Non-Catalog Model

Frequency Mixer RMS-2UMH

Level 13 (LO Power +13 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 : TT100

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency	**LO** (fL to fU)	10		1000	MHz
	RF (fL to fU)	10		1000	MHz
	IF	20		500	MHz
Conversion Loss	**mid band**		7.0	8.5	dB
	Total Range			9.5	dB
LO-RF Isolation	**Low Range**	40	52		dB
	Mid Range	30	43		dB
	Upper Range	25	33		dB
LO-IF Isolation	**Low Range**	30	53		dB
	Mid Range	25	44		dB
	Upper Range	22	39		dB
1 dB Comp. Input Power			+9		dBm

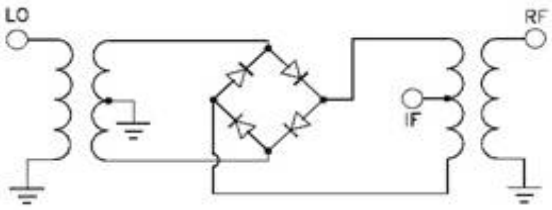
Notes: Low Range = [fL to 10fL] Mid Range = [10fL to fU/2] Upper Range = [fU/2 to fU]
mid band = [2fL to fU/2]

Phase detection, positive polarity.
Units are non-hermetic.

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

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

Electrical Schematics



Frequency Mixer RMS-2UMH

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+10	+13	+16
10.1	40.1	6.46	6.11	5.95
50.4	80.4	6.63	6.30	6.14
90.7	120.7	6.69	6.39	6.22
131.0	161.0	6.84	6.55	6.35
171.3	201.3	7.14	6.75	6.50
211.5	241.5	7.37	6.90	6.58
251.8	281.8	7.64	7.11	6.70
292.1	322.1	7.92	7.29	6.81
332.4	362.4	8.18	7.46	6.94
372.7	402.7	8.45	7.51	6.94
413.0	443.0	8.67	7.64	6.95
453.3	483.3	8.95	7.85	7.14
493.6	523.6	8.97	7.81	7.16
533.9	563.9	9.16	7.93	7.20
574.2	604.2	9.33	7.95	7.25
614.4	644.4	9.25	7.96	7.26
654.7	684.7	9.33	8.11	7.44
695.0	725.0	9.37	8.30	7.67
735.3	765.3	9.38	8.48	7.91
775.6	805.6	9.29	8.56	8.09
815.9	845.9	9.29	8.60	8.22
856.2	886.2	9.29	8.68	8.35
896.5	926.5	9.27	8.76	8.45
916.6	946.6	9.28	8.83	8.53
956.9	986.9	9.24	8.86	8.61
977.1	1007.1	9.28	8.89	8.68
1017.3	1047.3	9.34	8.86	8.72
1037.5	1067.5	9.40	8.88	8.75
1077.8	1107.8	9.51	8.99	8.79
1097.9	1127.9	9.58	8.99	8.84
1138.2	1168.2	9.79	9.07	8.89
1158.4	1188.4	9.91	9.11	8.93
1198.7	1228.7	10.24	9.25	9.01
1218.8	1248.8	10.33	9.27	9.05
1259.1	1289.1	10.63	9.40	9.14
1279.2	1309.2	10.80	9.48	9.19
1319.5	1349.5	11.10	9.72	9.31
1339.7	1369.7	11.29	9.88	9.39
1380.0	1410.0	11.77	10.19	9.57
1400.1	1430.1	12.04	10.29	9.69

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+10	+13	+16
10.1	40.1	22.28	23.85	24.00
50.4	80.4	18.71	17.81	16.20
90.7	120.7	15.84	14.40	14.07
131.0	161.0	13.08	12.78	13.70
171.3	201.3	11.66	12.11	13.65
211.5	241.5	10.91	12.06	14.25
251.8	281.8	10.60	12.32	14.88
292.1	322.1	10.39	12.54	15.23
332.4	362.4	10.56	12.90	15.76
372.7	402.7	10.85	13.95	17.16
413.0	443.0	10.96	14.22	17.41
453.3	483.3	11.23	14.42	17.41
493.6	523.6	11.80	15.32	17.64
533.9	563.9	11.36	15.09	18.19
574.2	604.2	11.17	15.08	17.60
614.4	644.4	11.45	15.11	17.63
654.7	684.7	11.82	15.04	17.49
695.0	725.0	12.33	14.75	16.89
735.3	765.3	13.16	14.69	16.99
775.6	805.6	13.99	15.01	16.66
815.9	845.9	14.82	15.94	16.58
856.2	886.2	15.58	16.89	17.59
896.5	926.5	16.60	17.16	18.46
916.6	946.6	17.32	17.24	18.84
956.9	986.9	17.56	18.33	18.29
977.1	1007.1	17.69	19.61	18.43
1017.3	1047.3	17.16	22.47	19.42
1037.5	1067.5	17.11	22.16	20.53
1077.8	1107.8	18.22	19.90	23.99
1097.9	1127.9	18.19	20.19	23.73
1138.2	1168.2	19.62	19.91	24.19
1158.4	1188.4	20.46	19.28	22.46
1198.7	1228.7	20.00	19.96	22.06
1218.8	1248.8	19.59	21.09	22.90
1259.1	1289.1	19.31	24.69	22.41
1279.2	1309.2	19.06	27.73	23.50
1319.5	1349.5	19.29	28.92	24.97
1339.7	1369.7	18.68	25.19	25.61
1380.0	1410.0	18.00	21.33	26.98
1400.1	1430.1	17.54	21.11	31.55

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+9dBm (dB) @LO (dBm)		
		+10	+13	+16
10.1	40.1	1.18	0.87	0.71
50.4	80.4	0.99	0.73	0.55
90.7	120.7	0.97	0.73	0.58
131.0	161.0	0.99	0.74	0.59
171.3	201.3	0.96	0.76	0.62
211.5	241.5	1.12	0.87	0.77
251.8	281.8	1.10	0.93	0.84
292.1	322.1	1.05	0.93	0.92
332.4	362.4	1.07	1.02	0.99
372.7	402.7	1.01	1.13	1.16
413.0	443.0	1.02	1.15	1.19
453.3	483.3	0.98	1.17	1.22
493.6	523.6	1.00	1.23	1.21
533.9	563.9	0.86	1.23	1.24
574.2	604.2	0.78	1.15	1.18
614.4	644.4	0.83	1.12	1.14
654.7	684.7	0.81	1.01	0.96
695.0	725.0	0.88	0.92	0.90
735.3	765.3	0.81	0.72	0.69
775.6	805.6	0.80	0.62	0.55
815.9	845.9	0.73	0.54	0.41
856.2	886.2	0.61	0.40	0.32
896.5	926.5	0.47	0.24	0.19
916.6	946.6	0.38	0.18	0.14
956.9	986.9	0.30	0.09	0.06
977.1	1007.1	0.25	0.08	0.03
1017.3	1047.3	0.24	0.08	0.03
1037.5	1067.5	0.23	0.07	0.05
1077.8	1107.8	0.25	0.04	0.04
1097.9	1127.9	0.21	0.05	0.04
1138.2	1168.2	0.15	0.03	0.07
1158.4	1188.4	0.12	0.02	0.05
1198.7	1228.7	0.03	0.03	0.05
1218.8	1248.8	0.04	0.05	0.04
1259.1	1289.1	-0.03	0.08	0.02
1279.2	1309.2	-0.03	0.06	0.03
1319.5	1349.5	-0.08	0.03	0.04
1339.7	1369.7	-0.10	0.02	0.05
1380.0	1410.0	-0.13	-0.02	0.05
1400.1	1430.1	-0.18	-0.04	0.06

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB) @LO (dBm) +13
480.0	20.1	6.76
468.2	31.9	6.80
456.4	43.7	6.83
444.6	55.5	6.87
432.8	67.3	6.99
421.0	79.1	7.06
409.2	90.9	7.15
397.4	102.7	7.22
385.6	114.5	7.25
373.8	126.3	7.28
362.1	138.0	7.37
350.3	149.8	7.41
338.5	161.6	7.47
326.7	173.4	7.51
314.9	185.2	7.52
303.1	197.0	7.55
291.3	208.8	7.53
279.5	220.6	7.53
267.7	232.4	7.55
255.9	244.2	7.53
244.1	256.0	7.45
232.3	267.8	7.56
220.5	279.6	7.57
208.7	291.4	7.61
196.9	303.2	7.65
185.1	315.0	7.58
173.3	326.8	7.61
161.5	338.6	7.66
149.7	350.4	7.63
137.9	362.2	7.67
126.2	373.9	7.66
114.4	385.7	7.62
102.6	397.5	7.66
90.8	409.3	7.65
79.0	421.1	7.59
67.2	432.9	7.68
55.4	444.7	7.72
43.6	456.5	7.80
31.8	468.3	7.91
20.0	480.1	8.03

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +13
20.0	30.1	6.21
32.3	42.4	6.10
44.6	54.7	6.12
56.9	67.0	6.07
69.2	79.3	6.09
81.5	91.6	6.12
93.8	103.9	6.07
106.2	116.3	6.06
118.5	128.6	6.05
130.8	140.9	6.02
143.1	153.2	6.08
155.4	165.5	6.07
167.7	177.8	6.06
180.0	190.1	6.08
192.3	202.4	6.05
204.6	214.7	6.07
216.9	227.0	6.08
229.2	239.3	6.05
241.5	251.6	6.08
253.8	263.9	6.12
266.2	276.3	6.12
278.5	288.6	6.15
290.8	300.9	6.14
303.1	313.2	6.13
315.4	325.5	6.17
327.7	337.8	6.16
340.0	350.1	6.16
352.3	362.4	6.18
364.6	374.7	6.16
376.9	387.0	6.21
389.2	399.3	6.22
401.5	411.6	6.21
413.8	423.9	6.25
426.2	436.3	6.25
438.5	448.6	6.29
450.8	460.9	6.35
463.1	473.2	6.36
475.4	485.5	6.41
487.7	497.8	6.43
500.0	510.1	6.44

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB) @LO (dBm) +13
500.0	500.1	9.39
487.7	512.4	9.31
475.4	524.7	9.39
463.1	537.0	9.41
450.8	549.3	9.43
438.5	561.6	9.48
426.2	573.9	9.47
413.8	586.3	9.48
401.5	598.6	9.44
389.2	610.9	9.43
376.9	623.2	9.43
364.6	635.5	9.42
352.3	647.8	9.41
340.0	660.1	9.39
327.7	672.4	9.31
315.4	684.7	9.30
303.1	697.0	9.25
290.8	709.3	9.18
278.5	721.6	9.18
266.2	733.9	9.11
253.8	746.3	9.07
241.5	758.6	9.04
229.2	770.9	8.98
216.9	783.2	8.97
204.6	795.5	8.94
192.3	807.8	8.90
180.0	820.1	8.90
167.7	832.4	8.88
155.4	844.7	8.87
143.1	857.0	8.88
130.8	869.3	8.84
118.5	881.6	8.83
106.2	893.9	8.84
93.8	906.3	8.82
81.5	918.6	8.84
69.2	930.9	8.86
56.9	943.2	8.86
44.6	955.5	8.92
32.3	967.8	8.97
20.0	980.1	9.11

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+10	+13	+16	+10	+13	+16
10.1	65.89	66.36	66.53	56.03	56.99	59.16
50.4	54.59	55.20	55.81	52.59	52.37	52.01
90.7	50.27	50.98	51.32	51.39	50.01	49.04
131.0	47.58	48.21	48.54	50.15	48.28	46.49
171.3	45.62	46.20	46.81	49.49	46.39	44.57
211.5	44.11	44.82	45.65	47.94	44.67	42.88
251.8	42.85	43.83	44.77	46.18	43.22	41.59
292.1	42.07	43.04	44.06	44.52	41.79	40.30
332.4	41.19	42.49	43.68	43.25	40.83	39.35
372.7	40.54	41.63	42.81	41.70	39.88	38.60
413.0	40.15	41.01	41.75	40.85	38.87	37.76
453.3	39.76	41.06	41.55	40.31	38.56	37.26
493.6	39.02	40.50	41.24	39.62	38.06	36.96
533.9	37.80	38.66	39.45	39.22	37.97	36.83
574.2	37.11	37.34	37.84	39.32	38.21	37.18
614.4	36.35	36.13	36.49	39.15	37.77	37.10
654.7	35.76	35.34	35.48	39.45	37.76	37.23
695.0	35.28	34.75	34.74	40.11	38.26	37.49
735.3	35.38	34.48	34.32	42.84	39.80	38.30
775.6	36.15	34.91	34.39	50.06	42.28	39.27
815.9	36.55	35.11	34.35	49.09	42.77	39.28
856.2	36.71	35.51	34.43	42.36	40.62	38.18
896.5	36.02	35.08	34.13	38.23	37.43	35.75
916.6	35.46	34.68	33.98	36.95	36.31	34.86
956.9	34.36	33.68	33.24	34.48	34.26	32.96
977.1	34.05	33.33	32.95	33.62	33.49	32.21
1017.3	33.40	32.69	32.26	31.68	31.87	30.73
1037.5	33.40	32.58	32.22	31.11	31.17	30.20
1077.8	33.40	32.03	31.66	29.52	29.50	28.61
1097.9	33.45	31.88	31.41	28.86	28.82	28.03
1138.2	33.50	31.71	30.97	27.46	27.42	26.70
1158.4	33.61	31.51	30.73	26.77	26.60	25.94
1198.7	34.13	31.53	30.46	25.43	25.16	24.54
1218.8	34.37	31.51	30.38	24.80	24.48	23.93
1259.1	34.89	31.82	30.29	23.47	23.09	22.48
1279.2	34.89	31.81	30.15	22.82	22.46	21.84
1319.5	35.00	32.15	30.10	21.50	21.25	20.49
1339.7	34.56	31.88	30.01	20.86	20.54	19.84
1380.0	32.70	31.06	29.42	19.68	19.37	18.64
1400.1	31.48	30.45	28.87	19.13	18.90	18.15

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+10	+13	+16
10.1	40.1	14.90	15.46	15.94
50.4	80.4	19.57	19.90	20.13
90.7	120.7	20.31	20.55	20.66
131.0	161.0	20.72	20.88	21.10
171.3	201.3	20.97	21.25	21.50
211.5	241.5	21.43	21.78	22.13
251.8	281.8	21.96	22.36	22.80
292.1	322.1	22.65	23.20	23.64
332.4	362.4	23.46	24.24	24.90
372.7	402.7	24.86	25.67	26.50
413.0	443.0	26.89	27.90	28.44
453.3	483.3	29.35	31.66	32.51
493.6	523.6	32.43	36.46	38.92
533.9	563.9	35.41	36.43	37.39
574.2	604.2	39.08	35.84	35.11
614.4	644.4	36.14	34.75	33.67
654.7	684.7	32.45	33.16	33.11
695.0	725.0	29.57	31.13	31.66
735.3	765.3	27.12	28.23	28.81
775.6	805.6	25.04	25.44	25.99
815.9	845.9	23.56	23.59	23.83
856.2	886.2	22.54	22.43	22.38
896.5	926.5	21.91	21.61	21.43
916.6	946.6	21.65	21.27	21.10
956.9	986.9	21.24	20.70	20.38
977.1	1007.1	20.91	20.36	20.02
1017.3	1047.3	20.11	19.57	19.24
1037.5	1067.5	19.66	19.14	18.87
1077.8	1107.8	18.74	18.29	18.02
1097.9	1127.9	18.38	17.94	17.71
1138.2	1168.2	17.79	17.33	17.14
1158.4	1188.4	17.61	17.13	16.91
1198.7	1228.7	17.16	16.70	16.50
1218.8	1248.8	16.90	16.47	16.25
1259.1	1289.1	16.44	16.11	15.89
1279.2	1309.2	16.15	15.90	15.71
1319.5	1349.5	15.49	15.37	15.27
1339.7	1369.7	15.12	15.12	15.01
1380.0	1410.0	14.36	14.49	14.46
1400.1	1430.1	14.06	14.21	14.23

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+10	+13	+16
10.1	40.1	1.38	1.35	1.36
50.4	80.4	1.18	1.08	1.08
90.7	120.7	1.21	1.09	1.05
131.0	161.0	1.24	1.14	1.08
171.3	201.3	1.31	1.21	1.15
211.5	241.5	1.39	1.29	1.23
251.8	281.8	1.51	1.40	1.34
292.1	322.1	1.65	1.53	1.46
332.4	362.4	1.81	1.68	1.60
372.7	402.7	1.99	1.83	1.74
413.0	443.0	2.19	2.01	1.90
453.3	483.3	2.42	2.22	2.09
493.6	523.6	2.61	2.39	2.26
533.9	563.9	2.86	2.58	2.43
574.2	604.2	3.09	2.77	2.58
614.4	644.4	3.25	2.92	2.73
654.7	684.7	3.40	3.09	2.89
695.0	725.0	3.52	3.24	3.06
735.3	765.3	3.58	3.37	3.21
775.6	805.6	3.60	3.46	3.33
815.9	845.9	3.62	3.51	3.42
856.2	886.2	3.65	3.56	3.49
896.5	926.5	3.63	3.58	3.53
916.6	946.6	3.62	3.58	3.54
956.9	986.9	3.56	3.54	3.51
977.1	1007.1	3.54	3.52	3.49
1017.3	1047.3	3.49	3.45	3.44
1037.5	1067.5	3.47	3.41	3.39
1077.8	1107.8	3.42	3.34	3.31
1097.9	1127.9	3.40	3.31	3.29
1138.2	1168.2	3.38	3.25	3.22
1158.4	1188.4	3.39	3.24	3.19
1198.7	1228.7	3.41	3.20	3.14
1218.8	1248.8	3.42	3.19	3.12
1259.1	1289.1	3.43	3.16	3.07
1279.2	1309.2	3.43	3.15	3.04
1319.5	1349.5	3.42	3.13	3.00
1339.7	1369.7	3.40	3.12	2.97
1380.0	1410.0	3.37	3.09	2.92
1400.1	1430.1	3.37	3.07	2.92

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+10	+13	+16
10.1	1.38	1.97	2.74
50.4	1.36	2.13	3.13
90.7	1.34	2.03	2.94
131.0	1.37	2.07	3.00
171.3	1.42	2.07	2.95
211.5	1.46	2.07	2.94
251.8	1.53	2.12	2.97
292.1	1.57	2.10	2.89
332.4	1.63	2.14	2.93
372.7	1.69	2.13	2.86
413.0	1.72	2.13	2.84
453.3	1.81	2.17	2.83
493.6	1.84	2.15	2.78
533.9	1.85	2.16	2.77
574.2	1.88	2.13	2.69
614.4	1.87	2.09	2.65
654.7	1.91	2.07	2.59
695.0	1.94	2.05	2.54
735.3	2.01	2.06	2.52
775.6	2.11	2.07	2.47
815.9	2.20	2.10	2.46
856.2	2.33	2.13	2.42
896.5	2.42	2.15	2.39
916.6	2.49	2.18	2.40
956.9	2.62	2.21	2.37
977.1	2.67	2.21	2.35
1017.3	2.78	2.24	2.33
1037.5	2.87	2.26	2.33
1077.8	2.96	2.25	2.25
1097.9	2.99	2.25	2.22
1138.2	3.13	2.30	2.20
1158.4	3.17	2.30	2.17
1198.7	3.17	2.29	2.10
1218.8	3.21	2.31	2.10
1259.1	3.26	2.34	2.06
1279.2	3.23	2.32	2.02
1319.5	3.25	2.32	1.98
1339.7	3.27	2.33	1.97
1380.0	3.24	2.30	1.91
1400.1	3.25	2.29	1.89

IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1) @LO (dBm)		
	+10	+13	+16
20.1	1.47	1.35	1.35
32.1	1.42	1.36	1.32
44.1	1.35	1.31	1.30
56.1	1.27	1.22	1.25
68.1	1.20	1.15	1.21
80.1	1.16	1.08	1.15
92.1	1.19	1.09	1.12
104.1	1.22	1.11	1.11
116.1	1.24	1.12	1.12
128.1	1.24	1.14	1.15
140.1	1.23	1.14	1.18
152.1	1.20	1.13	1.18
164.1	1.17	1.10	1.17
176.1	1.16	1.09	1.17
188.1	1.16	1.09	1.16
200.1	1.18	1.09	1.15
212.1	1.20	1.11	1.17
224.1	1.20	1.13	1.19
236.1	1.20	1.15	1.22
248.1	1.18	1.16	1.25
260.1	1.16	1.16	1.26
272.1	1.15	1.16	1.27
284.1	1.15	1.16	1.27
296.1	1.15	1.16	1.27
308.1	1.15	1.18	1.29
320.1	1.16	1.19	1.31
332.1	1.17	1.21	1.34
344.1	1.17	1.23	1.36
356.1	1.16	1.25	1.39
368.1	1.16	1.27	1.40
380.1	1.17	1.28	1.43
392.1	1.17	1.29	1.44
404.1	1.19	1.31	1.46
416.1	1.20	1.34	1.49
428.1	1.21	1.36	1.52
440.1	1.23	1.39	1.55
452.1	1.24	1.41	1.58
464.1	1.25	1.43	1.60
488.1	1.28	1.48	1.65
500.1	1.30	1.51	1.69

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	11	21	8	32	12	37	32	52	39	57
1	-	27	+0	31	20	44	40	33	31	42	34	49
2	>100	58	47	57	52	64	55	55	47	59	55	60
3	>100	68	49	57	46	55	53	76	63	58	76	62
4	>100	>86	84	76	68	74	69	78	84	71	67	75
5	>100	>86	>86	>86	78	80	75	78	79	>86	>86	84
6	>100	>86	>86	>86	>86	>86	>86	>86	86	>86	>86	>86
7	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
8	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>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: 500.1 MHz; -6.00 dBm.
LO IN: 530.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -14.09 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	20	32	20	46	28	51	53	70	55	72
1	-	29	+0	29	19	47	56	40	41	57	46	83
2	85	51	41	54	45	66	45	54	51	68	59	74
3	>100	51	31	43	31	44	41	75	48	53	52	64
4	>100	74	66	61	58	64	64	65	65	60	56	73
5	>100	55	67	61	63	55	52	48	56	68	72	56
6	>100	72	64	80	76	69	65	61	63	69	83	61
7	>100	73	64	67	82	75	54	53	51	56	62	79
8	>100	89	86	77	79	93	74	65	66	64	73	74
9	>100	94	75	87	68	71	88	69	62	70	66	64
10	>100	>96	91	94	90	80	79	>96	84	77	84	69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

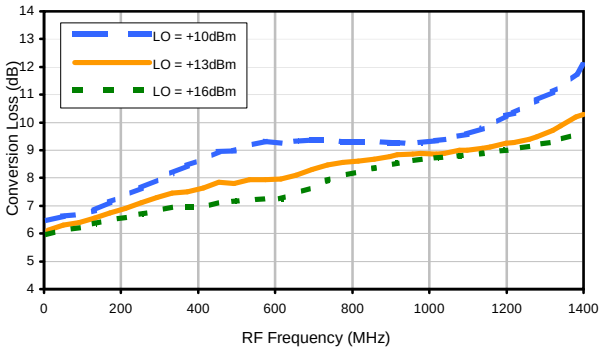
LO HARMONICS ORDER

Test conditions:
RF IN: 500.1 MHz; 4.00 dBm.
LO IN: 530.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -3.7 dBm

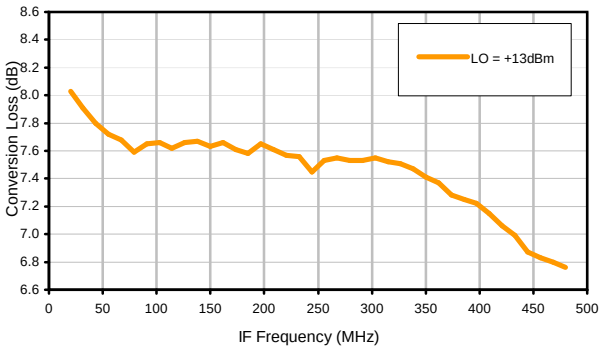
Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Typical Performance Curves

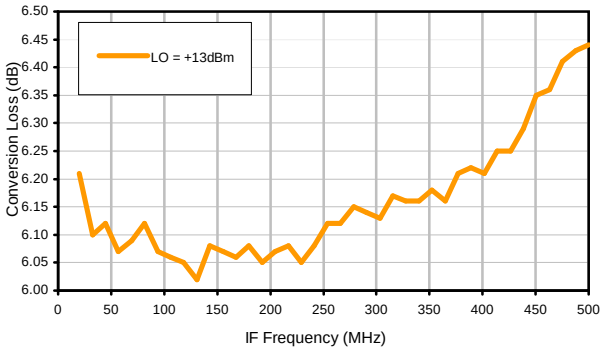
Conversion Loss @ IF=30MHz



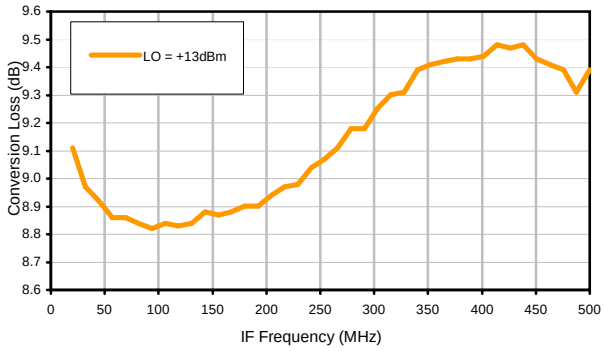
Conversion Loss vs. IF @ RF=500.1MHz



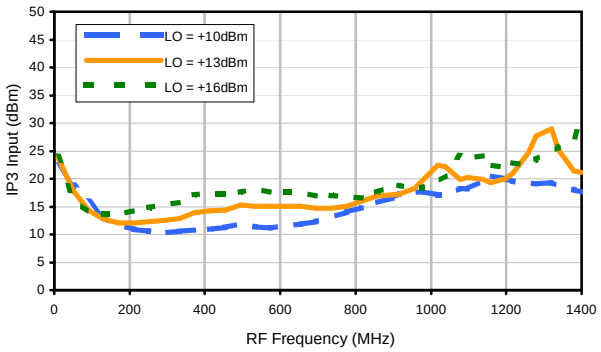
Conversion Loss vs. IF @ RF=10.1MHz



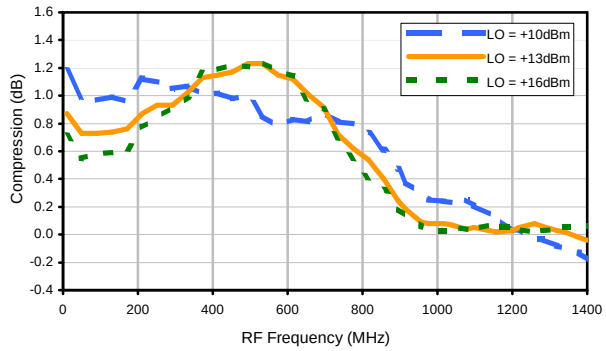
Conversion Loss vs. IF @ RF=1000.1MHz



IP3 Input

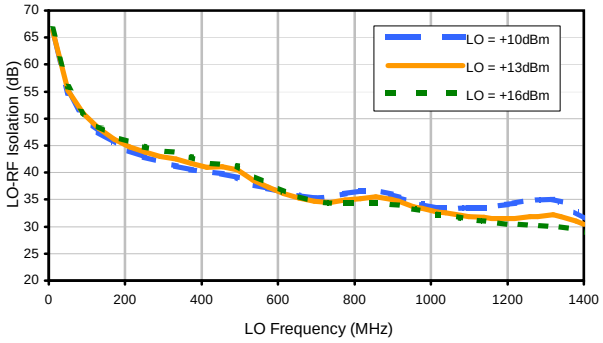


Compression @ RF IN=+9dBm

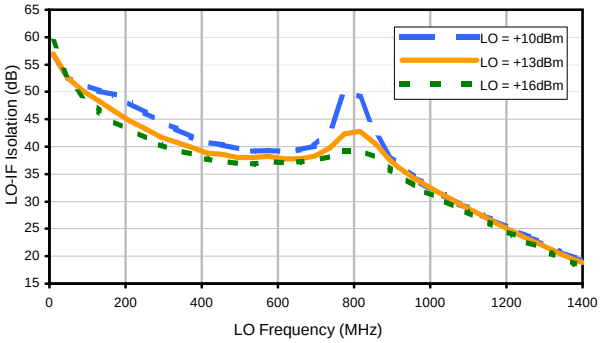


Typical Performance Curves

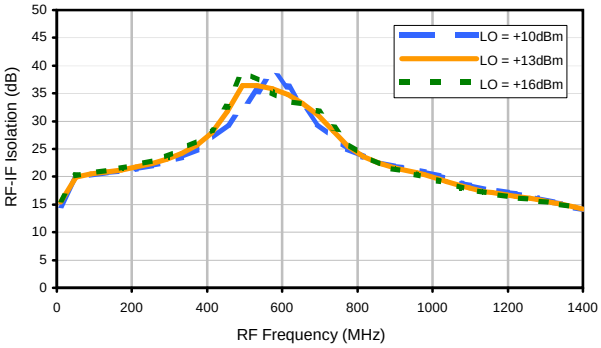
LO-RF Isolation



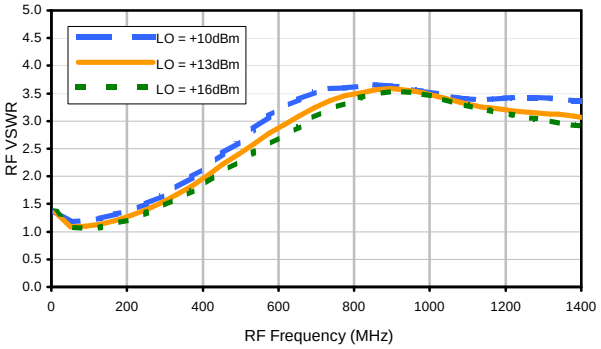
LO-IF Isolation



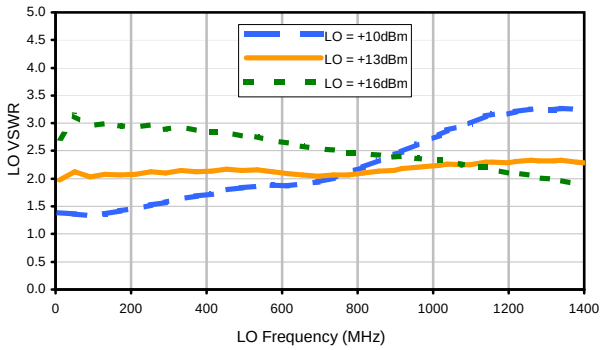
RF-IF Isolation



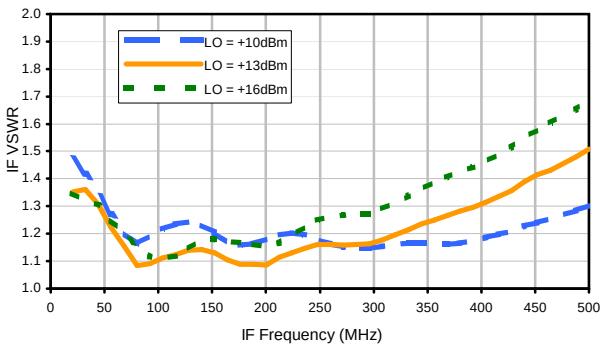
RF VSWR



LO VSWR



IF VSWR



Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	11	21	8	32	12	37	32	52	39	57
1	-	27	+0	31	20	44	40	33	31	42	34	49
2	>100	58	47	57	52	64	55	55	47	59	55	60
3	>100	68	49	57	46	55	53	76	63	58	76	62
4	>100	>86	84	76	68	74	69	78	84	71	67	75
5	>100	>86	>86	>86	78	80	75	78	79	>86	>86	84
6	>100	>86	>86	>86	>86	>86	>86	>86	86	>86	>86	>86
7	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
8	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>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: 500.1 MHz; -6.00 dBm.**
LO IN: 530.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -14.09 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	20	32	20	46	28	51	53	70	55	72
1	-	29	+0	29	19	47	56	40	41	57	46	83
2	85	51	41	54	45	66	45	54	51	68	59	74
3	>100	51	31	43	31	44	41	75	48	53	52	64
4	>100	74	66	61	58	64	64	65	65	60	56	73
5	>100	55	67	61	63	55	52	48	56	68	72	56
6	>100	72	64	80	76	69	65	61	63	69	83	61
7	>100	73	64	67	82	75	54	53	51	56	62	79
8	>100	89	86	77	79	93	74	65	66	64	73	74
9	>100	94	75	87	68	71	88	69	62	70	66	64
10	>100	>96	91	94	90	80	79	>96	84	77	84	69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

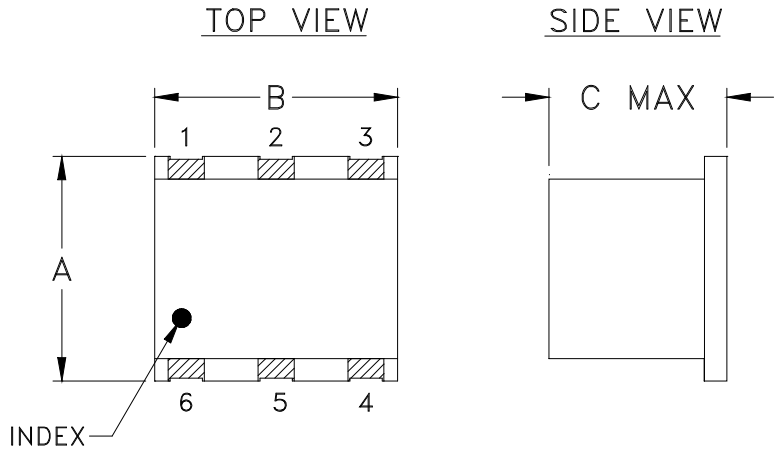
Test conditions: **RF IN: 500.1 MHz; 4.00 dBm.**
LO IN: 530.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -3.7 dBm

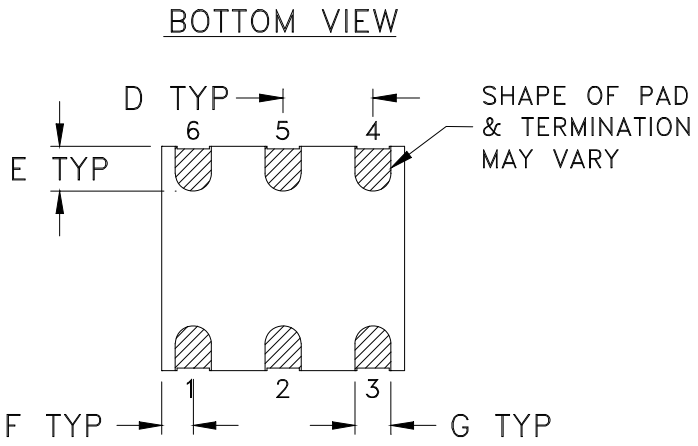
Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Case Style TT

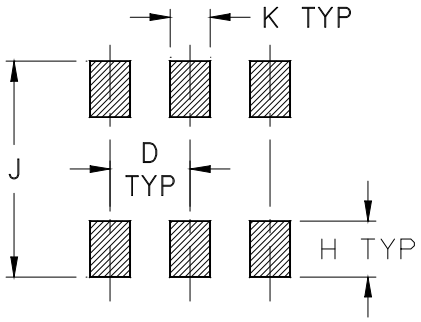
TT100

Outline Dimensions





PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

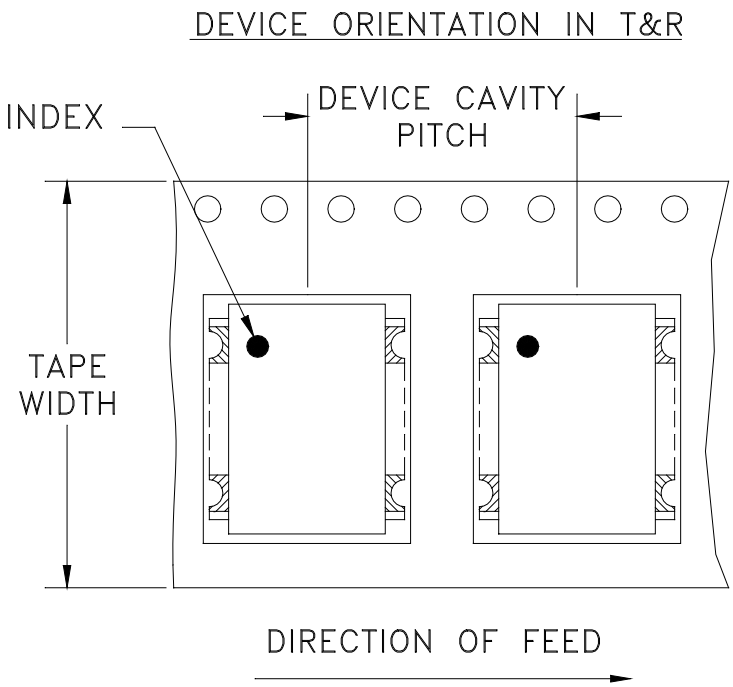
CASE #	A	B	C	D	E	F	G	H	J	K	WT. GRAM
TT100	.250 (6.35)	.31 (7.87)	.20 (5.08)	.100 (2.54)	.050 (1.27)	.055 (1.40)	.040 (1.02)	.070 (1.78)	.270 (6.86)	.050 (1.27)	.50

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3 Pl. ± .005

Notes:

1. Case material: Ceramic.
2. Terminations: Palladium Platinum Silver.

Tape & Reel Packaging TR-F2



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel See note
16	12	7	10
			20
			50
			100
			200
		13	500
			1000

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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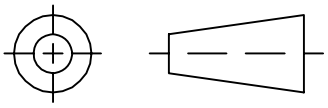
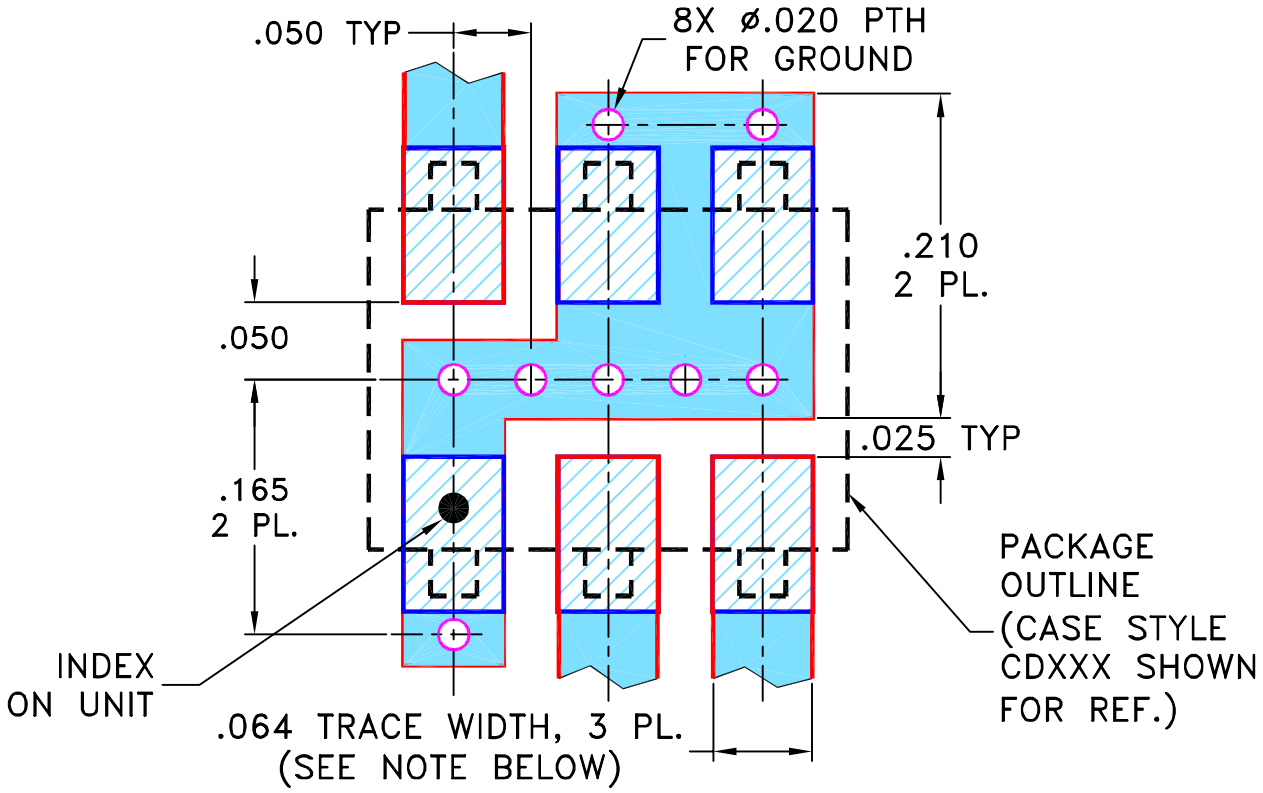
THIRD ANGLE PROJECTION



REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
A	M101143	ADDED "gk" PIN CONNECTION, TT100 CASE STYLE & NOTE 2	10/10/05	MMG	DJ
B	M102713	ADDED "...WITH SMOBC"	01/17/06	MMG	IL
C	M108637	REMOVED "PIN 1" , ADDED INDEX ON UNIT	12/01/06	MYG	FL

SUGGESTED MOUNTING CONFIGURATION FOR BH292, CD541/542/636/637, TT100/240 CASE STYLES, "gk", "ht", "hu", "nd", "w" PIN CONNECTIONS



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

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	MMG	07/17/02
TOLERANCES ON:	CHECKED	WL	08/02/02
2 PL DECIMALS ±	APPROVED	DJ	08/05/02
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

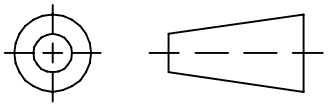
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, gk/ht/hu/nd/w, BH292, CD541/542/636/637, TT100/240, TB-03

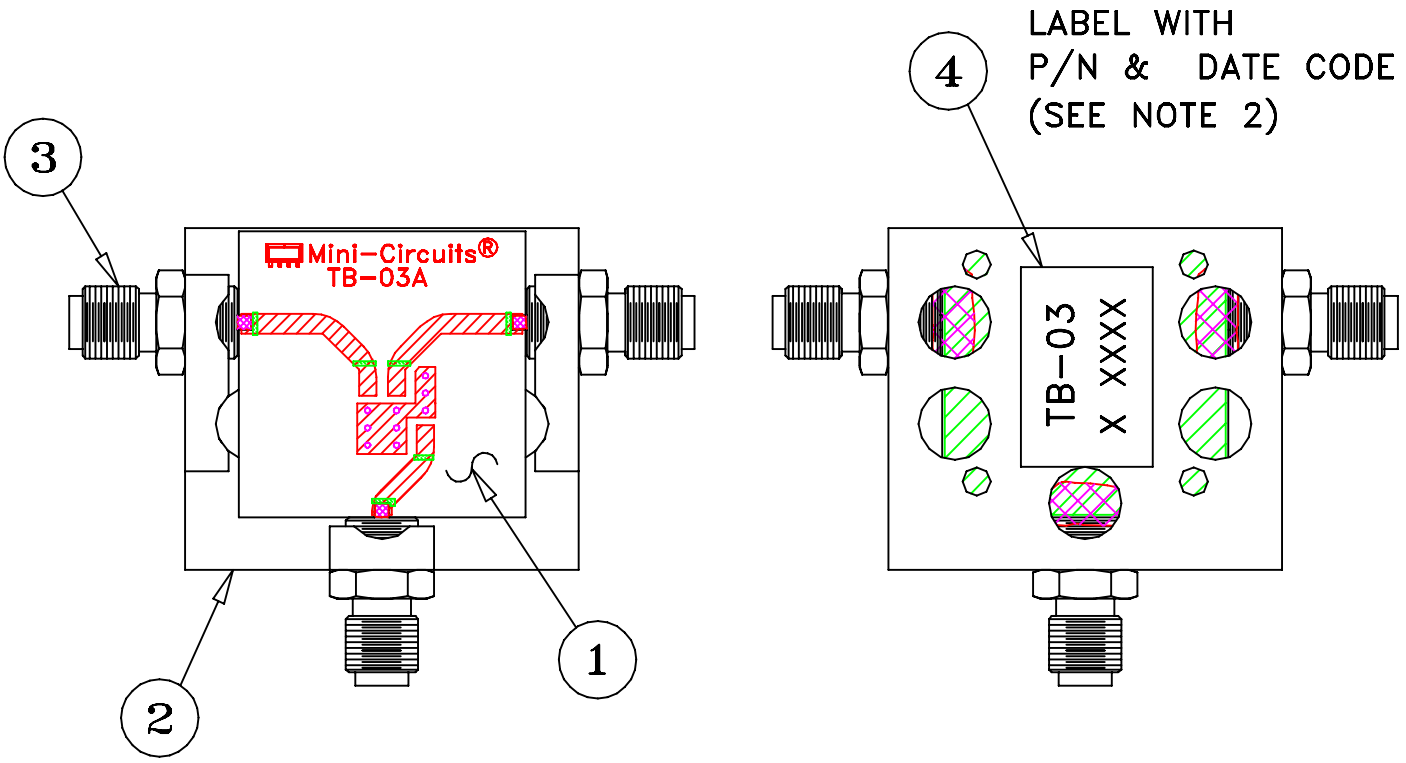
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-052	C

FILE:	SCALE:	SHEET:
98PL052	8:1	1 OF 1

THIRD ANGLE PROJECTION



REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
E	**M119737**	**UPDATED PCB**	**10.08**	**MF**	**AD**
F	M127659	UPDATED CARR	06.10	SW	SG
G	M127846	UPDATED SCHEMATIC DIAGRAM	06.10	SW	SG
H	M131840	UPDATED DWG	05.11	MF	AD



NOTES:

1. REFER TO -09 PAGE FOR ITEM DESCRIPTIONS. DESIGNATION NUMBERS ON -20 PAGE CORRESPOND TO THE NUMBERS ON -09 PAGE.
2. FOR TEXT HEIGHT & STYLE ON THE LABEL REFER TO: D3-G209.

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	S.WOLYNSKI	06.29.99
TOLERANCES ON:	CHECKED	SG	07.06.99
2 PL DECIMALS ±	APPROVED	MG	07.10.99
3 PL DECIMALS ±			
ANGLES ±			
FRACTIONS ±			

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

Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

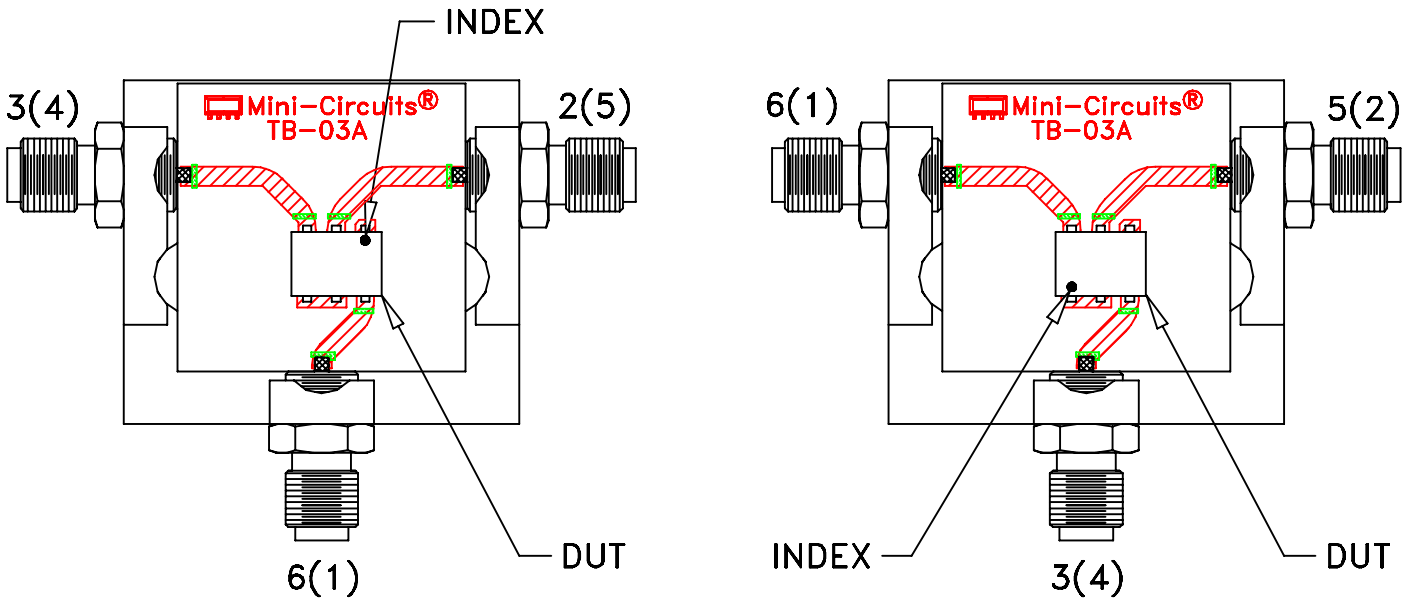
TB,ADE,CD542/636,06MX01,50

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	TB-03-20	H

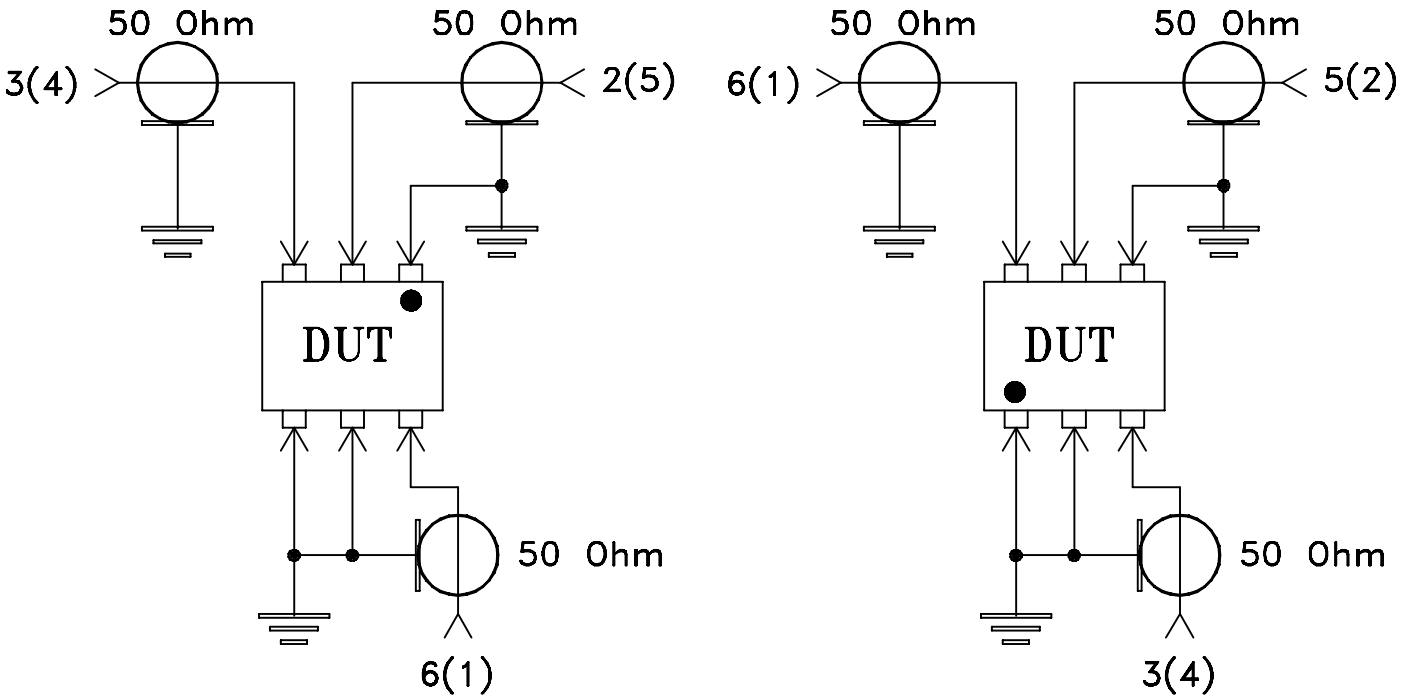
FILE:	SCALE:	SHEET:
WTB-03	1.5:1	1 OF 2

Evaluation Board and Circuit

For Pin Connections and DUT Orientation Refer to Data Sheet of the DUT



TB-03



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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