

Non-Catalog Model

Frequency Mixer

Level 10 (LO Power + 10 dBm)

SCM-1LH

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.

Please click "Back", and then click "Contact Us" for Applications support.



CASE STYLE : YY109

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (f _L to f _U)	1		500	MHz
	RF (f _L to f _U)	1		500	MHz
	IF	0		500	MHz
Conversion Loss	Mid band		5.8	7.0	dB
	Total Range			8.0	dB
LO-RF Isolation	Low Range	40	60		dB
	Mid Range	35	50		dB
	Upper Range	30	40		dB
LO-IF Isolation	Low Range	40	50		dB
	Mid Range	35	45		dB
	Upper Range	25	40		dB
1 dB Compression			+5		dBm

Note: Low Range = [f_L to 10f_L]
Mid band = [2f_L to f_U/2]

Mid Range = [10f_L to f_U/2]

Upper Range = [f_U/2 to f_U]

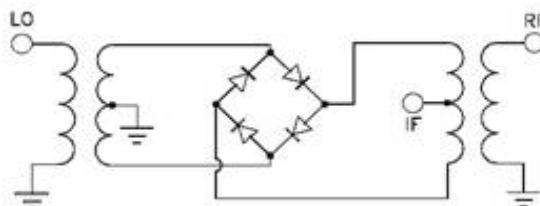
Non-hermetic

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	3,4^
GROUND	2,5,6,7

^ - pins must be connected together externally

Electrical Schematics



P.O. Box 350168, Brooklyn, New York 11235-0000 (718) 934-4500 Fax (718) 332-4951 For detailed performance specs & shopping online see Mini-Circuits web site
The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com
IF/RF MICROWAVE COMPONENTS



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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+7	+10	+13			+7	+10	+13			+7	+10	+13
1.0	31.0	6.20	5.80	5.56	10.1	40.1	21.89	21.26	25.29	10.1	40.1	1.11	0.78	0.56
2.2	32.2	5.89	5.50	5.28	30.4	60.4	19.60	23.55	25.26	30.4	60.4	0.92	0.76	0.48
4.1	34.1	5.67	5.36	5.15	50.6	80.6	20.24	24.29	25.42	50.6	80.6	0.96	0.67	0.47
6.0	36.0	5.62	5.32	5.12	70.9	100.9	23.38	25.83	24.42	70.9	100.9	1.03	0.63	0.46
9.9	39.9	5.60	5.25	5.09	91.1	121.1	21.12	26.07	20.60	91.1	121.1	0.99	0.61	0.42
10.1	40.1	5.50	5.13	4.97	111.4	141.4	21.92	19.52	18.22	111.4	141.4	0.84	0.57	0.37
30.4	60.4	5.93	5.51	5.30	131.6	161.6	24.62	20.46	17.12	131.6	161.6	0.91	0.58	0.39
50.6	80.6	5.89	5.50	5.34	151.9	181.9	26.73	18.56	16.09	151.9	181.9	0.87	0.56	0.39
70.9	100.9	5.76	5.44	5.34	172.2	202.2	21.30	16.15	15.91	172.2	202.2	0.88	0.50	0.35
91.1	121.1	5.80	5.48	5.33	192.4	222.4	18.95	16.40	15.58	192.4	222.4	0.79	0.50	0.36
131.6	161.6	5.74	5.48	5.37	212.7	242.7	16.53	14.75	15.45	212.7	242.7	0.79	0.50	0.36
151.9	181.9	5.74	5.47	5.37	232.9	262.9	16.25	14.10	13.58	232.9	262.9	0.83	0.53	0.39
172.2	202.2	5.74	5.51	5.42	253.2	283.2	13.88	14.17	14.92	253.2	283.2	0.75	0.53	0.39
192.4	222.4	5.74	5.52	5.39	273.4	303.4	12.86	11.89	13.60	273.4	303.4	0.76	0.51	0.40
212.7	242.7	5.73	5.51	5.42	293.7	323.7	13.62	11.98	12.47	293.7	323.7	0.74	0.48	0.37
253.2	283.2	5.81	5.57	5.46	313.9	343.9	16.13	14.18	14.37	313.9	343.9	0.73	0.45	0.34
273.4	303.4	5.91	5.65	5.52	334.2	364.2	18.16	17.41	18.62	334.2	364.2	0.82	0.56	0.40
293.7	323.7	5.96	5.76	5.60	354.5	384.5	15.30	21.42	23.64	354.5	384.5	0.94	0.70	0.50
313.9	343.9	6.07	5.86	5.70	374.7	404.7	11.45	13.58	20.32	374.7	404.7	0.97	0.70	0.53
334.2	364.2	6.07	5.85	5.67	395.0	425.0	10.49	10.71	12.79	395.0	425.0	1.10	0.77	0.60
354.5	384.5	6.17	5.87	5.70	415.2	445.2	10.31	10.00	10.55	415.2	445.2	1.32	0.92	0.69
374.7	404.7	6.26	5.99	5.79	435.5	465.5	9.89	9.89	10.24	435.5	465.5	1.41	0.99	0.75
395.0	425.0	6.23	6.02	5.86	455.7	485.7	9.94	10.02	10.50	455.7	485.7	1.59	1.13	0.86
415.2	445.2	6.27	6.09	5.96	476.0	506.0	9.51	10.46	11.85	476.0	506.0	1.77	1.25	0.97
435.5	465.5	6.29	6.13	6.02	496.3	526.3	9.90	11.33	13.77	496.3	526.3	1.90	1.27	1.00
455.7	485.7	6.37	6.19	6.08	516.5	546.5	9.62	12.88	17.09	516.5	546.5	2.09	1.42	1.10
476.0	506.0	6.36	6.19	6.07	536.8	566.8	8.72	12.29	15.90	536.8	566.8	2.22	1.64	1.23
496.3	526.3	6.42	6.21	6.05	557.0	587.0	6.44	10.78	13.55	557.0	587.0	2.25	1.83	1.34
536.8	566.8	6.70	6.23	6.03	577.3	607.3	4.68	8.78	12.28	577.3	607.3	2.20	1.85	1.38
557.0	587.0	6.89	6.32	6.08	597.5	627.5	3.56	6.14	10.96	597.5	627.5	2.38	1.95	1.54
597.5	627.5	7.26	6.80	6.33	617.8	647.8	3.10	5.06	9.55	617.8	647.8	2.32	1.92	1.57
617.8	647.8	7.40	6.92	6.34	638.0	668.0	2.73	3.78	6.72	638.0	668.0	2.32	1.91	1.60
638.0	668.0	7.76	7.28	6.71	658.3	688.3	2.56	3.58	5.93	658.3	688.3	2.11	1.79	1.51
658.3	688.3	8.01	7.47	6.87	678.6	708.6	2.74	3.58	5.32	678.6	708.6	1.87	1.64	1.44
678.6	708.6	8.39	7.78	7.15	698.8	728.8	2.74	3.65	5.12	698.8	728.8	1.49	1.38	1.27
698.8	728.8	8.86	8.17	7.50	719.1	749.1	3.18	4.01	5.27	719.1	749.1	1.05	1.03	1.04
719.1	749.1	9.40	8.70	7.97	739.3	769.3	3.61	4.57	5.98	739.3	769.3	0.67	0.74	0.86
759.6	789.6	10.37	9.51	8.69	759.6	789.6	3.98	5.18	6.62	759.6	789.6	0.40	0.55	0.70
779.8	809.8	10.96	10.03	9.13	779.8	809.8	4.46	5.71	7.41	779.8	809.8	0.03	0.26	0.51
800.1	830.1	11.02	10.00	9.02	800.1	830.1	5.39	6.83	8.77	800.1	830.1	0.00	0.34	0.68

Frequency Mixer

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=250.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+10			+10			+10
240.0	10.1	5.65	10.0	20.1	5.36	490.0	10.1	6.32
234.1	16.0	5.63	22.3	32.4	5.19	477.7	22.4	6.22
228.2	21.9	5.53	34.6	44.7	5.20	465.4	34.7	6.15
222.3	27.8	5.53	46.9	57.0	5.22	453.1	47.0	6.14
216.4	33.7	5.49	59.2	69.3	5.18	440.8	59.3	6.17
210.5	39.6	5.46	71.5	81.6	5.24	428.5	71.6	6.07
204.6	45.5	5.48	83.8	93.9	5.25	416.2	83.9	5.99
198.7	51.4	5.42	96.2	106.3	5.23	403.8	96.3	5.96
192.8	57.3	5.38	108.5	118.6	5.25	391.5	108.6	5.91
186.9	63.2	5.38	120.8	130.9	5.23	379.2	120.9	5.94
181.0	69.1	5.38	133.1	143.2	5.21	366.9	133.2	6.00
175.1	75.0	5.41	145.4	155.5	5.27	354.6	145.5	5.96
169.2	80.9	5.36	157.7	167.8	5.32	342.3	157.8	5.98
163.3	86.8	5.33	170.0	180.1	5.29	330.0	170.1	5.98
157.4	92.7	5.33	182.3	192.4	5.32	317.7	182.4	5.98
151.5	98.6	5.32	194.6	204.7	5.28	305.4	194.7	6.02
145.6	104.5	5.34	206.9	217.0	5.31	293.1	207.0	6.00
139.7	110.4	5.34	219.2	229.3	5.35	280.8	219.3	6.04
133.8	116.3	5.33	231.5	241.6	5.33	268.5	231.6	6.10
127.9	122.2	5.31	243.8	253.9	5.36	256.2	243.9	6.12
122.1	128.0	5.31	256.2	266.3	5.38	243.8	256.3	6.19
116.2	133.9	5.35	268.5	278.6	5.33	231.5	268.6	6.20
110.3	139.8	5.38	280.8	290.9	5.39	219.2	280.9	6.18
104.4	145.7	5.37	293.1	303.2	5.39	206.9	293.2	6.24
98.5	151.6	5.37	305.4	315.5	5.38	194.6	305.5	6.24
92.6	157.5	5.37	317.7	327.8	5.44	182.3	317.8	6.23
86.7	163.4	5.37	330.0	340.1	5.43	170.0	330.1	6.24
80.8	169.3	5.40	342.3	352.4	5.45	157.7	342.4	6.21
74.9	175.2	5.42	354.6	364.7	5.48	145.4	354.7	6.18
69.0	181.1	5.42	366.9	377.0	5.50	133.1	367.0	6.17
63.1	187.0	5.41	379.2	389.3	5.55	120.8	379.3	6.13
57.2	192.9	5.42	391.5	401.6	5.61	108.5	391.6	6.14
51.3	198.8	5.43	403.8	413.9	5.57	96.2	403.9	6.21
45.4	204.7	5.47	416.2	426.3	5.65	83.8	416.3	6.23
39.5	210.6	5.50	428.5	438.6	5.62	71.5	428.6	6.28
33.6	216.5	5.50	440.8	450.9	5.59	59.2	440.9	6.30
27.7	222.4	5.50	453.1	463.2	5.50	46.9	453.2	6.28
21.8	228.3	5.52	465.4	475.5	5.40	34.6	465.5	6.32
15.9	234.2	5.55	477.7	487.8	5.34	22.3	477.8	6.33
10.0	240.1	5.68	490.0	500.1	5.28	10.0	490.1	6.39

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IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant
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Frequency Mixer

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+7	+10	+13	+7	+10	+13
1.0	83.37	83.76	87.11	51.05	53.19	55.41
2.2	80.29	81.75	84.73	50.88	52.98	55.24
4.1	76.80	78.65	80.73	50.71	52.80	55.05
6.0	73.73	75.79	77.97	50.65	52.76	55.04
9.9	69.98	71.74	73.71	50.41	52.50	54.80
10.1	68.59	69.79	70.72	80.42	63.20	64.99
30.4	60.84	62.98	64.44	66.72	62.38	59.78
50.6	56.64	58.69	60.50	65.20	60.74	58.89
70.9	53.84	55.36	57.51	65.21	61.53	59.57
91.1	51.31	53.42	55.71	64.84	61.11	59.21
131.6	48.68	51.22	53.36	64.62	62.27	58.86
151.9	47.38	49.91	51.97	62.95	62.79	59.32
172.2	46.27	48.59	50.63	60.44	61.30	59.45
192.4	45.74	47.96	49.87	57.88	59.36	58.43
212.7	44.96	47.34	49.23	56.02	58.44	58.94
253.2	43.56	45.74	47.75	51.86	54.37	56.69
273.4	43.26	45.33	47.11	51.34	52.60	54.87
293.7	42.40	44.56	46.49	51.09	53.41	53.78
313.9	42.10	44.20	46.17	49.50	52.58	55.42
334.2	42.16	44.12	45.89	48.38	51.10	54.61
354.5	41.78	43.76	45.54	48.40	50.82	53.97
374.7	41.40	43.42	45.30	48.29	51.13	54.21
395.0	41.08	43.58	45.64	46.99	50.46	53.50
415.2	40.72	43.20	45.40	46.22	49.66	53.54
435.5	39.72	42.26	44.45	44.76	47.75	50.82
455.7	39.81	42.38	44.70	44.11	46.62	49.07
476.0	38.84	41.19	43.48	42.98	45.36	47.09
496.3	38.32	40.79	43.16	42.55	45.25	47.39
536.8	37.86	40.70	44.05	43.06	45.04	46.04
557.0	38.08	40.97	43.96	43.77	44.85	45.46
597.5	37.31	40.17	43.17	46.92	46.13	44.69
617.8	36.78	39.53	42.47	47.72	47.93	45.18
638.0	36.44	39.18	42.16	46.41	48.74	46.16
658.3	35.77	38.27	40.99	44.31	47.10	47.72
678.6	35.83	38.75	41.89	41.93	44.11	46.47
698.8	35.84	38.57	41.41	39.32	40.22	41.63
719.1	35.90	39.14	43.08	38.10	38.06	38.60
759.6	36.53	39.95	44.35	37.28	36.70	36.17
779.8	36.72	39.86	43.54	37.25	36.62	35.90
800.1	37.09	40.60	45.15	36.91	36.41	35.82

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	50.62	50.13	57.21
30.4	60.4	39.32	38.84	40.62
50.6	80.6	35.56	35.93	36.34
70.9	100.9	32.56	33.19	33.50
91.1	121.1	30.86	31.51	31.70
111.4	141.4	29.56	30.23	30.51
131.6	161.6	28.62	28.98	29.26
151.9	181.9	27.68	28.25	28.47
172.2	202.2	26.99	27.36	27.86
192.4	222.4	27.08	27.50	27.84
212.7	242.7	26.54	27.38	27.93
232.9	262.9	26.18	26.99	27.73
253.2	283.2	25.88	26.89	27.80
273.4	303.4	25.22	25.95	26.91
293.7	323.7	25.92	26.27	26.81
313.9	343.9	26.32	26.65	26.90
334.2	364.2	27.52	27.99	28.27
354.5	384.5	28.35	29.38	30.20
374.7	404.7	28.59	30.00	31.63
395.0	425.0	28.48	29.90	31.62
415.2	445.2	26.64	27.31	28.16
435.5	465.5	24.92	25.30	25.59
455.7	485.7	23.59	23.75	23.76
476.0	506.0	22.38	22.47	22.60
496.3	526.3	21.84	22.02	22.11
516.5	546.5	21.51	21.94	21.97
536.8	566.8	21.48	21.67	21.76
557.0	587.0	21.49	21.57	21.60
577.3	607.3	21.17	21.02	20.87
597.5	627.5	20.99	20.83	20.36
617.8	647.8	20.92	20.69	20.14
638.0	668.0	20.98	20.68	20.07
658.3	688.3	21.24	20.83	20.28
678.6	708.6	21.72	21.34	20.86
698.8	728.8	22.46	22.10	21.67
719.1	749.1	23.06	22.90	22.59
739.3	769.3	23.27	23.17	22.87
759.6	789.6	22.90	22.80	22.68
779.8	809.8	22.13	22.18	22.00
800.1	830.1	21.17	21.12	20.95

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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=500.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+7	+10	+13		+7	+10	+13		+7	+10	+13
1.0	31.0	1.38	1.36	1.35	1.0	1.86	2.49	3.42	0.3	2.24	2.02	1.82
2.2	32.2	1.25	1.21	1.19	2.2	1.62	2.32	3.27	0.7	2.24	2.02	1.82
4.1	34.1	1.21	1.16	1.13	4.1	1.53	2.24	3.18	1.2	2.24	2.03	1.82
6.0	36.0	1.20	1.14	1.10	6.0	1.48	2.20	3.13	1.6	2.24	2.02	1.82
9.9	39.9	1.19	1.13	1.09	9.9	1.38	2.08	3.01	2.0	2.25	2.03	1.83
10.1	40.1	1.21	1.10	1.04	10.1	1.44	2.10	2.86	3.0	2.25	2.03	1.83
30.4	60.4	1.24	1.10	1.02	30.4	1.51	2.28	3.26	4.8	2.25	2.03	1.83
50.6	80.6	1.20	1.08	1.01	50.6	1.51	2.28	3.26	6.5	2.25	2.03	1.83
70.9	100.9	1.18	1.06	1.01	70.9	1.46	2.15	3.05	8.3	2.26	2.04	1.84
91.1	121.1	1.17	1.05	1.03	91.1	1.46	2.17	3.09	10.0	2.25	2.04	1.84
111.4	141.4	1.12	1.03	1.06	111.4	1.45	2.17	3.07	22.6	2.40	2.18	1.99
131.6	161.6	1.11	1.03	1.06	131.6	1.50	2.26	3.21	47.7	2.19	1.98	1.80
151.9	181.9	1.11	1.03	1.07	151.9	1.51	2.24	3.15	60.3	2.19	1.97	1.79
172.2	202.2	1.10	1.04	1.09	172.2	1.49	2.18	3.05	72.8	1.97	1.75	1.58
192.4	222.4	1.07	1.06	1.11	192.4	1.52	2.20	3.07	85.4	1.84	1.62	1.46
212.7	242.7	1.06	1.07	1.13	212.7	1.54	2.28	3.17	97.9	1.71	1.49	1.33
232.9	262.9	1.06	1.08	1.13	232.9	1.60	2.34	3.27	123.1	2.40	2.18	2.01
253.2	283.2	1.05	1.10	1.15	253.2	1.61	2.33	3.21	135.6	2.36	2.15	1.98
273.4	303.4	1.06	1.08	1.14	273.4	1.67	2.39	3.31	148.2	2.29	2.09	1.93
293.7	323.7	1.08	1.11	1.15	293.7	1.62	2.33	3.19	160.8	2.24	2.06	1.90
313.9	343.9	1.10	1.14	1.18	313.9	1.71	2.44	3.33	173.3	2.27	2.09	1.94
334.2	364.2	1.13	1.19	1.24	334.2	1.77	2.50	3.38	198.5	2.42	2.23	2.08
354.5	384.5	1.13	1.22	1.29	354.5	1.79	2.48	3.32	211.0	2.43	2.24	2.09
374.7	404.7	1.15	1.23	1.31	374.7	1.88	2.57	3.39	223.6	2.37	2.20	2.05
395.0	425.0	1.17	1.24	1.31	395.0	1.87	2.58	3.42	236.2	2.31	2.14	2.00
415.2	445.2	1.18	1.25	1.31	415.2	1.97	2.70	3.59	248.7	2.29	2.12	1.99
435.5	465.5	1.22	1.28	1.33	435.5	1.97	2.71	3.58	273.8	2.37	2.21	2.08
455.7	485.7	1.20	1.27	1.31	455.7	2.10	2.85	3.75	286.4	2.37	2.22	2.10
476.0	506.0	1.21	1.27	1.31	476.0	2.04	2.71	3.56	299.0	2.33	2.19	2.07
496.3	526.3	1.20	1.26	1.29	496.3	2.09	2.78	3.61	311.5	2.31	2.16	2.04
536.8	566.8	1.17	1.21	1.24	536.8	2.23	2.86	3.66	324.1	2.31	2.16	2.04
557.0	587.0	1.19	1.20	1.23	557.0	2.39	3.00	3.81	349.2	2.32	2.18	2.07
577.3	607.3	1.23	1.22	1.24	577.3	2.42	3.05	3.82	361.8	2.28	2.15	2.05
597.5	627.5	1.30	1.27	1.28	597.5	2.57	3.25	4.04	374.4	2.26	2.12	2.02
617.8	647.8	1.41	1.37	1.38	617.8	2.59	3.31	4.09	386.9	2.27	2.13	2.02
638.0	668.0	1.58	1.53	1.52	638.0	2.69	3.42	4.23	399.5	2.32	2.17	2.06
658.3	688.3	1.77	1.71	1.68	658.3	2.70	3.38	4.19	412.1	2.33	2.18	2.07
678.6	708.6	2.02	1.94	1.89	678.6	2.73	3.47	4.30	424.6	2.28	2.13	2.03
698.8	728.8	2.31	2.21	2.14	698.8	2.88	3.60	4.43	437.2	2.23	2.09	1.98
719.1	749.1	2.65	2.54	2.44	719.1	2.90	3.61	4.45	449.7	2.23	2.08	1.96
739.3	769.3	3.00	2.86	2.73	739.3	3.09	3.82	4.67	462.3	2.27	2.11	1.99
759.6	789.6	3.33	3.18	3.03	759.6	2.99	3.67	4.48	474.9	2.31	2.14	2.01
779.8	809.8	3.71	3.53	3.35	779.8	3.11	3.77	4.59	487.4	2.30	2.13	2.01
800.1	830.1	3.95	3.73	3.52	800.1	3.14	3.79	4.59	500.0	2.41	2.40	2.39

REV. X2

SCM-1LH

100818

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	37	40	38	40	45	55	48	74	57	58
1	-	22	+0	32	12	45	17	36	39	55	50	49
2	94	56	72	58	64	59	75	56	64	68	60	72
3	>100	48	39	50	42	57	36	55	45	55	58	66
4	>100	68	77	72	78	69	82	66	79	68	72	87
5	>100	69	54	64	53	63	51	70	49	60	50	66
6	>100	87	80	76	75	79	81	87	81	87	87	80
7	>100	78	71	73	61	73	64	73	65	77	62	78
8	>100	>94	>94	>94	>94	88	86	>94	81	>94	83	>94
9	>100	>94	>94	90	83	81	73	84	73	77	71	82
10	>100	>94	>94	>94	>94	94	>94	88	>94	93	83	88
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 250.1 MHz; 0.00 dBm.
LO IN: 280.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -5.68 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	26	28	27	28	34	44	34	50	42	42
1	-	21	+0	31	11	44	16	34	46	47	43	39
2	>100	70	67	65	65	68	68	82	67	83	64	75
3	>100	64	54	64	55	74	52	65	54	71	63	77
4	>100	>84	>84	>84	>84	82	>84	>84	>84	>84	>84	>84
5	>100	>84	>84	>84	>84	>84	78	>84	77	>84	76	>84
6	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
7	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
8	>100	>84	>84	>84	>84	>84	>84	>84	81	>84	>84	>84
9	>100	>84	>84	>84	>84	>84	>84	>84	>84	68	>84	>84
10	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	78	>84
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 250.1 MHz; -10.00 dBm.
LO IN: 280.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -15.7 dBm

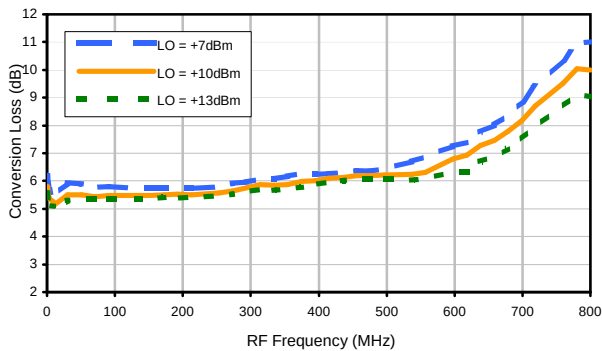
- Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
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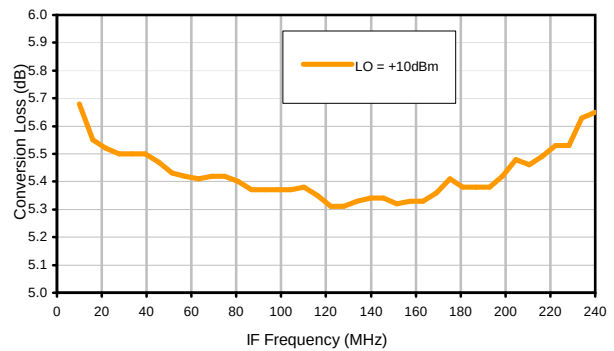


Typical Performance Curves

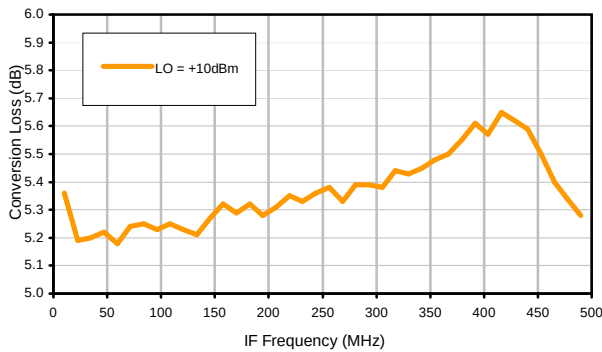
Conversion Loss @ IF=30MHz



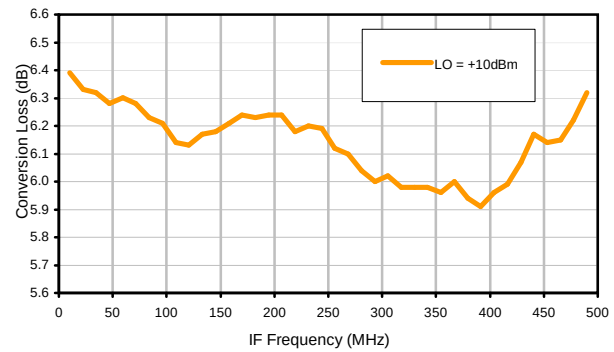
Conversion Loss vs. IF @ RF=250.1MHz



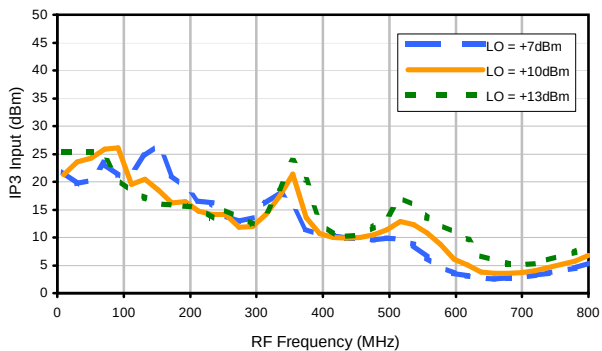
Conversion Loss vs. IF @ RF=10.1MHz



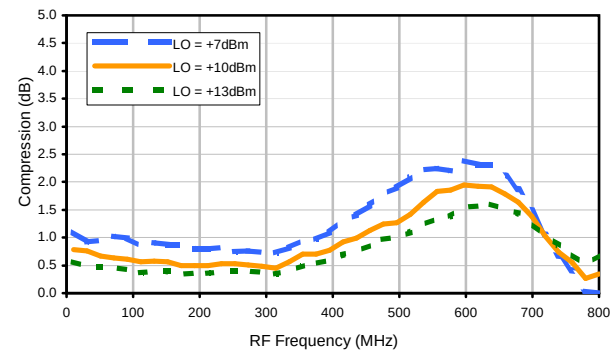
Conversion Loss vs. IF @ RF=500.1MHz



IP3 Input

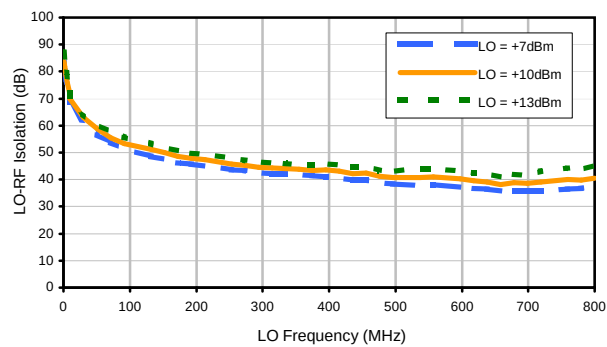


Compression @ RF IN=+5dBm

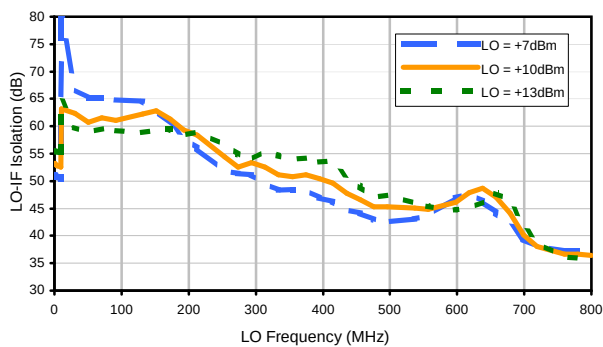


Typical Performance Curves

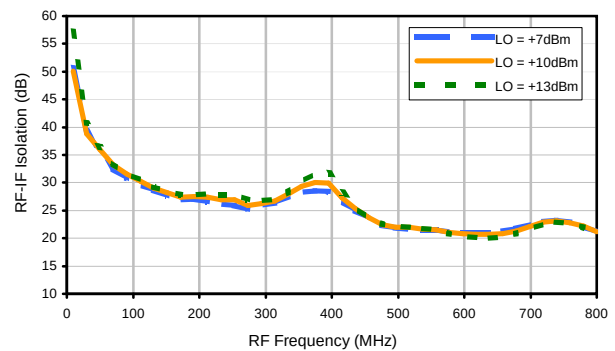
LO-RF Isolation



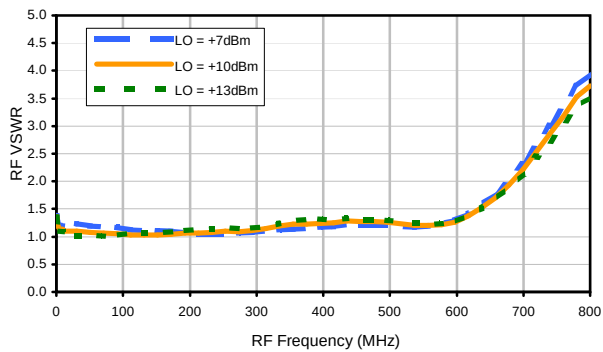
LO-IF Isolation



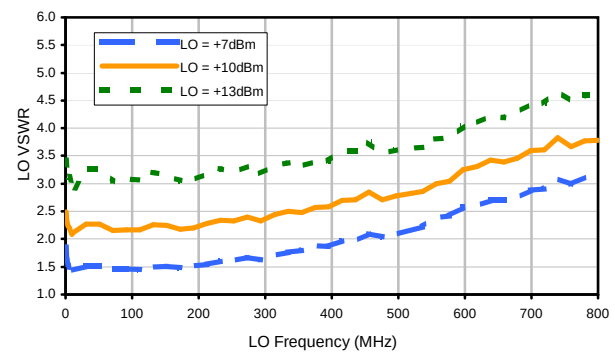
RF-IF Isolation



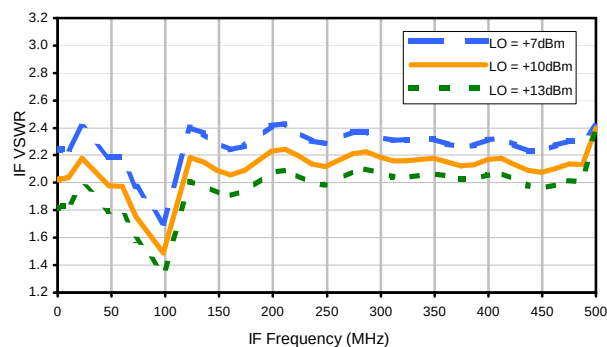
RF VSWR



LO VSWR



IF VSWR



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	(-dBm)	(-dBc)										
0	-	-	37	40	38	40	45	55	48	74	57	58
1	-	22	+0	32	12	45	17	36	39	55	50	49
2	94	56	72	58	64	59	75	56	64	68	60	72
3	>100	48	39	50	42	57	36	55	45	55	58	66
4	>100	68	77	72	78	69	82	66	79	68	72	87
5	>100	69	54	64	53	63	51	70	49	60	50	66
6	>100	87	80	76	75	79	81	87	81	87	87	80
7	>100	78	71	73	61	73	64	73	65	77	62	78
8	>100	>94	>94	>94	>94	88	86	>94	81	>94	83	>94
9	>100	>94	>94	90	83	81	73	84	73	77	71	82
10	>100	>94	>94	>94	>94	94	>94	88	>94	93	83	88
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 250.1 MHz; 0.00 dBm.
LO IN: 280.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -5.68 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	26	28	27	28	34	44	34	50	42	42
1	-	21	+0	31	11	44	16	34	46	47	43	39
2	>100	70	67	65	65	68	68	82	67	83	64	75
3	>100	64	54	64	55	74	52	65	54	71	63	77
4	>100	>84	>84	>84	>84	82	>84	>84	>84	>84	>84	>84
5	>100	>84	>84	>84	>84	>84	78	>84	77	>84	76	>84
6	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
7	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
8	>100	>84	>84	>84	>84	>84	>84	>84	81	>84	>84	>84
9	>100	>84	>84	>84	>84	>84	>84	>84	>84	68	>84	>84
10	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	78	>84
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

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Test conditions: RF IN: 250.1 MHz; -10.00 dBm.
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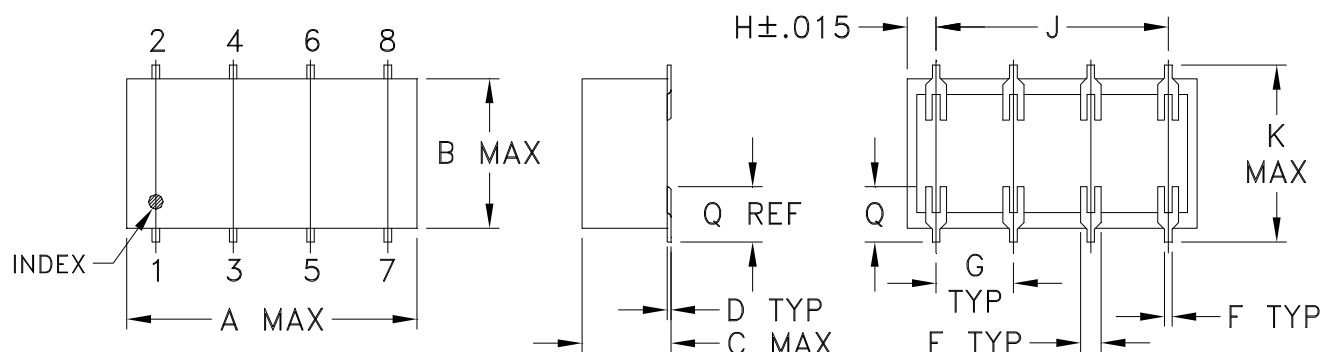


Case Style

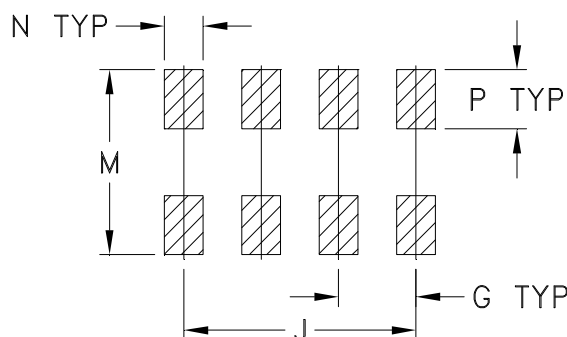
YY

Outline Dimensions

YY101
YY109
YY161



PCB Land Pattern



Suggested Layout
Tolerance to be within $\pm.002$

CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	WT. GRAM S
YY101*			.20 (5.08)							.450 (11.43)	--	.470 (11.94)				1.6
YY109*	.75 (19.05)	.38 (9.65)	.20 (5.08)	.010 (0.25)	.050 (1.27)	.020 (0.51)	.200 (5.08)	.075 (1.91)	.600 (15.24)	.720 (18.29)	--	.740 (18.80)	.100 (2.54)	.150 (3.81)	.148 (3.76)	1.6
YY161			.28 (7.11)							.450 (11.43)	--	.470 (11.94)				1.6

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .01$; 3 Pl. $\pm .005$

Notes:

- Case material: Plastic.
- Termination finish:
For RoHS Case Styles: Tin plate over Nickel plate.
For RoHS-5 Case Styles: Tin-Lead plate.
- Special Tolerances: Termination thickness $\pm .003$ inch.
- * Denotes: For SCM mixers, long termination version (case YY109) is available upon request, consult factory. To order short termination version (case YY101) add -NL suffix.

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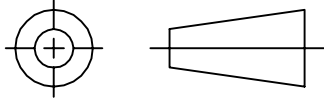
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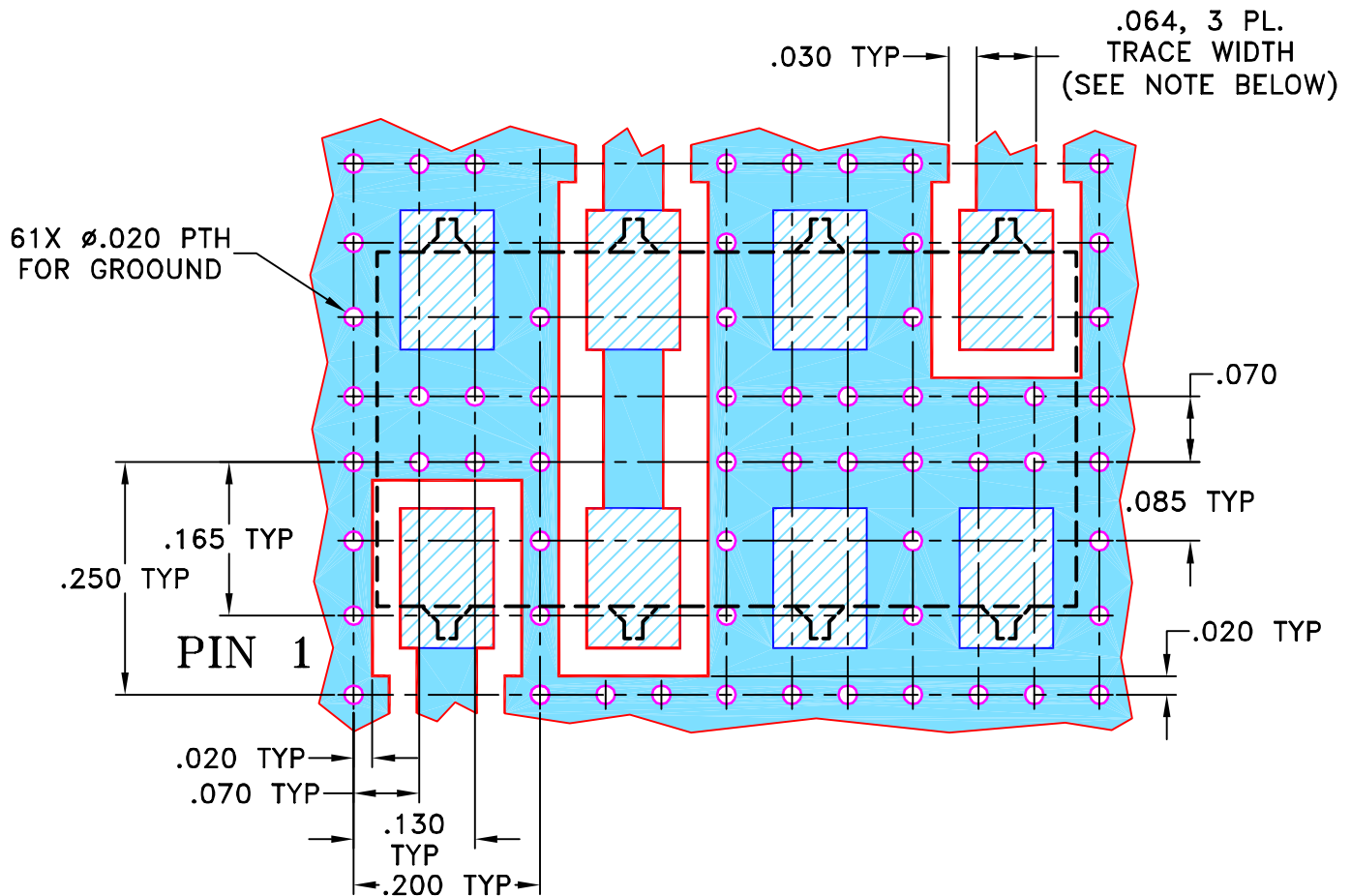
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82272	NEW RELEASE	08/02/02	AV	DJ
A	M102713	UPDATED NOTES	01/14/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR YY101 CASE STYLE, "d" PIN CONNECTION



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.030" \pm 0.002"$; 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

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES ON:
2 PL DECIMALS $\pm$
3 PL DECIMALS $\pm$.005
ANGLES $\pm$
FRACTIONS $\pm$

DRAWN

AV

07/22/02

CHECKED

WL

08/02/02

APPROVED

DJ

08/02/02



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Brooklyn NY 11235

PL, d, YY101, SCM, TB-170

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SIZE

A

CODE IDENT

15542

DRAWING NO:

98-PL-084

REV:

A

FILE:

98PL084

SCALE:

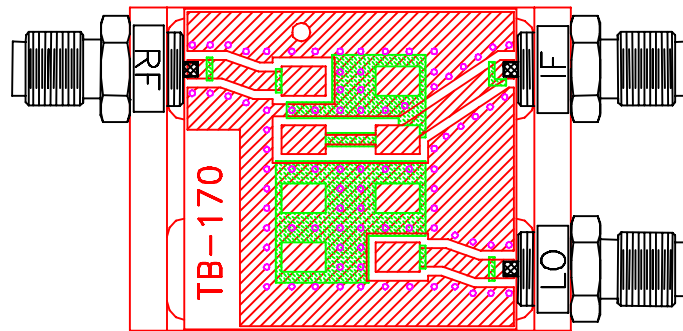
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SHEET:

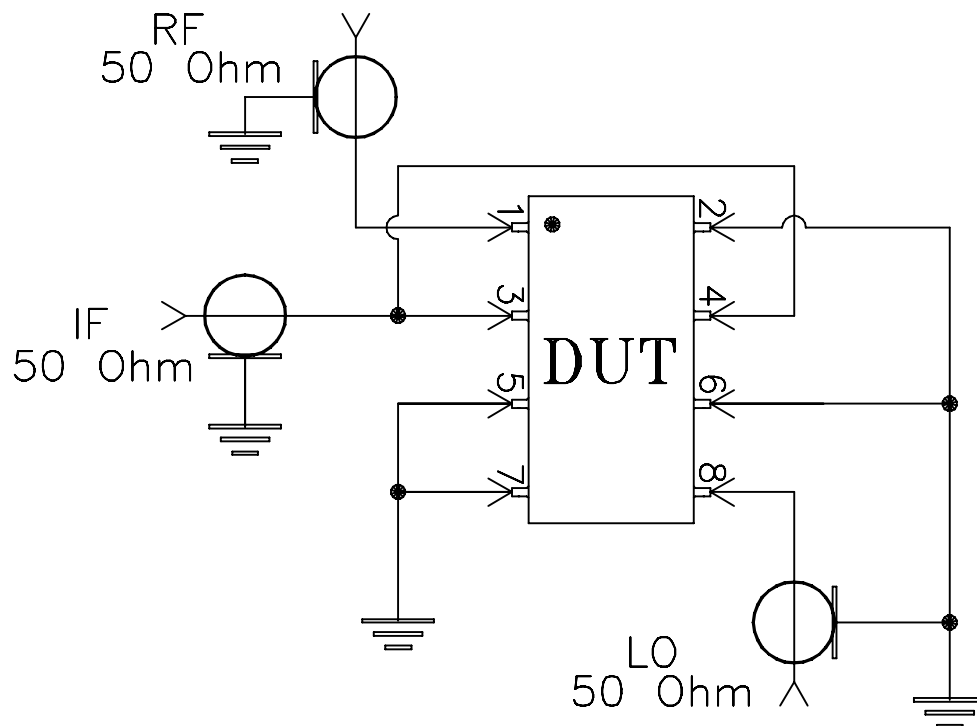
1 OF 1

ASHEETA1.DWG REV:A DATE:01/12/95

Evaluation Board and Circuit



TB-170



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215