Surface Mount

Frequency Mixer

ADE-20+

Level 7 (LO Power +7 dBm) 1500 to 2000 MHz



Generic photo used for illustration purposes only

CASE STYLE: CD542

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200
13"	500, 1000

Maximum Ratings

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

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

Pin Connections

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

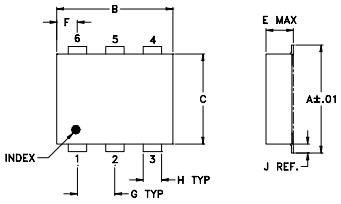
Features

- low conversion loss, 5.4 dB typ.
- excellent isolation, 31 dB typ.
- low profile package
- aqueous washable
- protected by U.S. Patent 6,133,525

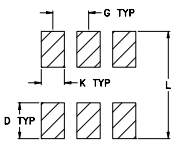
Applications

- digital cellular
- digital cordless phone
- PCN

Outline Drawing



PCB Land Pattern



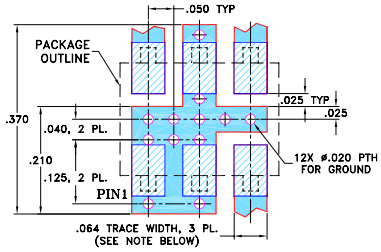
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.59	2.54	2.84	1.40	2.54

H	J	K	L	wt
.030	.026	.065	.300	grams
0.76	0.66	1.65	7.62	0.20

Demo Board MCL P/N: TB-02
Suggested PCB Layout (PL-051)



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

Electrical Specifications

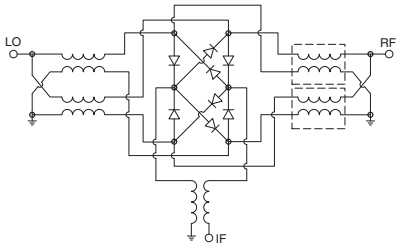
FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF	IF								
f_L-f_U		$\overline{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
1500-2000	DC-300	5.4	0.10	7.8	31	22	28	20	14

1 dB COMP.: +1 dBm typ.

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 +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
1500.00	1530.00	5.80	37.30	31.70	1.59	1.21
1535.71	1565.71	5.77	36.90	32.60	1.49	1.31
1571.43	1601.43	5.78	36.50	32.90	1.46	1.41
1600.00	1630.00	5.87	36.30	32.90	1.45	1.49
1607.14	1637.14	5.76	36.20	32.90	1.43	1.52
1642.86	1672.86	5.78	36.00	33.00	1.40	1.57
1650.00	1680.00	5.91	36.00	33.00	1.41	1.60
1678.57	1708.57	5.87	35.70	32.90	1.41	1.66
1700.00	1730.00	5.94	35.40	33.10	1.40	1.68
1714.29	1744.29	5.96	35.30	33.00	1.40	1.69
1750.00	1780.00	5.97	35.10	33.00	1.44	1.71
1785.71	1815.71	5.96	35.20	33.00	1.48	1.70
1800.00	1830.00	6.04	35.20	33.20	1.48	1.69
1821.43	1851.43	5.97	35.40	33.20	1.52	1.68
1857.14	1887.14	5.96	35.70	33.20	1.59	1.67
1892.86	1922.86	6.00	36.10	33.20	1.61	1.61
1900.00	1930.00	5.98	36.20	33.20	1.62	1.60
1928.57	1958.57	5.99	36.30	33.20	1.70	1.57
1964.29	1994.29	5.94	36.60	33.10	1.78	1.50
2000.00	2030.00	5.93	36.60	33.10	1.84	1.46

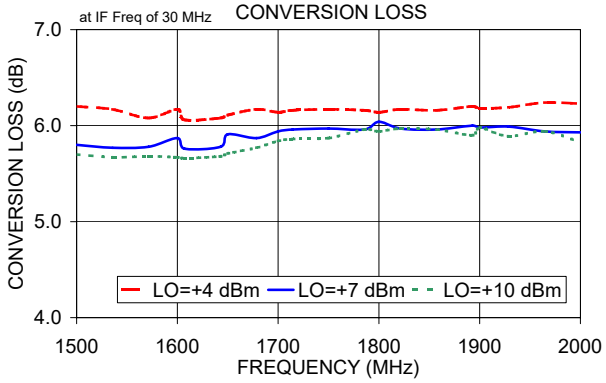
Electrical Schematic



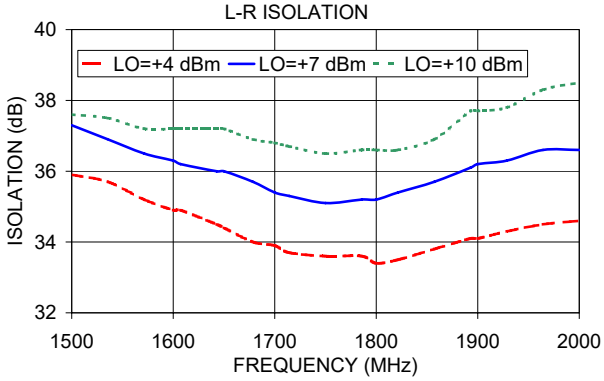
Notes

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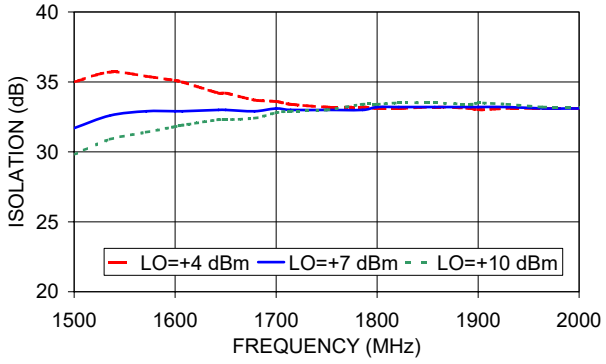
ADE-20+
at IF Freq of 30 MHz
CONVERSION LOSS



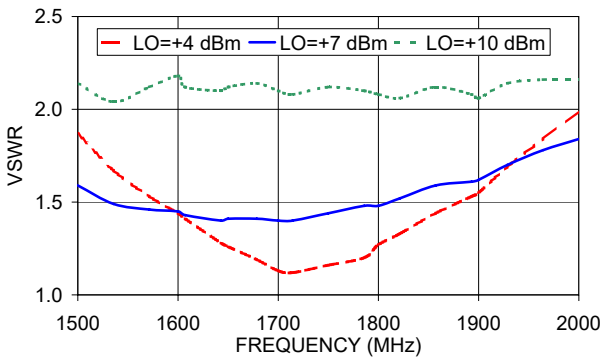
ADE-20+
L-R ISOLATION



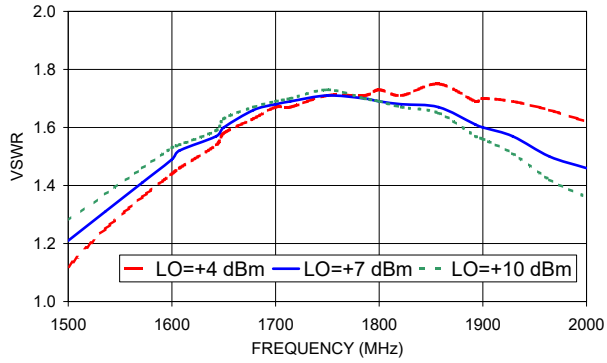
ADE-20+
L-I ISOLATION



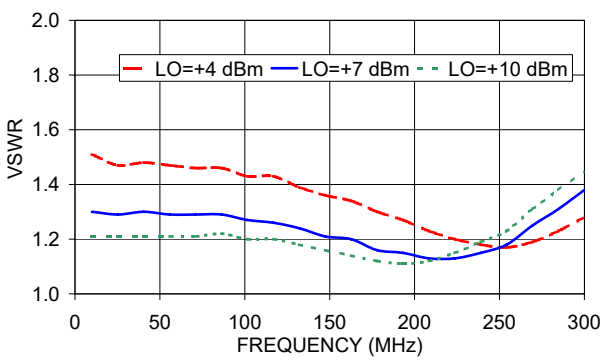
ADE-20+
RF VSWR



ADE-20+
LO VSWR



ADE-20
IF VSWR



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