Non-Catalog Model

Frequency Mixer

LRMS-2LJ

Level 3 (LO Power +3 dBm)

Important Note

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

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CASE STYLE : QQQ569

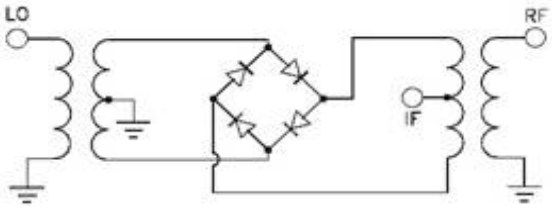
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency	**LO** (fL to fU)	800		1000	MHz
	RF (fL to fU)	800		1000	MHz
	IF	0		200	MHz
Conversion Loss			7.0	8.4	dB
LO-RF Isolation		16	24		dB
LO-IF Isolation		12	20		dB
1 dB Comp. Input Power			-3		dBm

Notes: Phase detection, positive polarity.
Aqueous washable.
See outline QQQ569. Footprint for L models and L models suffix J are the same.

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	1
RF	4
IF	5
GROUND	2, 3, 6

Electrical Schematics



Frequency Mixer LRMS-2LJ

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		0	+3	+6
200.1	230.1	11.55	10.37	9.86
240.1	270.1	10.23	9.20	8.74
280.1	310.1	9.39	8.42	7.96
320.1	350.1	8.56	7.74	7.27
360.1	390.1	8.07	7.23	6.79
400.1	430.1	7.64	6.83	6.39
440.1	470.1	7.19	6.41	6.00
480.1	510.1	7.07	6.27	5.84
520.1	550.1	6.83	6.04	5.65
560.1	590.1	6.76	5.96	5.54
600.1	630.1	6.68	5.84	5.39
640.1	670.1	6.62	5.75	5.26
680.1	710.1	6.60	5.71	5.21
720.1	750.1	6.46	5.60	5.13
760.1	790.1	6.61	5.71	5.22
800.1	830.1	6.69	5.76	5.25
840.1	870.1	7.04	6.04	5.42
880.1	910.1	7.32	6.31	5.65
920.1	950.1	7.59	6.61	5.91
960.1	990.1	7.79	6.88	6.20
1000.1	1030.1	7.82	7.04	6.44
1040.1	1070.1	7.86	7.20	6.68
1080.1	1110.1	7.82	7.21	6.78
1120.1	1150.1	7.83	7.24	6.84
1160.1	1190.1	8.03	7.37	6.98
1200.1	1230.1	8.13	7.44	7.08
1240.1	1270.1	8.21	7.50	7.13
1300.1	1330.1	8.26	7.47	7.11
1340.1	1370.1	8.44	7.52	7.14
1400.1	1430.1	8.41	7.49	7.13
1440.1	1470.1	8.72	7.64	7.19
1500.1	1530.1	8.75	7.66	7.22
1540.1	1570.1	9.07	7.82	7.33
1600.1	1630.1	9.45	8.07	7.59
1640.1	1670.1	9.74	8.27	7.83
1700.1	1730.1	10.81	8.85	8.18
1740.1	1770.1	10.90	8.93	8.23
1800.1	1830.1	12.08	9.47	8.34
1840.1	1870.1	12.21	9.55	8.34
1900.1	1930.1	12.63	9.74	8.31

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		0	+3	+6
200.1	230.1	12.74	16.55	18.07
240.1	270.1	13.97	14.87	18.63
280.1	310.1	12.12	14.02	17.85
320.1	350.1	12.05	14.77	14.93
360.1	390.1	11.12	15.30	13.19
400.1	430.1	9.88	14.40	12.53
440.1	470.1	9.83	14.62	12.36
480.1	510.1	9.49	13.59	11.95
520.1	550.1	11.07	11.52	10.29
560.1	590.1	11.20	10.52	8.86
600.1	630.1	11.76	9.53	7.99
640.1	670.1	10.76	10.40	8.17
680.1	710.1	10.21	11.93	9.05
720.1	750.1	11.27	13.86	9.35
760.1	790.1	10.36	17.92	11.52
800.1	830.1	13.12	14.64	11.66
840.1	870.1	12.34	18.03	13.06
880.1	910.1	8.48	11.35	12.59
920.1	950.1	6.82	8.94	10.71
960.1	990.1	6.00	7.72	9.78
1000.1	1030.1	5.69	7.16	9.16
1040.1	1070.1	5.79	6.75	8.67
1080.1	1110.1	5.68	6.26	7.67
1120.1	1150.1	6.26	6.32	7.27
1160.1	1190.1	6.68	6.27	6.87
1200.1	1230.1	7.24	6.56	6.70
1240.1	1270.1	7.98	7.16	6.84
1300.1	1330.1	7.69	7.53	7.13
1340.1	1370.1	7.25	7.60	7.31
1400.1	1430.1	7.24	7.60	7.46
1440.1	1470.1	6.74	7.31	7.30
1500.1	1530.1	6.34	7.03	6.74
1540.1	1570.1	6.17	6.86	6.48
1600.1	1630.1	5.99	6.47	5.79
1640.1	1670.1	5.75	6.25	5.67
1700.1	1730.1	5.95	6.15	6.54
1740.1	1770.1	5.76	6.47	7.47
1800.1	1830.1	4.90	5.69	7.80
1840.1	1870.1	4.57	5.21	7.15
1900.1	1930.1	4.64	5.08	6.43

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=-3dBm (dB) @LO (dBm)		
		0	+3	+6
200.1	230.1	-0.08	-0.07	-0.05
240.1	270.1	-0.02	-0.04	-0.04
280.1	310.1	0.02	-0.03	-0.03
320.1	350.1	0.14	0.02	0.01
360.1	390.1	0.30	0.12	0.08
400.1	430.1	0.39	0.20	0.16
440.1	470.1	0.54	0.31	0.26
480.1	510.1	0.73	0.44	0.38
520.1	550.1	0.84	0.53	0.45
560.1	590.1	1.06	0.69	0.56
600.1	630.1	1.16	0.80	0.65
640.1	670.1	1.36	0.97	0.79
680.1	710.1	1.37	1.00	0.82
720.1	750.1	1.48	1.10	0.89
760.1	790.1	1.49	1.13	0.92
800.1	830.1	1.49	1.19	0.99
840.1	870.1	1.47	1.22	1.06
880.1	910.1	1.36	1.18	1.06
920.1	950.1	1.22	1.09	1.03
960.1	990.1	1.01	0.89	0.87
1000.1	1030.1	0.87	0.73	0.71
1040.1	1070.1	0.75	0.55	0.52
1080.1	1110.1	0.81	0.54	0.47
1120.1	1150.1	0.85	0.55	0.47
1160.1	1190.1	0.90	0.53	0.44
1200.1	1230.1	0.91	0.52	0.41
1240.1	1270.1	0.85	0.51	0.40
1300.1	1330.1	0.97	0.59	0.47
1340.1	1370.1	1.13	0.73	0.58
1400.1	1430.1	1.03	0.73	0.64
1440.1	1470.1	1.12	0.83	0.71
1500.1	1530.1	1.11	0.87	0.79
1540.1	1570.1	1.10	0.91	0.82
1600.1	1630.1	1.08	0.92	0.81
1640.1	1670.1	1.01	0.86	0.67
1700.1	1730.1	0.83	0.86	0.65
1740.1	1770.1	0.74	0.82	0.63
1800.1	1830.1	0.42	0.84	0.71
1840.1	1870.1	0.37	0.82	0.73
1900.1	1930.1	0.19	0.79	0.74

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=900.1MHz (dB) @LO (dBm) +3
100.0	800.1	6.38
95.3	804.8	6.45
90.5	809.6	6.50
85.8	814.3	6.51
81.1	819.0	6.47
76.3	823.8	6.40
71.6	828.5	6.32
66.8	833.3	6.28
62.1	838.0	6.30
57.4	842.7	6.35
52.6	847.5	6.43
47.9	852.2	6.50
43.2	856.9	6.52
38.4	861.7	6.50
33.7	866.4	6.44
28.9	871.2	6.38
24.2	875.9	6.33
19.5	880.6	6.35
14.7	885.4	6.41
10.0	890.1	6.51
10.0	910.1	6.59
14.7	914.8	6.41
19.5	919.6	6.31
24.2	924.3	6.24
28.9	929.0	6.21
33.7	933.8	6.24
38.4	938.5	6.31
43.2	943.3	6.38
47.9	948.0	6.44
52.6	952.7	6.47
57.4	957.5	6.44
62.1	962.2	6.38
66.8	966.9	6.32
71.6	971.7	6.29
76.3	976.4	6.31
81.1	981.2	6.38
85.8	985.9	6.47
90.5	990.6	6.54
95.3	995.4	6.58
100.0	1000.1	6.56

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=800.1MHz (dB) @LO (dBm) +3
10.0	810.1	6.11
14.9	815.0	5.98
19.7	819.8	5.86
24.6	824.7	5.79
29.5	829.6	5.75
34.4	834.5	5.73
39.2	839.3	5.75
44.1	844.2	5.78
49.0	849.1	5.80
53.8	853.9	5.83
58.7	858.8	5.86
63.6	863.7	5.85
68.5	868.6	5.81
73.3	873.4	5.77
78.2	878.3	5.70
83.1	883.2	5.69
87.9	888.0	5.72
92.8	892.9	5.77
97.7	897.8	5.83
102.6	902.7	5.86
107.4	907.5	5.84
112.3	912.4	5.76
117.2	917.3	5.69
122.1	922.2	5.62
126.9	927.0	5.61
131.8	931.9	5.67
136.7	936.8	5.76
141.5	941.6	5.84
146.4	946.5	5.90
151.3	951.4	5.91
156.2	956.3	5.89
161.0	961.1	5.85
165.9	966.0	5.82
170.8	970.9	5.81
175.6	975.7	5.83
180.5	980.6	5.89
185.4	985.5	5.95
190.3	990.4	6.01
195.1	995.2	6.04
200.0	1000.1	6.04

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB) @LO (dBm) +3
200.0	800.1	6.89
195.1	805.0	6.97
190.3	809.8	7.00
185.4	814.7	6.98
180.5	819.6	6.93
175.6	824.5	6.89
170.8	829.3	6.87
165.9	834.2	6.88
161.0	839.1	6.92
156.2	843.9	6.99
151.3	848.8	7.05
146.4	853.7	7.11
141.5	858.6	7.15
136.7	863.4	7.14
131.8	868.3	7.11
126.9	873.2	7.05
122.1	878.0	6.98
117.2	882.9	6.96
112.3	887.8	7.00
107.4	892.7	7.07
102.6	897.5	7.13
97.7	902.4	7.17
92.8	907.3	7.13
87.9	912.2	7.04
83.1	917.0	6.94
78.2	921.9	6.87
73.3	926.8	6.85
68.5	931.6	6.89
63.6	936.5	6.96
58.7	941.4	7.02
53.8	946.3	7.05
49.0	951.1	7.07
44.1	956.0	7.05
39.2	960.9	7.01
34.4	965.7	6.99
29.5	970.6	6.97
24.6	975.5	6.96
19.7	980.4	7.00
14.9	985.2	7.08
10.0	990.1	7.25

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	0	+3	+6	0	+3	+6
200.1	31.44	30.48	29.64	37.20	38.63	36.47
240.1	30.32	29.35	28.50	35.87	38.22	35.81
280.1	29.53	28.59	27.77	34.72	37.45	34.93
320.1	29.04	28.11	27.29	34.46	37.73	34.32
360.1	28.92	28.00	27.18	34.05	37.98	33.94
400.1	28.86	28.02	27.23	33.68	38.43	34.13
440.1	29.21	28.31	27.50	34.02	39.34	33.27
480.1	29.62	28.76	27.95	34.72	39.30	32.14
520.1	30.39	29.43	28.55	35.14	37.96	30.25
560.1	31.49	30.48	29.52	36.26	35.70	28.47
600.1	32.64	31.62	30.52	37.86	34.27	27.18
640.1	34.48	33.42	32.07	41.16	32.58	25.93
680.1	36.85	36.14	34.20	42.12	33.06	26.00
720.1	39.60	40.09	36.71	47.16	31.20	25.16
760.1	40.53	48.04	41.32	41.63	29.03	24.22
800.1	38.66	48.79	45.09	34.54	26.12	22.54
840.1	36.36	40.40	39.77	29.90	23.32	20.43
880.1	33.35	35.54	35.54	27.67	21.72	18.95
920.1	31.26	32.67	32.65	25.97	20.47	17.78
960.1	29.32	30.40	30.45	25.60	20.27	17.44
1000.1	28.00	28.84	28.80	24.73	19.89	17.10
1040.1	27.18	27.93	27.90	23.75	19.43	16.77
1080.1	26.26	27.04	27.05	22.58	18.74	16.25
1120.1	25.76	26.53	26.60	20.89	17.62	15.44
1160.1	24.92	25.72	25.96	19.91	16.99	14.95
1200.1	24.30	25.17	25.56	19.18	16.54	14.59
1240.1	23.78	24.74	25.23	18.38	16.08	14.26
1300.1	23.47	24.52	25.14	16.82	15.02	13.47
1340.1	23.33	24.59	25.39	16.13	14.55	13.12
1400.1	22.89	24.39	25.52	15.28	14.09	12.85
1440.1	22.59	24.27	25.65	14.54	13.52	12.36
1500.1	21.71	23.60	25.36	13.78	13.19	12.20
1540.1	21.48	23.40	25.23	13.16	12.73	11.85
1600.1	20.31	22.02	23.67	12.16	12.18	11.58
1640.1	19.73	21.28	22.79	11.45	11.62	11.14
1700.1	19.09	20.44	21.87	10.15	10.54	10.30
1740.1	19.11	20.35	21.72	9.30	9.74	9.66
1800.1	19.53	20.65	22.00	8.36	8.75	8.74
1840.1	19.94	20.96	22.23	7.76	8.16	8.26
1900.1	21.12	22.09	23.26	7.15	7.47	7.58

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		0	+3	+6
200.1	230.1	22.54	21.24	20.45
240.1	270.1	21.20	19.97	19.26
280.1	310.1	20.01	18.87	18.23
320.1	350.1	18.64	17.73	17.20
360.1	390.1	17.54	16.73	16.30
400.1	430.1	16.62	15.83	15.42
440.1	470.1	16.17	15.38	14.98
480.1	510.1	16.23	15.37	14.94
520.1	550.1	16.62	15.77	15.31
560.1	590.1	17.41	16.68	16.23
600.1	630.1	18.37	17.74	17.36
640.1	670.1	19.72	19.16	18.70
680.1	710.1	21.19	20.52	19.88
720.1	750.1	22.79	21.63	20.62
760.1	790.1	25.26	23.31	21.65
800.1	830.1	26.16	24.28	22.00
840.1	870.1	23.45	23.02	21.83
880.1	910.1	20.41	20.33	19.91
920.1	950.1	18.04	18.08	18.05
960.1	990.1	16.22	16.12	16.07
1000.1	1030.1	14.91	14.70	14.61
1040.1	1070.1	14.07	13.72	13.66
1080.1	1110.1	13.66	13.30	13.23
1120.1	1150.1	13.35	13.20	13.21
1160.1	1190.1	13.08	13.03	13.12
1200.1	1230.1	12.85	12.92	13.12
1240.1	1270.1	12.72	12.87	13.14
1300.1	1330.1	12.93	13.23	13.62
1340.1	1370.1	13.13	13.67	14.14
1400.1	1430.1	13.61	14.43	15.15
1440.1	1470.1	13.82	14.98	15.84
1500.1	1530.1	14.09	15.57	16.64
1540.1	1570.1	13.86	15.56	16.76
1600.1	1630.1	13.11	14.95	16.25
1640.1	1670.1	12.75	14.65	16.08
1700.1	1730.1	11.70	13.64	15.46
1740.1	1770.1	11.75	13.62	15.63
1800.1	1830.1	11.67	13.49	15.53
1840.1	1870.1	12.21	13.95	15.95
1900.1	1930.1	13.28	14.88	16.60

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		0	+3	+6
200.1	230.1	11.93	10.19	9.38
240.1	270.1	8.35	7.28	6.83
280.1	310.1	6.32	5.59	5.23
320.1	350.1	4.83	4.33	4.10
360.1	390.1	3.86	3.50	3.32
400.1	430.1	3.17	2.86	2.74
440.1	470.1	2.63	2.40	2.31
480.1	510.1	2.27	2.06	1.97
520.1	550.1	1.98	1.79	1.70
560.1	590.1	1.80	1.60	1.50
600.1	630.1	1.67	1.45	1.32
640.1	670.1	1.62	1.38	1.23
680.1	710.1	1.64	1.39	1.22
720.1	750.1	1.71	1.45	1.29
760.1	790.1	1.88	1.61	1.44
800.1	830.1	2.07	1.80	1.61
840.1	870.1	2.37	2.08	1.88
880.1	910.1	2.66	2.36	2.14
920.1	950.1	2.92	2.63	2.40
960.1	990.1	3.13	2.88	2.67
1000.1	1030.1	3.28	3.07	2.89
1040.1	1070.1	3.37	3.21	3.08
1080.1	1110.1	3.41	3.29	3.19
1120.1	1150.1	3.45	3.33	3.26
1160.1	1190.1	3.54	3.40	3.34
1200.1	1230.1	3.61	3.44	3.38
1240.1	1270.1	3.67	3.49	3.43
1300.1	1330.1	3.76	3.53	3.43
1340.1	1370.1	3.86	3.58	3.43
1400.1	1430.1	3.87	3.51	3.34
1440.1	1470.1	3.99	3.58	3.33
1500.1	1530.1	4.01	3.57	3.26
1540.1	1570.1	4.13	3.64	3.29
1600.1	1630.1	4.22	3.68	3.29
1640.1	1670.1	4.25	3.69	3.30
1700.1	1730.1	4.59	3.95	3.54
1740.1	1770.1	4.69	4.05	3.62
1800.1	1830.1	5.31	4.44	3.90
1840.1	1870.1	5.65	4.67	4.07
1900.1	1930.1	6.37	5.16	4.41

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	0	+3	+6
200.1	1.21	1.68	2.34
240.1	1.25	1.76	2.48
280.1	1.28	1.81	2.54
320.1	1.30	1.83	2.57
360.1	1.32	1.85	2.59
400.1	1.32	1.79	2.44
440.1	1.34	1.83	2.50
480.1	1.37	1.86	2.51
520.1	1.38	1.90	2.59
560.1	1.43	1.98	2.70
600.1	1.47	2.03	2.74
640.1	1.53	2.09	2.79
680.1	1.52	2.04	2.68
720.1	1.56	2.07	2.71
760.1	1.60	2.10	2.73
800.1	1.67	2.19	2.82
840.1	1.76	2.32	2.98
880.1	1.81	2.34	2.98
920.1	1.87	2.41	3.04
960.1	1.87	2.36	2.94
1000.1	1.90	2.37	2.94
1040.1	1.95	2.41	2.96
1080.1	2.01	2.47	3.01
1120.1	2.13	2.61	3.16
1160.1	2.20	2.67	3.22
1200.1	2.23	2.68	3.21
1240.1	2.26	2.69	3.19
1300.1	2.40	2.80	3.27
1340.1	2.46	2.83	3.29
1400.1	2.54	2.85	3.26
1440.1	2.61	2.92	3.30
1500.1	2.67	2.88	3.20
1540.1	2.74	2.93	3.25
1600.1	2.81	2.92	3.18
1640.1	2.91	3.00	3.25
1700.1	3.04	3.10	3.30
1740.1	3.16	3.18	3.35
1800.1	3.34	3.31	3.48
1840.1	3.43	3.42	3.51
1900.1	3.59	3.56	3.62

IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1) @LO (dBm)		
	0	+3	+6
10.0	2.25	1.77	1.48
14.9	2.22	1.77	1.45
19.7	2.21	1.76	1.44
24.6	2.21	1.76	1.44
29.5	2.20	1.76	1.43
34.4	2.20	1.76	1.44
39.2	2.20	1.76	1.44
44.1	2.20	1.76	1.44
49.0	2.21	1.76	1.44
53.8	2.20	1.77	1.45
58.7	2.21	1.77	1.45
63.6	2.21	1.77	1.46
68.5	2.20	1.77	1.46
73.3	2.20	1.77	1.46
78.2	2.20	1.77	1.46
83.1	2.20	1.77	1.45
87.9	2.19	1.76	1.45
92.8	2.19	1.76	1.45
97.7	2.18	1.76	1.45
102.6	2.18	1.76	1.45
107.4	2.18	1.76	1.45
112.3	2.18	1.76	1.46
117.2	2.18	1.76	1.46
122.1	2.18	1.77	1.47
126.9	2.18	1.77	1.47
131.8	2.18	1.77	1.47
136.7	2.18	1.77	1.48
141.5	2.18	1.77	1.47
146.4	2.18	1.77	1.47
151.3	2.17	1.76	1.47
156.2	2.17	1.76	1.47
161.0	2.16	1.76	1.47
165.9	2.17	1.76	1.47
170.8	2.16	1.76	1.48
175.6	2.16	1.77	1.48
180.5	2.17	1.77	1.49
185.4	2.17	1.77	1.49
190.3	2.17	1.78	1.50
195.1	2.17	1.78	1.50
200.0	2.16	1.78	1.50

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+6	8	5	25	18	40	49	52	47	57
1	-	13	+0	26	21	33	37	39	50	61	72	64
2	>100	43	39	41	38	47	48	55	62	67	>76	68
3	>100	65	59	58	68	63	73	64	>76	70	>76	>76
4	>100	>76	>76	>76	>76	76	>76	>76	>76	>76	>76	>76
5	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
6	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
7	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
8	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
9	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
10	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 900.1 MHz; -18.00 dBm.
LO IN: 930.1 MHz; +3.00 dBm
IF OUT: 30 MHz; -24.42 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	3	20	18	40	29	57	75	69	80	>86
1	-	13	+0	26	22	36	42	46	56	76	67	78
2	99	32	30	33	29	40	40	51	59	70	77	75
3	>100	44	40	39	57	47	55	51	62	58	76	82
4	>100	61	58	58	54	50	60	56	59	66	76	82
5	>100	74	65	73	65	58	63	60	74	63	>86	72
6	>100	>86	>86	75	80	73	70	68	73	73	73	84
7	>100	>86	>86	>86	>86	>86	>86	75	76	79	>86	77
8	>100	>86	>86	>86	>86	>86	>86	>86	84	81	83	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	85	>86
10	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

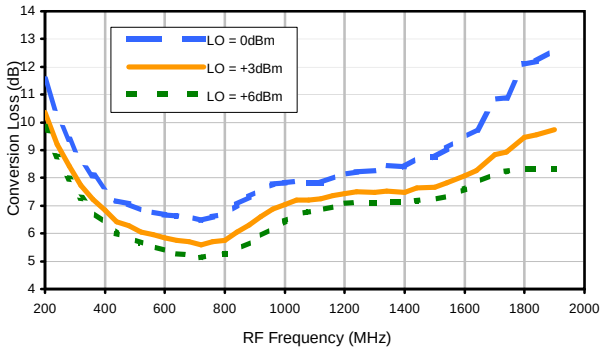
LO HARMONICS ORDER

Test conditions:
RF IN: 900.1 MHz; -8.00 dBm.
LO IN: 930.1 MHz; +3.00 dBm
IF OUT: 30 MHz; -14.49 dBm

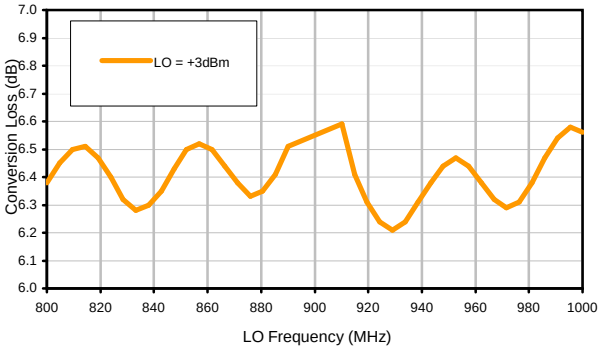
Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Typical Performance Curves

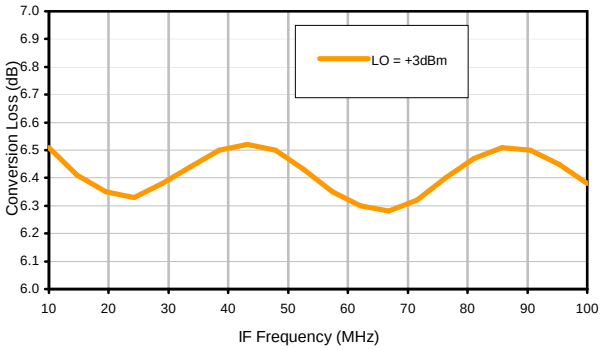
Conversion Loss @ IF=30MHz



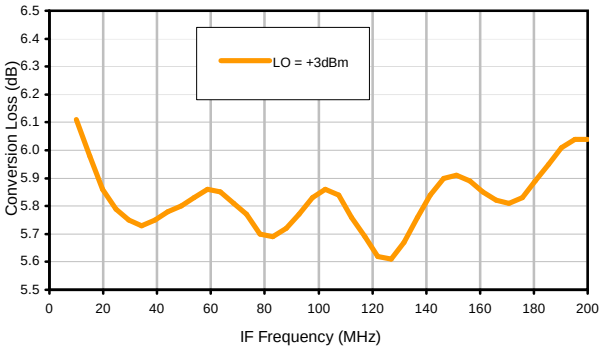
Conversion Loss vs. LO @ RF=900.1MHz



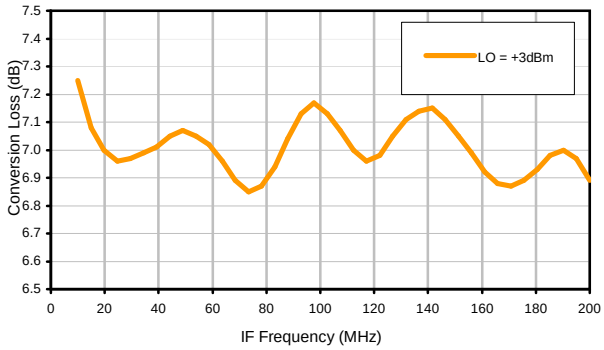
Conversion Loss vs. IF @ RF=900.1MHz



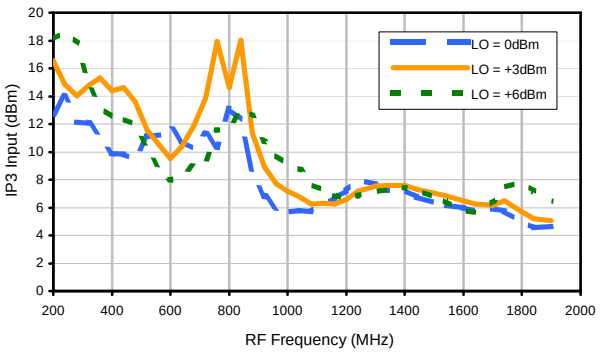
Conversion Loss vs. IF @ RF=800.1MHz



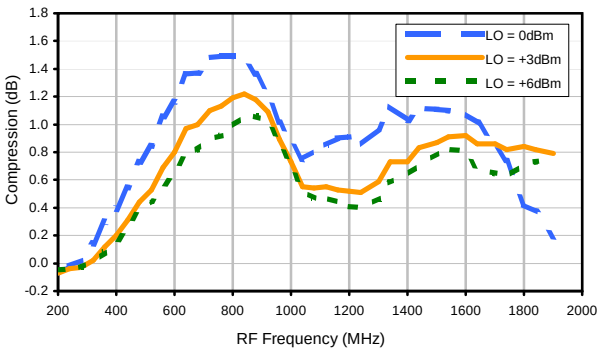
Conversion Loss vs. IF @ RF=1000.1MHz



IP3 Input

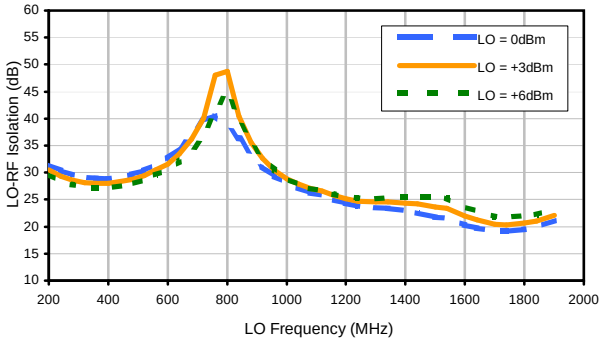


Compression @ RF IN=-3dBm

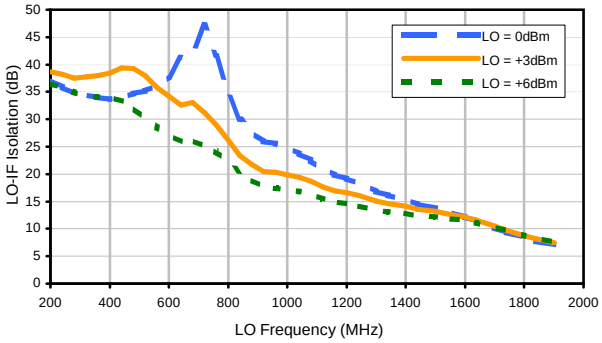


Typical Performance Curves

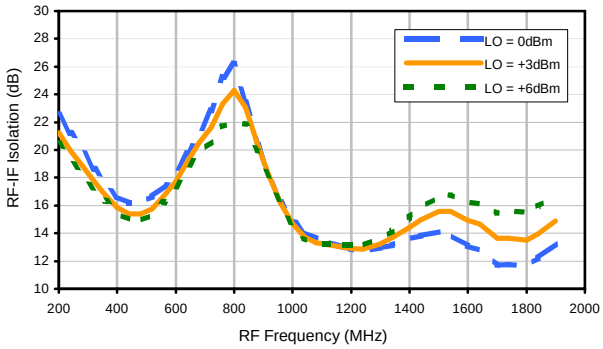
LO-RF Isolation



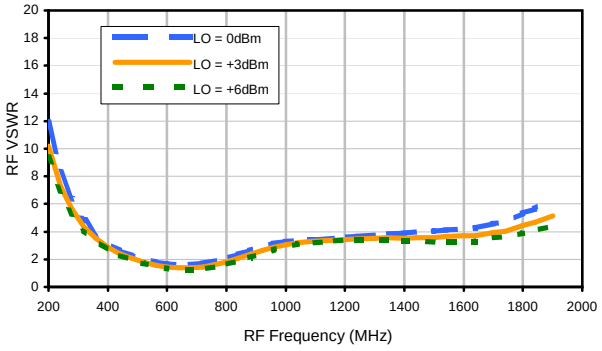
LO-IF Isolation



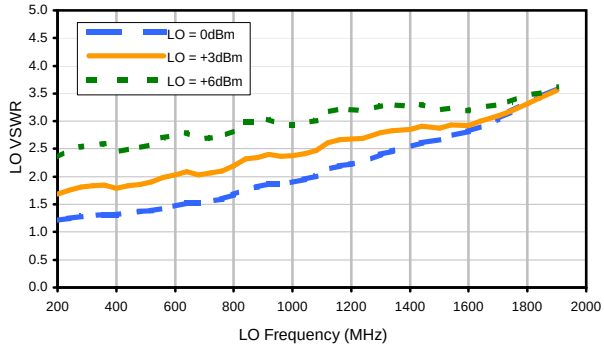
RF-IF Isolation



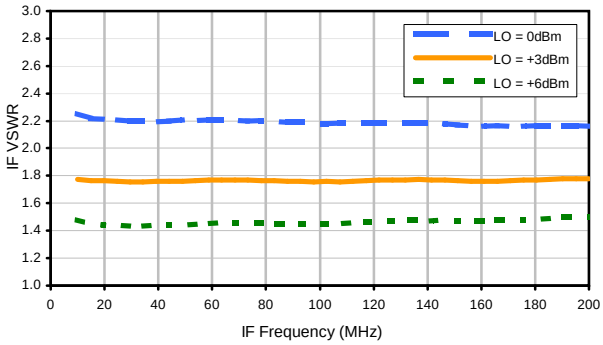
RF VSWR



LO VSWR



IF VSWR



Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+6	8	5	25	18	40	49	52	47	57
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2	>100	43	39	41	38	47	48	55	62	67	>76	68
3	>100	65	59	58	68	63	73	64	>76	70	>76	>76
4	>100	>76	>76	>76	>76	76	>76	>76	>76	>76	>76	>76
5	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
6	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
7	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
8	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
9	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
10	>100	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 900.1 MHz; -18.00 dBm.
LO IN: 930.1 MHz; +3.00 dBm
IF OUT: 30 MHz; -24.42 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	3	20	18	40	29	57	75	69	80	>86
1	-	13	+0	26	22	36	42	46	56	76	67	78
2	99	32	30	33	29	40	40	51	59	70	77	75
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4	>100	61	58	58	54	50	60	56	59	66	76	82
5	>100	74	65	73	65	58	63	60	74	63	>86	72
6	>100	>86	>86	75	80	73	70	68	73	73	73	84
7	>100	>86	>86	>86	>86	>86	>86	75	76	79	>86	77
8	>100	>86	>86	>86	>86	>86	>86	>86	84	81	83	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	85	>86
10	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

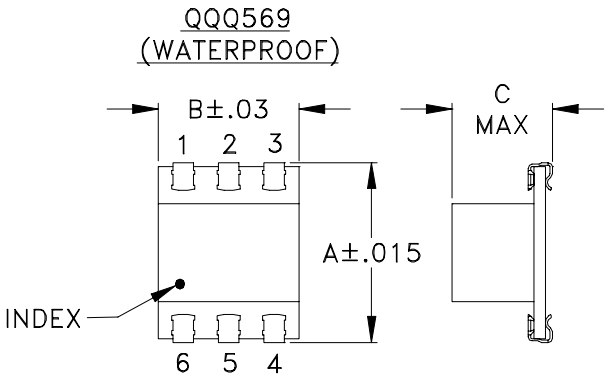
Test conditions:
RF IN: 900.1 MHz; -8.00 dBm.
LO IN: 930.1 MHz; +3.00 dBm
IF OUT: 30 MHz; -14.49 dBm

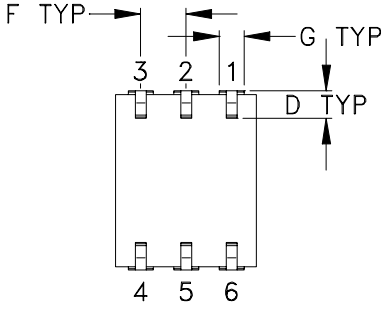
Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Case Style QQQ

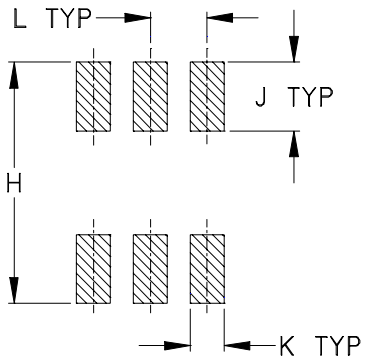
QQQ569 (waterproof)

Outline Dimensions





PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE#	A	B	C	D	E	F	G	H	J	K	L	M	WT, GRAM
QQQ569	.390 (9.90)	.31 (7.87)	.225 (5.72)	.060 (1.52)	-	.100 (2.54)	.045 (1.14)	.420 (10.67)	.120 (3.05)	.060 (1.52)	.100 (2.54)	-	.50

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

Notes:

1. Case material: Ceramic.
2. Termination finish:
   For RoHS Case Styles: Tin plate over Nickel plate.
   For RoHS-5 Case Styles: Tin-Lead plate.

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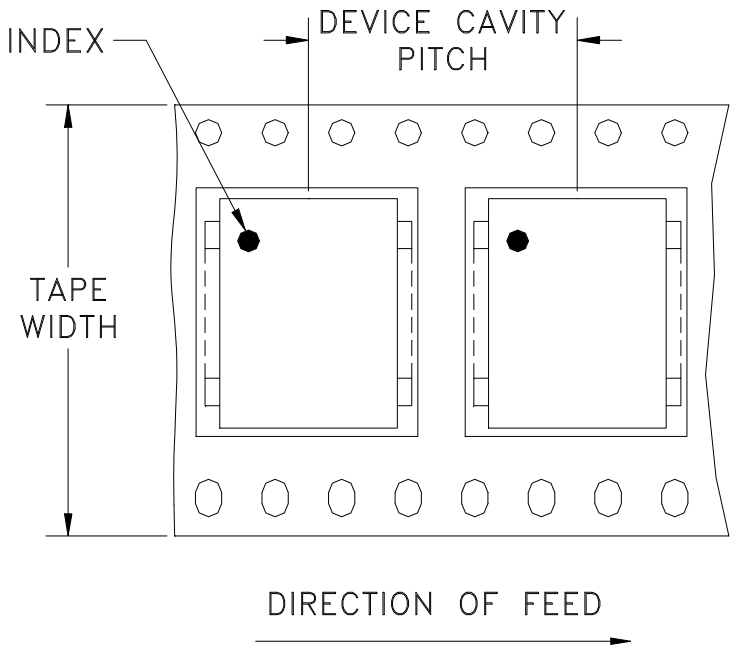
Tape & Reel Packaging TR-F5

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	16	13	500

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

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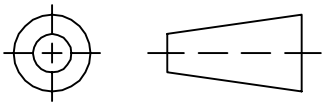
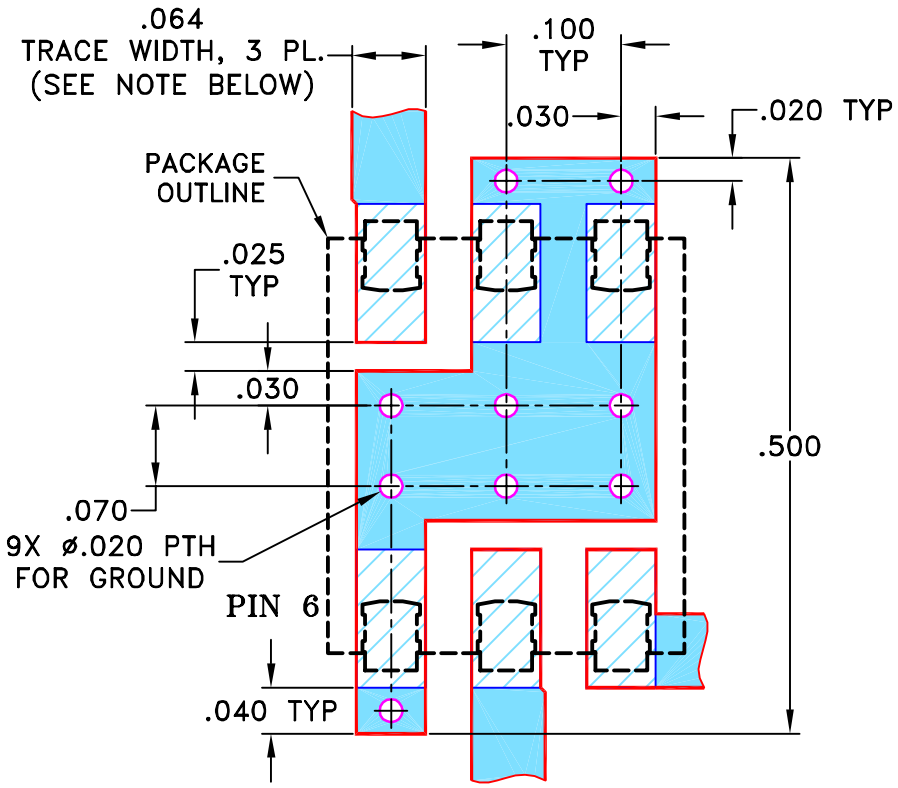
THIRD ANGLE PROJECTION



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 QQQ569 CASE STYLE, "w" PIN CONNECTION



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

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	AV	07/19/02
TOLERANCES ON:	CHECKED	WL	08/02/02
2 PL DECIMALS ±	APPROVED	DJ	08/02/02
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

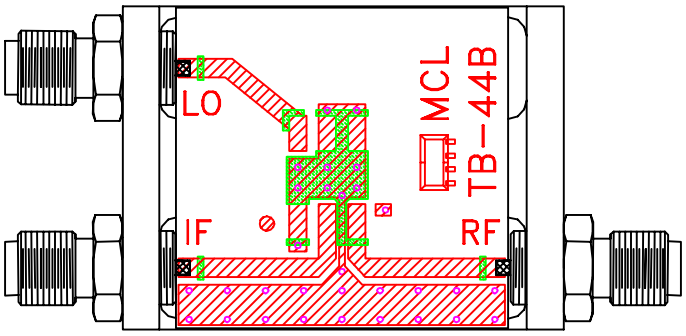
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, w, QQQ569, LRMS-J, TB-44

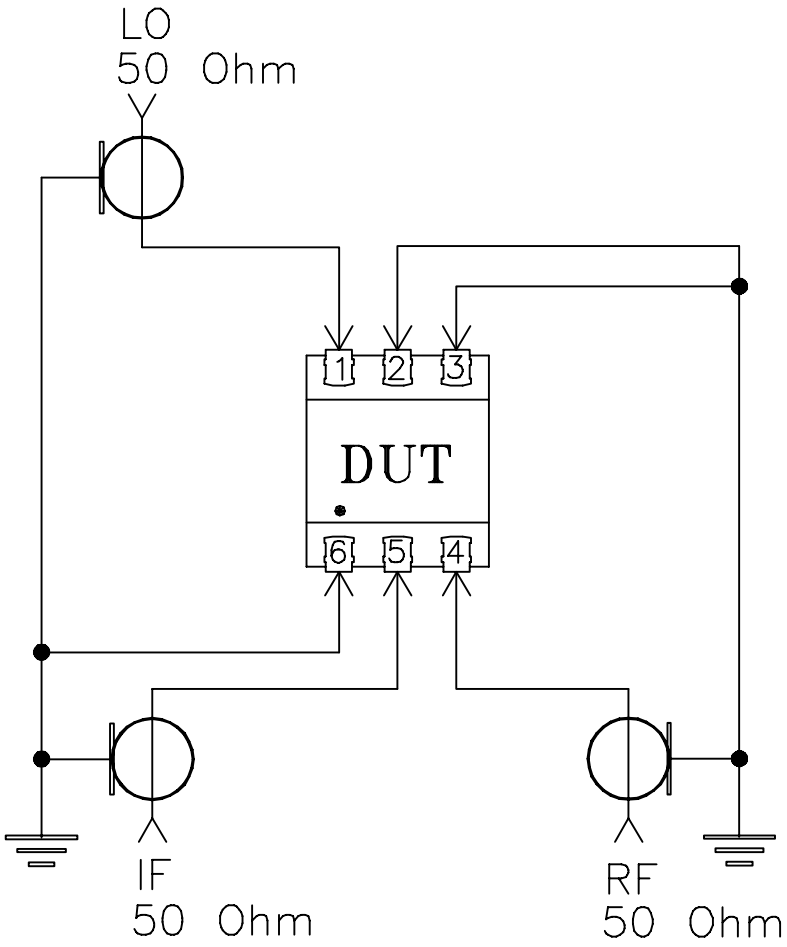
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-083	A

FILE:	SCALE:	SHEET:
98PL083	6:1	1 OF 1

Evaluation Board and Circuit



TB-44+



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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