H+



Generic photo used for illustration purposes only
CASE STYLE: DZ1034

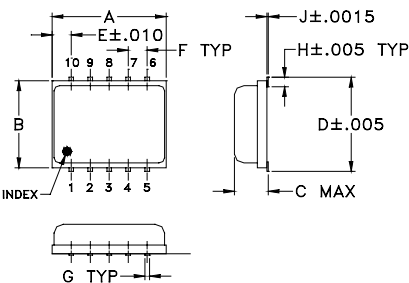
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	100mW
IF Current	40mA
LO Power	10mW

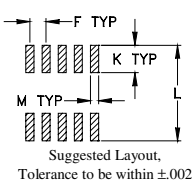
Pin Connections

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

Outline Drawing



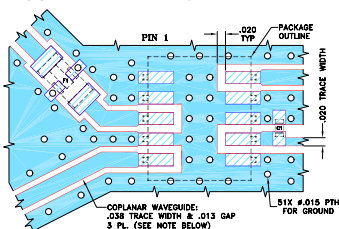
PCB Land Pattern



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-MACA-242H+
Suggested PCB Layout (PL-145)



Capacitor C1: 1000 pF, 0402 size
Filter F1: LFCN-490+, 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.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- Low conversion loss, 6.1 dB typ.
- Wide bandwidth, 750 to 2400 MHz
- LTCC double balanced mixer with LO amplifier
- Aqueous washable
- Low profile
- Low cost
- Protected by U.S. Patent 7,027,795

Applications

- PCN
- defense & weather radar
- cellular
- UHF TV

Electrical Specifications

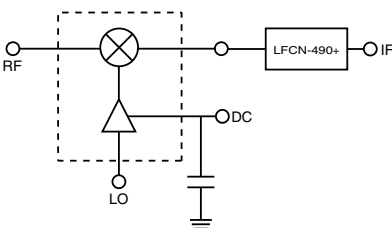
FREQUENCY (MHz)	CONVERSION LOSS* (dB)	LO-RF ISOLATION (dB)	LO-IF ISOLATION (dB)	DC POWER	IP3 at center band (dBm)
LO/RF f _L f _U	IF	X σ Max.	Typ. Min.	Typ. Min.	Current (mA) Max. Typ.
750-2400	DC-500	6.1 0.1 9.8	20 4	55 28	5 110 18

1 dB Compr. +10 dBm typ.
*Conversion Loss at IF= 30 MHz.

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	LO	LO -3dBm	LO -3dBm	LO -3dBm	LO -3dBm
740.00	710.00	5.98	25.78	32.91	2.24
800.00	770.00	6.25	21.44	40.53	2.11
900.00	870.00	9.01	21.78	51.64	1.96
1000.00	970.00	7.39	15.99	36.56	1.90
1100.00	1070.00	6.51	11.39	46.11	1.60
1200.00	1170.00	8.22	14.01	56.21	1.45
1300.00	1270.00	7.75	23.06	62.69	1.25
1400.00	1370.00	6.35	19.72	65.30	1.10
1500.00	1470.00	6.15	17.29	69.44	1.42
1600.00	1570.00	5.22	12.57	71.04	1.53
1700.00	1670.00	5.23	8.87	61.70	1.49
1800.00	1770.00	5.58	14.87	58.23	1.38
1900.00	1870.00	5.41	18.11	54.22	1.29
2000.00	1970.00	6.16	17.88	52.30	1.16
2100.00	2070.00	8.05	14.77	52.20	1.24
2140.00	2110.00	7.81	16.43	53.26	1.33
2200.00	2170.00	7.37	15.65	57.24	1.45
2300.00	2270.00	6.90	16.43	60.29	1.72
2340.00	2310.00	6.79	17.73	58.64	1.88
2400.00	2370.00	6.92	22.78	58.59	2.05

Electrical Schematic

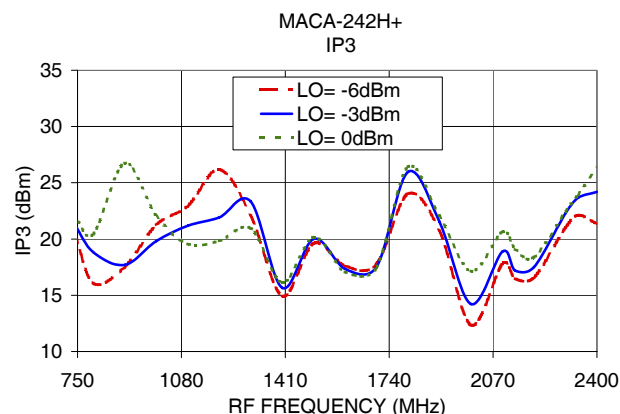
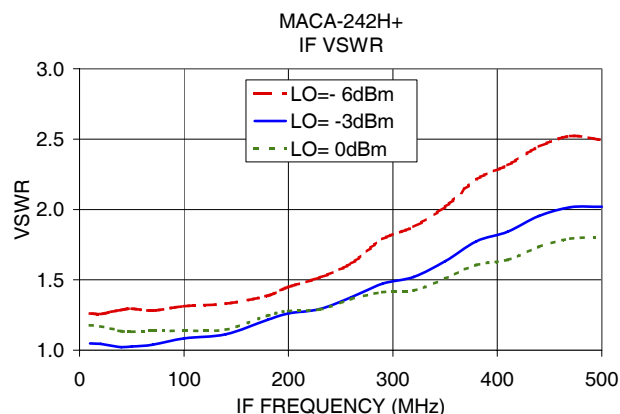
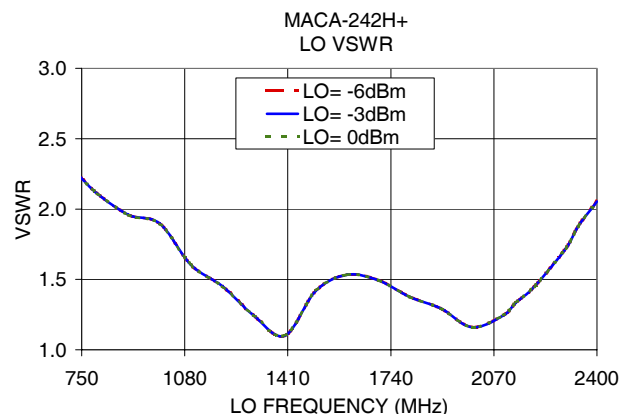
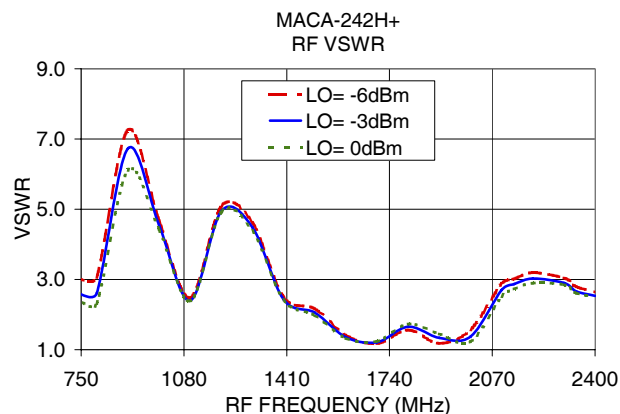
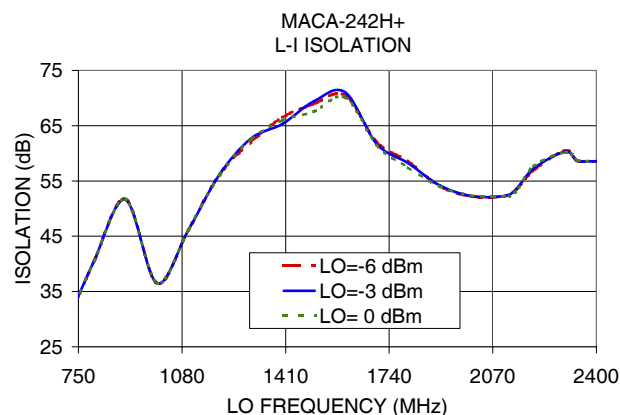
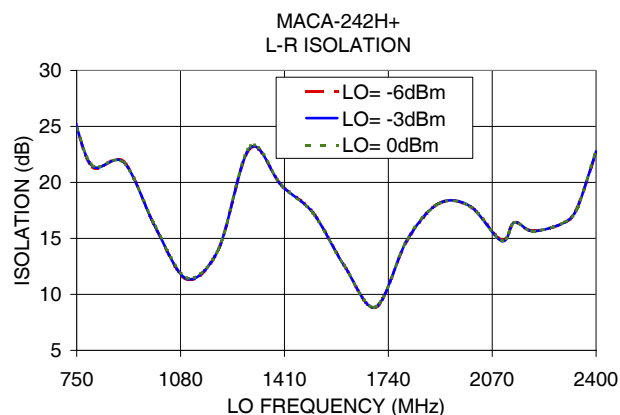
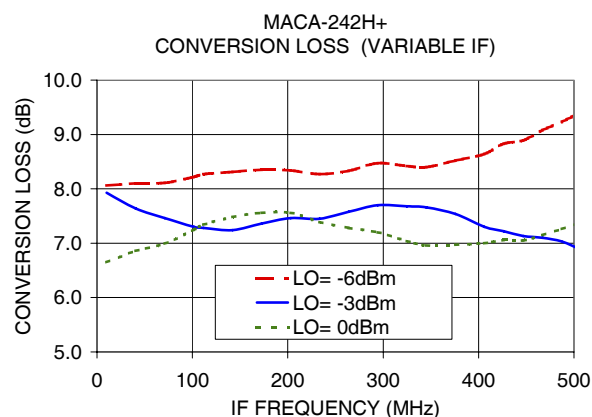
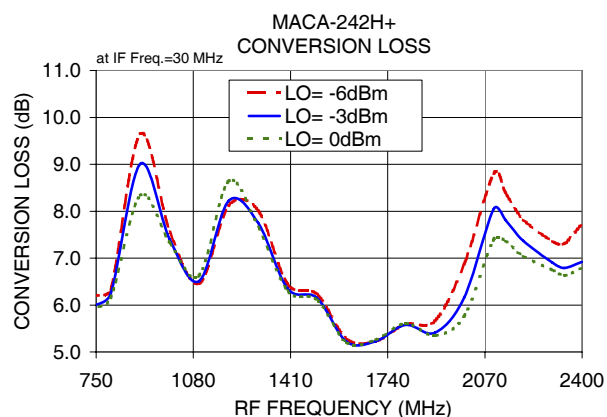


LFCN-490+ is added to improve L-I isolation.



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REV. B
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MACA-242H
ED10457/8
MCL NY
250702



Notes:
A. Performance is typical and subject to change without notice. The performance shown is intended to be typical and does not represent a guarantee of performance.
B. The performance shown is for a typical device. The performance of individual devices may vary. The performance shown is for a typical device.
C. The performance shown is for a typical device. The performance of individual devices may vary. The performance shown is for a typical device.