Surface Mount

Frequency Mixer

SCM-2+
SCM-2

Level 7 (LO Power +7 dBm) 5 to 1000 MHz



CASE STYLE: YY109
PRICE: $5.45 ea. QTY (1-9)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

Maximum Ratings

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

Pin Connections

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

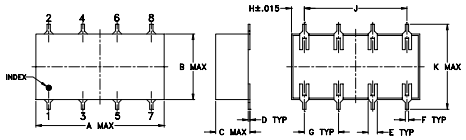
Features

- low conversion loss, 5.76 dB typ.
- high isolation, 40 dB typ.
- wideband, 5 to 1000 MHz

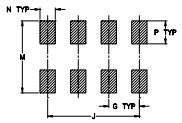
Applications

- VHF/UHF
- cellular
- GSM/ISM

Outline Drawing



PCB Land Pattern



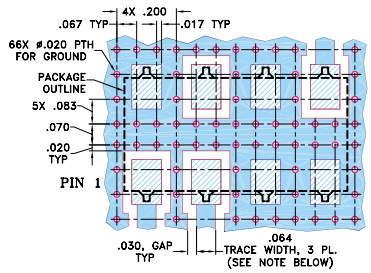
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.75	.38	.20	.010	.050	.020	.200
19.05	9.65	5.08	0.25	1.27	0.51	5.08

H	J	K	M	N	P	wt
.075	.600	.720	.740	.100	.150	grams
1.91	15.24	18.29	18.80	2.54	3.81	1.6

Demo Board MCL P/N: TB-172
Suggested PCB Layout (PL-132)



NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; 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)
		Mid-Band m			Total Range	L		M		U		L		M		U		
LO/RF f_L-f_U	IF	$\overline{X}$	σ	Max.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.
5-1000	DC-500	5.76	0.03	8.3	9.8	50	40	40	25	35	20	55	30	40	25	30	18	11

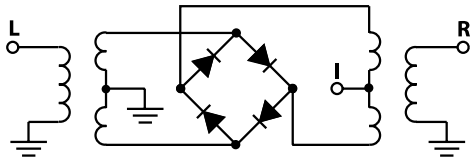
1 dB COMP.: +1 dBm typ.

L = low range [f_L to 10 f_L]
m= mid band [2f_L to f_U/2]
M = mid range [10 f_L to f_U/2]
U = upper range [f_U/2 to f_U]

Typical Performance Data

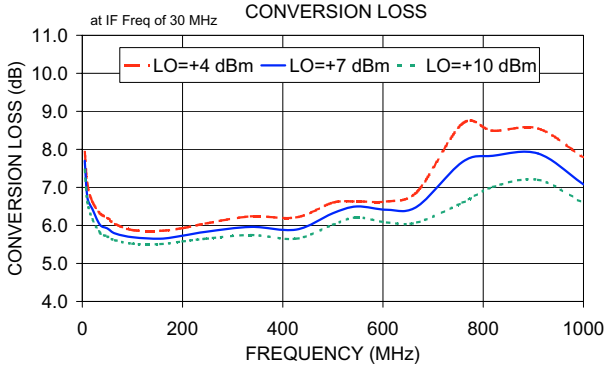
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
5.00	35.00	7.70	91.15	81.65	5.79	4.26
10.00	40.00	6.74	79.06	74.26	2.25	3.25
20.00	50.00	6.43	72.63	67.23	1.59	3.04
35.15	65.15	6.02	67.42	61.82	1.30	2.89
50.00	80.00	5.92	62.72	54.16	1.19	2.77
65.30	95.30	5.79	61.08	56.02	1.12	2.72
100.00	70.00	5.69	57.24	54.55	1.02	2.63
155.76	125.76	5.65	52.92	50.70	1.11	2.61
200.00	170.00	5.73	50.87	48.52	1.20	2.60
246.21	216.21	5.83	47.20	46.40	1.30	2.60
336.67	306.67	5.96	45.14	43.55	1.51	2.60
427.12	397.12	5.89	41.17	41.75	1.68	2.74
500.00	470.00	6.32	42.19	40.98	1.78	2.72
547.73	517.73	6.50	41.49	40.81	1.85	2.80
608.03	578.03	6.41	41.53	38.45	1.93	3.05
668.33	638.33	6.50	38.93	37.08	2.01	3.17
758.79	728.79	7.67	41.79	36.35	2.18	3.43
819.09	789.09	7.83	43.08	35.42	2.25	3.47
909.55	879.55	7.89	45.07	33.32	2.12	3.45
1000.00	970.00	7.08	39.99	28.91	1.90	3.51

Electrical Schematic

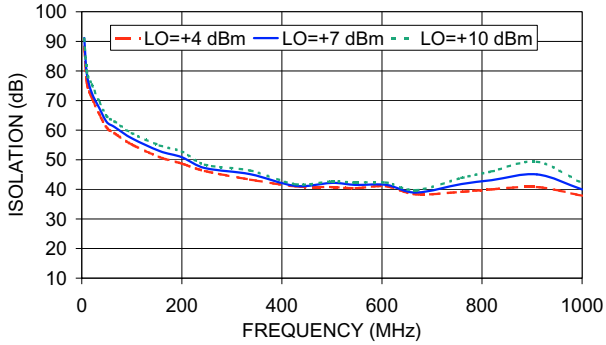


Performance Charts

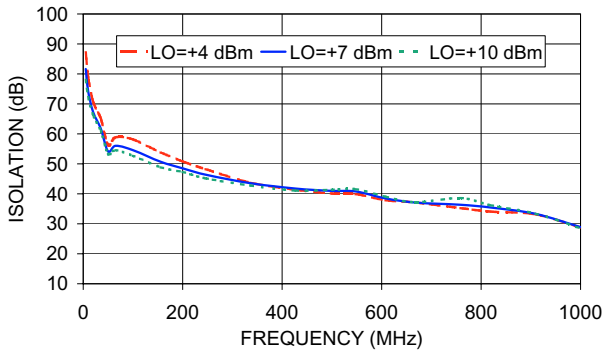
SCM-2
CONVERSION LOSS
at IF Freq of 30 MHz



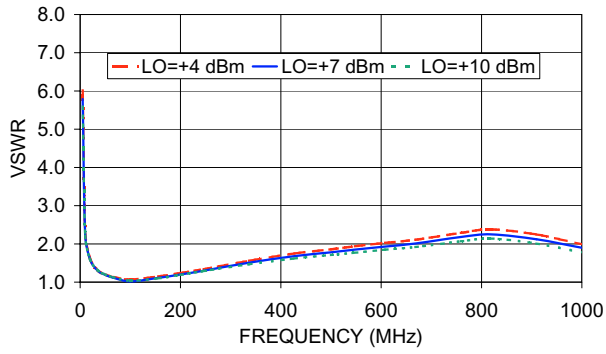
SCM-2
L-R ISOLATION



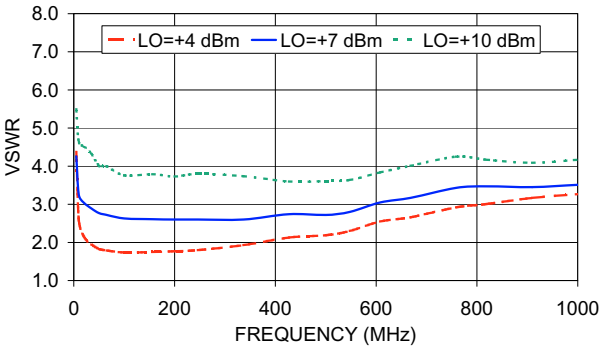
SCM-2
L-I ISOLATION



SCM-2
RF VSWR



SCM-2
LO VSWR



SCM-2
IF VSWR

