

Surface Mount

Frequency Mixer

Level 7 (LO Power +7dBm) 1 to 500 MHz

SCM-1+
SCM-1+



CASE STYLE: YY101*
PRICE: \$4.25 ea. QTY (1-9)

Features

- low conversion loss, 5.72 dB typ.
- excellent L-R, L-I isolation, 45 dB typ.
- IF response to DC

Applications

- UHF/VHF
- defense-federal communications
- instrumentation

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

See our web site for RoHS Compliance methodologies and qualifications.

Mixer Electrical Specifications

MODEL NO.	FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3@ center band Typ. (dBm)	E FACTOR						
	LO/RF f _L - f _U	IF	Mid-Band		Total Range	L	M	U	L	M	U									
			$\bar{x}$	σ								Max.			Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.
SCM-1(+)	1-500	DC-500	5.72	.10	7.0	8.0	60	40	45	35	40	30	50	40	45	35	40	25	10	0.3

1 dB COMP.: +1 dBm typ.
L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]
m = mid band [$2f_L$ to $f_U/2$]
E = $[IP3(dBm) - LO Power(dBm)]/10$

Pin Connections

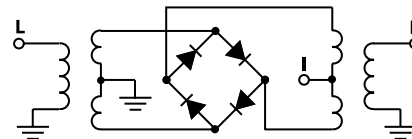
LO	8
RF	1
IF	3,4^
GROUND	2,5,6,7

^ pins must be connected together externally

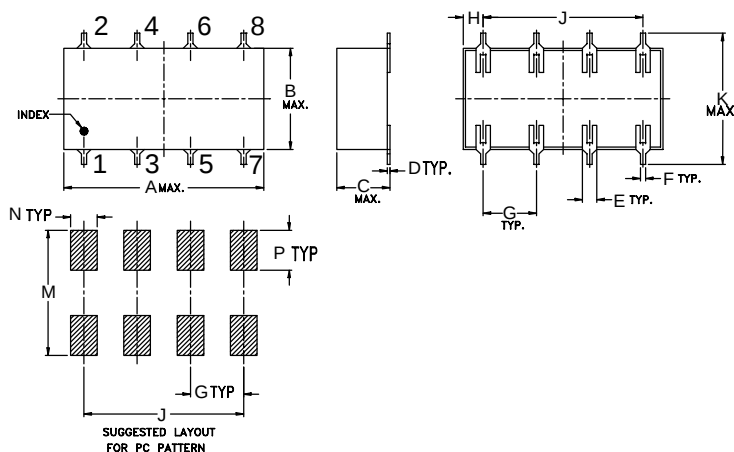
Maximum Ratings

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

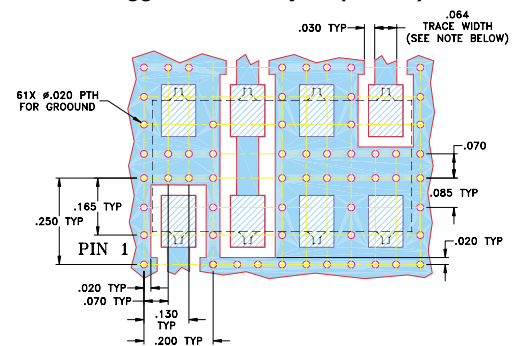
electrical schematic



Outline Drawing



Demo Board MCL P/N: TB-170
Suggested PCB Layout (PL-084)



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .030" ± .002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

■ DENOTES PCB COPPER LAYOUT
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	wt.
.75	.38	.20	.010	.050	.020	.200	.075	.600	.450	—	.470	.100	.150	grams
19.05	9.65	5.08	0.25	1.27	0.51	5.08	1.91	15.24	11.43	—	11.94	2.54	3.81	1.6



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SCM-1
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Typical Performance Data

Frequency		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF port (:1)	VSWR LO port (:1)
RF MHz	LO MHz	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
1.00	31.00	6.20	72.88	66.78	1.23	2.68
2.00	32.00	6.16	72.45	67.15	1.14	2.55
5.00	35.00	5.16	72.07	67.07	1.11	2.69
10.00	40.00	5.46	70.97	66.57	1.12	2.66
20.00	50.00	5.51	68.99	65.69	1.13	2.52
32.19	62.19	5.48	65.97	64.17	1.13	2.50
50.00	80.00	5.52	62.51	62.11	1.15	2.48
78.97	48.97	5.53	59.28	58.98	1.15	2.49
100.00	70.00	5.46	57.50	57.03	1.16	2.50
125.75	95.75	5.33	56.16	55.12	1.17	2.52
156.94	126.94	5.36	54.05	52.46	1.19	2.54
188.13	158.13	5.50	51.97	51.08	1.22	2.54
219.31	189.31	5.56	50.13	49.66	1.27	2.53
250.00	220.00	5.61	50.85	46.65	1.30	2.50
281.69	251.69	5.72	48.93	45.50	1.36	2.56
328.47	298.47	5.69	46.10	46.51	1.47	2.61
375.25	345.25	5.80	43.70	44.36	1.67	2.59
422.03	392.03	6.12	45.26	41.75	1.76	2.72
453.22	423.22	6.26	45.18	41.16	1.84	2.87
500.00	470.00	6.56	43.13	42.64	1.92	3.00

Performance Charts

