Non-Catalog Model

Frequency Mixer RMS-1WH

Level 17 (LO Power +17 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.

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

CASE STYLE : TT240

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency	**LO** (fL to fU)	10		750	MHz
	RF (fL to fU)	10		750	MHz
	IF	0		750	MHz
Conversion Loss	**mid band**		7.0	8.5	dB
	Total Range			8.8	dB
LO-RF Isolation	**Low Range**	40	55		dB
	Mid Range	22	43		dB
	Upper Range	20	28		dB
LO-IF Isolation	**Low Range**	30	52		dB
	Mid Range	22	38		dB
	Upper Range	20	29		dB
1 dB Comp. Input Power			+14		dBm

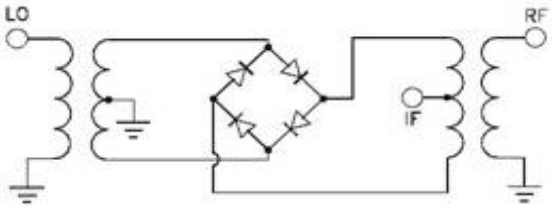
Notes: Low Range = [fL to 10fL] Mid Range = [10fL to fU/2] Upper Range = [fU/2 to fU]
mid band = [2fL to fU/2]

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-1WH

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+14	+17	+20
10.0	40.0	8.02	7.02	6.63
49.7	79.7	8.50	7.41	6.93
89.5	119.5	8.33	7.35	6.89
129.2	159.2	8.28	7.30	6.87
168.9	198.9	8.29	7.27	6.84
208.7	238.7	8.14	7.12	6.79
248.4	278.4	8.31	7.31	6.93
288.2	318.2	8.01	7.11	6.89
327.9	357.9	8.07	7.22	6.95
367.6	397.6	7.98	7.22	6.95
407.4	437.4	7.88	7.23	6.97
447.1	477.1	8.00	7.29	7.03
486.8	516.8	7.91	7.29	7.02
526.6	556.6	8.04	7.42	7.06
566.3	596.3	8.01	7.46	7.11
606.0	636.0	8.12	7.61	7.28
645.8	675.8	8.15	7.61	7.31
685.5	715.5	8.18	7.57	7.31
725.2	755.2	8.34	7.64	7.31
765.0	795.0	8.38	7.65	7.28
804.7	834.7	8.52	7.79	7.37
844.5	874.5	8.67	7.95	7.51
884.2	914.2	8.80	8.13	7.70
923.9	953.9	8.93	8.32	7.90
963.7	993.7	9.12	8.52	8.07
1003.4	1033.4	9.37	8.69	8.28
1043.1	1073.1	9.58	8.84	8.40
1082.9	1112.9	9.81	9.02	8.48
1122.6	1152.6	10.02	9.21	8.58
1162.3	1192.3	10.17	9.34	8.61
1202.1	1232.1	10.25	9.16	8.53
1241.8	1271.8	10.22	9.11	8.50
1281.6	1311.6	10.28	9.21	8.64
1321.3	1351.3	10.32	9.23	8.67
1361.0	1391.0	10.53	9.47	8.87
1380.9	1410.9	10.64	9.61	8.99
1420.6	1450.6	10.92	9.82	9.22
1440.5	1470.5	10.95	9.84	9.26
1480.2	1510.2	11.45	10.19	9.52
1500.1	1530.1	11.56	10.30	9.58

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
10.0	40.0	22.63	26.34	31.45
49.7	79.7	22.15	25.58	28.33
89.5	119.5	22.26	25.56	27.78
129.2	159.2	22.94	26.18	27.22
168.9	198.9	22.31	25.89	27.86
208.7	238.7	23.39	26.36	29.91
248.4	278.4	21.57	24.18	28.74
288.2	318.2	23.66	25.89	29.47
327.9	357.9	22.81	26.68	32.07
367.6	397.6	23.14	26.87	32.25
407.4	437.4	23.77	28.60	29.62
447.1	477.1	24.35	27.33	30.37
486.8	516.8	24.87	29.57	29.07
526.6	556.6	25.20	27.40	26.68
566.3	596.3	25.38	25.92	25.03
606.0	636.0	24.92	25.54	25.47
645.8	675.8	24.40	27.32	28.23
685.5	715.5	24.26	28.27	28.05
725.2	755.2	25.87	27.79	27.30
765.0	795.0	27.33	29.51	27.58
804.7	834.7	23.10	27.63	27.65
844.5	874.5	20.35	24.67	26.56
884.2	914.2	19.97	22.70	26.54
923.9	953.9	19.48	21.06	24.13
963.7	993.7	18.06	19.04	22.42
1003.4	1033.4	18.21	18.48	21.24
1043.1	1073.1	18.70	18.23	19.71
1082.9	1112.9	19.14	19.23	20.59
1122.6	1152.6	19.78	20.23	21.55
1162.3	1192.3	20.28	21.34	22.97
1202.1	1232.1	21.10	23.63	26.00
1241.8	1271.8	21.44	24.51	27.11
1281.6	1311.6	22.12	25.89	27.30
1321.3	1351.3	23.64	27.63	28.76
1361.0	1391.0	24.36	31.21	33.33
1380.9	1410.9	24.72	28.97	34.80
1420.6	1450.6	23.54	27.07	30.01
1440.5	1470.5	23.66	27.05	29.21
1480.2	1510.2	21.09	24.95	26.79
1500.1	1530.1	20.54	24.75	26.82

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+14dBm (dB) @LO (dBm)		
		+14	+17	+20
10.0	40.0	0.20	0.07	0.00
49.7	79.7	0.20	0.03	0.01
89.5	119.5	0.19	0.00	0.02
129.2	159.2	0.21	0.05	0.03
168.9	198.9	0.20	0.06	0.04
208.7	238.7	0.31	0.12	0.06
248.4	278.4	0.16	0.10	0.05
288.2	318.2	0.45	0.17	0.05
327.9	357.9	0.38	0.12	0.07
367.6	397.6	0.47	0.13	0.04
407.4	437.4	0.46	0.13	0.07
447.1	477.1	0.47	0.10	0.04
486.8	516.8	0.54	0.17	0.10
526.6	556.6	0.52	0.15	0.10
566.3	596.3	0.56	0.15	0.11
606.0	636.0	0.55	0.09	0.06
645.8	675.8	0.54	0.14	0.11
685.5	715.5	0.55	0.19	0.11
725.2	755.2	0.58	0.30	0.22
765.0	795.0	0.57	0.36	0.24
804.7	834.7	0.55	0.35	0.25
844.5	874.5	0.55	0.32	0.29
884.2	914.2	0.49	0.32	0.25
923.9	953.9	0.50	0.35	0.26
963.7	993.7	0.46	0.33	0.26
1003.4	1033.4	0.46	0.36	0.29
1043.1	1073.1	0.43	0.34	0.28
1082.9	1112.9	0.38	0.31	0.30
1122.6	1152.6	0.31	0.23	0.31
1162.3	1192.3	0.23	0.21	0.31
1202.1	1232.1	0.30	0.35	0.36
1241.8	1271.8	0.31	0.41	0.38
1281.6	1311.6	0.39	0.39	0.36
1321.3	1351.3	0.42	0.41	0.35
1361.0	1391.0	0.41	0.33	0.32
1380.9	1410.9	0.41	0.32	0.29
1420.6	1450.6	0.32	0.27	0.26
1440.5	1470.5	0.38	0.30	0.28
1480.2	1510.2	0.27	0.29	0.27
1500.1	1530.1	0.26	0.28	0.29

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=375.1MHz (dB) @LO (dBm) +17
365.0	10.1	7.43
355.9	19.2	7.43
346.8	28.3	7.43
337.7	37.4	7.31
328.6	46.5	7.38
319.5	55.6	7.30
310.4	64.7	7.32
301.3	73.8	7.35
292.2	82.9	7.30
283.1	92.0	7.36
274.0	101.1	7.28
264.9	110.2	7.32
255.8	119.3	7.24
246.7	128.4	7.17
237.6	137.5	7.20
228.5	146.6	7.11
219.4	155.7	7.16
210.3	164.8	7.11
201.2	173.9	7.12
192.1	183.0	7.12
182.9	192.2	7.00
173.8	201.3	7.12
164.7	210.4	7.03
155.6	219.5	7.01
146.5	228.6	7.00
137.4	237.7	6.97
128.3	246.8	7.02
119.2	255.9	6.92
110.1	265.0	6.97
101.0	274.1	7.03
91.9	283.2	6.99
82.8	292.3	7.02
73.7	301.4	7.01
64.6	310.5	7.08
55.5	319.6	7.01
46.4	328.7	7.03
37.3	337.8	7.09
28.2	346.9	7.08
19.1	356.0	7.10
10.0	365.1	7.23

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +17
10.0	20.1	7.26
28.7	38.8	7.02
47.4	57.5	7.16
66.2	76.3	7.23
84.9	95.0	7.26
103.6	113.7	7.15
122.3	132.4	7.11
141.0	151.1	7.21
159.7	169.8	7.31
178.5	188.6	7.28
197.2	207.3	7.22
215.9	226.0	7.24
234.6	244.7	7.30
253.3	263.4	7.39
272.1	282.2	7.39
290.8	300.9	7.35
309.5	319.6	7.37
328.2	338.3	7.50
346.9	357.0	7.45
365.6	375.7	7.52
384.4	394.5	7.51
403.1	413.2	7.53
421.8	431.9	7.58
440.5	450.6	7.66
459.2	469.3	7.68
477.9	488.0	7.59
496.7	506.8	7.65
515.4	525.5	7.63
534.1	544.2	7.66
552.8	562.9	7.67
571.5	581.6	7.74
590.3	600.4	7.70
609.0	619.1	7.69
627.7	637.8	7.67
646.4	656.5	7.66
665.1	675.2	7.69
683.8	693.9	7.62
702.6	712.7	7.62
721.3	731.4	7.55
740.0	750.1	7.62

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=750.1MHz (dB) @LO (dBm) +17
740.0	10.1	7.79
721.3	28.8	7.70
702.6	47.5	7.65
683.8	66.3	7.51
665.1	85.0	7.49
646.4	103.7	7.41
627.7	122.4	7.39
609.0	141.1	7.25
590.3	159.8	7.15
571.5	178.6	7.19
552.8	197.3	7.11
534.1	216.0	7.12
515.4	234.7	6.98
496.7	253.4	6.98
477.9	272.2	6.93
459.2	290.9	6.97
440.5	309.6	7.01
421.8	328.3	6.96
403.1	347.0	6.93
384.4	365.7	6.99
365.6	384.5	7.02
346.9	403.2	7.01
328.2	421.9	7.05
309.5	440.6	7.04
290.8	459.3	7.09
272.1	478.0	7.12
253.3	496.8	7.21
234.6	515.5	7.18
215.9	534.2	7.27
197.2	552.9	7.31
178.5	571.6	7.36
159.7	590.4	7.38
141.0	609.1	7.42
122.3	627.8	7.45
103.6	646.5	7.47
84.9	665.2	7.54
66.2	683.9	7.54
47.4	702.7	7.58
28.7	721.4	7.59
10.0	740.1	7.77

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
10.0	70.26	70.79	70.71	72.88	63.49	64.55
49.7	56.36	56.56	56.75	60.18	64.91	55.11
89.5	51.09	51.33	51.61	54.04	68.20	52.50
129.2	47.78	48.02	47.98	50.16	63.92	48.54
168.9	45.40	45.50	45.51	47.30	67.15	47.29
208.7	43.22	43.30	43.75	45.33	64.17	47.12
248.4	41.64	41.72	42.15	43.49	61.99	46.18
288.2	40.07	40.55	40.94	41.33	51.39	46.90
327.9	38.85	39.43	40.00	39.91	47.26	45.17
367.6	37.89	38.50	38.93	37.97	42.60	42.55
407.4	37.00	37.74	38.11	36.47	40.04	40.70
447.1	36.18	36.99	37.36	35.00	37.82	38.65
486.8	35.60	36.10	36.48	33.01	35.43	36.91
526.6	35.08	35.56	35.66	31.84	34.08	35.58
566.3	34.69	35.16	35.17	30.09	32.05	33.76
606.0	34.30	34.92	35.10	29.05	30.93	32.56
645.8	33.90	34.65	34.97	27.92	29.58	31.17
685.5	33.43	34.37	34.75	26.88	28.60	30.31
725.2	33.04	34.01	34.42	25.93	27.62	29.40
765.0	32.49	33.53	33.69	24.88	26.72	28.56
804.7	31.88	33.06	33.26	24.08	26.02	27.72
844.5	31.34	32.51	32.73	23.26	25.16	26.79
884.2	30.90	31.98	32.35	22.69	24.66	26.42
923.9	30.52	31.62	32.28	21.98	23.88	25.70
963.7	30.10	31.23	31.90	21.36	23.26	25.15
1003.4	30.01	31.20	32.02	21.02	22.92	24.89
1043.1	29.77	30.96	31.96	20.47	22.30	24.27
1082.9	29.67	30.78	31.85	20.23	22.17	24.16
1122.6	29.68	30.62	31.65	19.74	21.69	23.71
1162.3	29.76	30.57	31.46	19.42	21.43	23.49
1202.1	29.91	30.62	31.29	19.15	21.25	23.31
1241.8	29.95	30.43	30.89	18.85	21.05	23.07
1281.6	29.95	30.07	30.39	18.52	20.65	22.54
1321.3	29.48	29.49	29.61	18.24	20.41	22.23
1361.0	29.17	28.91	28.98	18.01	20.19	21.98
1380.9	28.79	28.51	28.55	17.93	20.04	21.74
1420.6	28.34	28.00	28.00	17.36	19.40	21.07
1440.5	27.91	27.50	27.43	17.24	19.25	20.88
1480.2	27.38	27.07	26.92	16.95	18.94	20.57
1500.1	26.84	26.52	26.42	16.70	18.63	20.23

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
10.0	40.0	44.60	47.33	41.15
49.7	79.7	37.70	37.26	36.44
89.5	119.5	33.35	32.58	32.10
129.2	159.2	30.33	29.87	29.66
168.9	198.9	28.59	28.19	27.95
208.7	238.7	27.33	27.00	26.71
248.4	278.4	26.51	26.22	25.91
288.2	318.2	25.96	25.66	25.45
327.9	357.9	25.64	25.38	25.21
367.6	397.6	25.40	25.33	25.18
407.4	437.4	25.25	25.39	25.37
447.1	477.1	25.13	25.50	25.67
486.8	516.8	25.17	25.50	25.90
526.6	556.6	25.22	25.50	25.73
566.3	596.3	25.15	25.51	25.63
606.0	636.0	24.65	24.93	25.16
645.8	675.8	23.48	23.79	24.07
685.5	715.5	21.90	22.21	22.54
725.2	755.2	20.16	20.60	21.02
765.0	795.0	18.54	19.01	19.45
804.7	834.7	17.35	17.71	18.09
844.5	874.5	16.36	16.61	16.95
884.2	914.2	15.52	15.65	16.04
923.9	953.9	14.72	14.85	15.10
963.7	993.7	14.01	14.17	14.35
1003.4	1033.4	13.41	13.55	13.78
1043.1	1073.1	12.89	12.97	13.16
1082.9	1112.9	12.49	12.55	12.68
1122.6	1152.6	12.02	12.08	12.18
1162.3	1192.3	11.61	11.72	11.93
1202.1	1232.1	11.29	11.51	11.81
1241.8	1271.8	11.12	11.45	11.85
1281.6	1311.6	10.96	11.36	11.73
1321.3	1351.3	10.81	11.23	11.59
1361.0	1391.0	10.75	11.12	11.49
1380.9	1410.9	10.78	11.18	11.52
1420.6	1450.6	10.87	11.30	11.65
1440.5	1470.5	10.95	11.42	11.80
1480.2	1510.2	11.00	11.57	12.04
1500.1	1530.1	11.01	11.65	12.14

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
10.0	40.0	1.15	1.22	1.29
49.7	79.7	1.04	1.13	1.22
89.5	119.5	1.03	1.14	1.23
129.2	159.2	1.04	1.14	1.24
168.9	198.9	1.04	1.15	1.25
208.7	238.7	1.04	1.17	1.27
248.4	278.4	1.02	1.14	1.25
288.2	318.2	1.05	1.19	1.28
327.9	357.9	1.04	1.19	1.29
367.6	397.6	1.07	1.21	1.31
407.4	437.4	1.10	1.24	1.34
447.1	477.1	1.11	1.26	1.35
486.8	516.8	1.15	1.29	1.39
526.6	556.6	1.17	1.30	1.41
566.3	596.3	1.20	1.33	1.43
606.0	636.0	1.23	1.34	1.44
645.8	675.8	1.27	1.37	1.46
685.5	715.5	1.31	1.43	1.52
725.2	755.2	1.34	1.47	1.57
765.0	795.0	1.38	1.53	1.64
804.7	834.7	1.41	1.58	1.70
844.5	874.5	1.43	1.59	1.72
884.2	914.2	1.47	1.61	1.73
923.9	953.9	1.51	1.62	1.74
963.7	993.7	1.53	1.62	1.72
1003.4	1033.4	1.56	1.63	1.72
1043.1	1073.1	1.60	1.64	1.73
1082.9	1112.9	1.64	1.68	1.76
1122.6	1152.6	1.69	1.72	1.79
1162.3	1192.3	1.75	1.78	1.86
1202.1	1232.1	1.84	1.89	1.97
1241.8	1271.8	1.96	2.01	2.08
1281.6	1311.6	2.10	2.14	2.20
1321.3	1351.3	2.23	2.26	2.31
1361.0	1391.0	2.37	2.39	2.42
1380.9	1410.9	2.46	2.47	2.50
1420.6	1450.6	2.62	2.63	2.64
1440.5	1470.5	2.70	2.70	2.72
1480.2	1510.2	2.88	2.86	2.87
1500.1	1530.1	2.97	2.95	2.95

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
10.0	1.11	1.53	2.21
49.7	1.06	1.65	2.45
89.5	1.03	1.54	2.23
129.2	1.04	1.60	2.37
168.9	1.03	1.56	2.27
208.7	1.02	1.56	2.28
248.4	1.04	1.60	2.34
288.2	1.03	1.56	2.26
327.9	1.04	1.61	2.36
367.6	1.08	1.61	2.32
407.4	1.08	1.63	2.35
447.1	1.13	1.67	2.39
486.8	1.16	1.67	2.37
526.6	1.18	1.72	2.44
566.3	1.23	1.74	2.42
606.0	1.25	1.77	2.48
645.8	1.30	1.80	2.49
685.5	1.33	1.81	2.48
725.2	1.38	1.86	2.53
765.0	1.44	1.89	2.53
804.7	1.48	1.95	2.60
844.5	1.53	2.01	2.65
884.2	1.56	2.04	2.68
923.9	1.60	2.08	2.73
963.7	1.66	2.14	2.78
1003.4	1.68	2.15	2.79
1043.1	1.72	2.17	2.81
1082.9	1.74	2.18	2.79
1122.6	1.77	2.17	2.78
1162.3	1.80	2.19	2.78
1202.1	1.79	2.13	2.71
1241.8	1.82	2.14	2.72
1281.6	1.88	2.18	2.74
1321.3	1.94	2.19	2.73
1361.0	2.04	2.27	2.80
1380.9	2.10	2.31	2.82
1420.6	2.21	2.36	2.83
1440.5	2.29	2.42	2.89
1480.2	2.41	2.50	2.93
1500.1	2.48	2.53	2.93

IF (OUT) (MHz)	IF VSWR @LO=750.5MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	2.48	2.04	1.72
29.0	2.62	2.08	1.80
47.9	2.37	1.92	1.63
66.9	2.43	1.95	1.68
85.9	2.42	1.94	1.66
104.9	2.52	2.02	1.73
123.8	2.47	1.97	1.68
142.8	2.47	1.98	1.69
161.8	2.44	1.96	1.68
180.8	2.46	1.97	1.69
199.7	2.51	1.99	1.70
218.7	2.48	1.98	1.69
237.7	2.44	1.95	1.66
256.7	2.43	1.93	1.65
275.6	2.42	1.92	1.64
294.6	2.46	1.96	1.67
313.6	2.48	1.97	1.68
332.6	2.46	1.96	1.66
351.5	2.42	1.92	1.64
370.5	2.43	1.93	1.65
389.5	2.44	1.94	1.66
408.5	2.43	1.93	1.65
427.4	2.43	1.93	1.64
446.4	2.42	1.93	1.65
465.4	2.41	1.92	1.65
484.4	2.39	1.90	1.63
503.3	2.41	1.92	1.64
522.3	2.40	1.91	1.64
541.3	2.36	1.89	1.62
560.3	2.33	1.86	1.60
579.2	2.37	1.89	1.63
598.2	2.37	1.90	1.64
617.2	2.30	1.85	1.60
636.2	2.30	1.85	1.60
655.1	2.28	1.85	1.61
674.1	2.29	1.86	1.62
693.1	2.25	1.82	1.59
712.1	2.23	1.81	1.58
731.0	2.25	1.84	1.60
750.0	2.12	1.80	1.64

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	16	20	8	21	13	24	25	40	35	53
1	-	18	+0	32	16	33	29	36	25	43	29	48
2	98	57	44	53	44	60	43	54	45	56	57	64
3	>100	69	65	78	52	61	49	66	48	63	47	64
4	>100	79	76	75	77	80	82	82	76	80	68	71
5	>100	85	82	89	79	86	75	84	77	>92	75	82
6	>100	>92	>92	>92	>92	>92	>92	90	90	91	90	>92
7	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
8	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
9	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
10	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	90	>92
RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 370.1 MHz; -1.00 dBm.
LO IN: 400.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -8.49 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	27	31	20	35	29	42	45	57	43	59
1	-	18	+0	31	15	33	26	35	33	53	39	56
2	78	57	40	55	38	50	36	48	37	47	48	65
3	>100	47	46	55	46	53	37	70	40	60	38	55
4	>100	60	55	59	54	60	59	61	53	76	60	75
5	>100	72	65	61	55	63	51	58	49	62	48	62
6	>100	67	68	75	71	71	80	74	67	66	61	72
7	>100	77	71	74	72	77	68	71	66	69	68	71
8	>100	86	80	85	82	81	81	82	76	76	74	71
9	>100	90	81	81	79	79	78	81	76	81	81	84
10	>100	>101	93	>101	85	86	85	84	83	84	82	80
RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

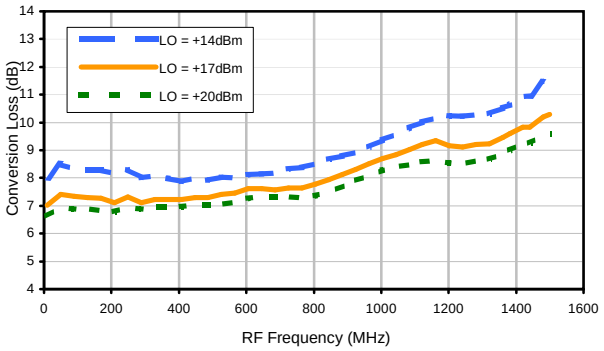
Test conditions: RF IN: 370.1 MHz; 9.00 dBm.
LO IN: 400.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; 1.42 dBm

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.

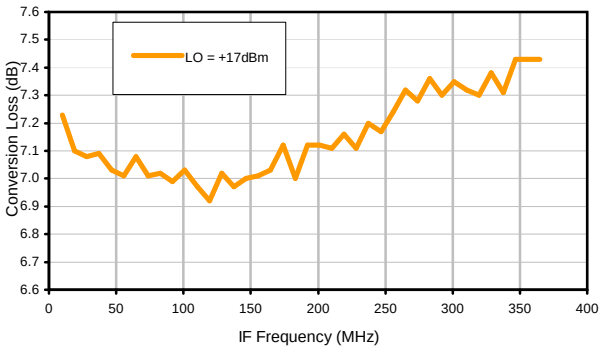
Frequency Mixer RMS-1WH

Typical Performance Curves

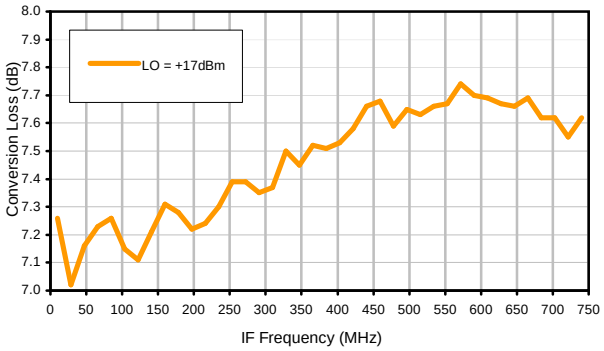
Conversion Loss @ IF=30MHz



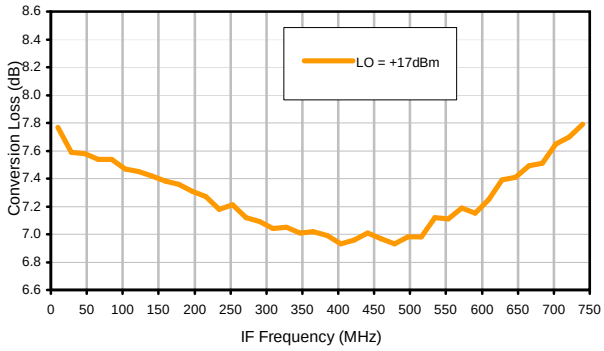
Conversion Loss vs. IF @ RF=375.1MHz



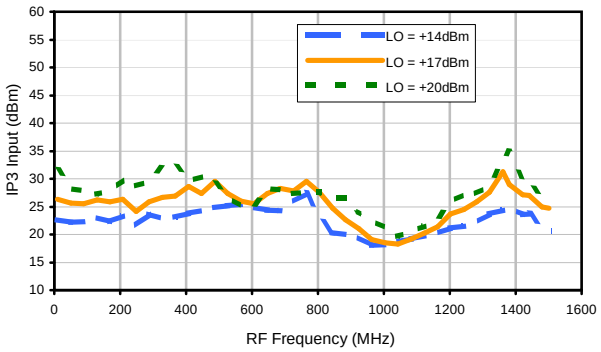
Conversion Loss vs. IF @ RF=10.1MHz



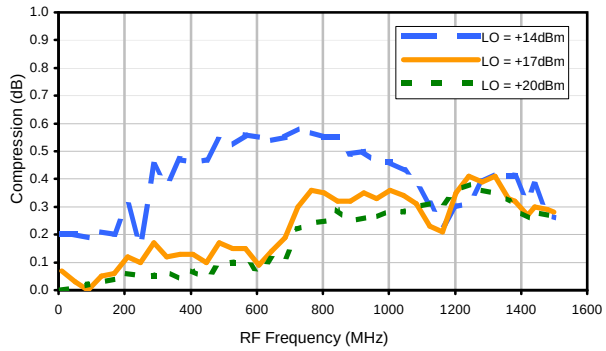
Conversion Loss vs. IF @ RF=750.1MHz



IP3 Input

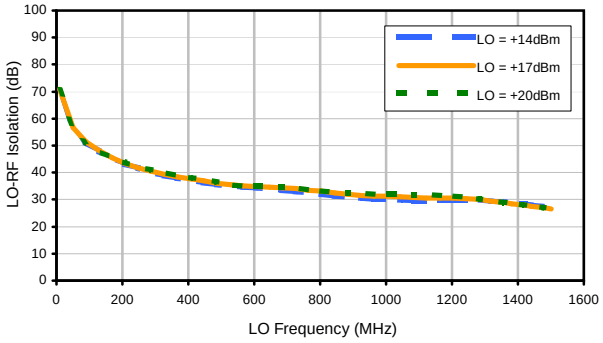


Compression @ RF IN=+14dBm

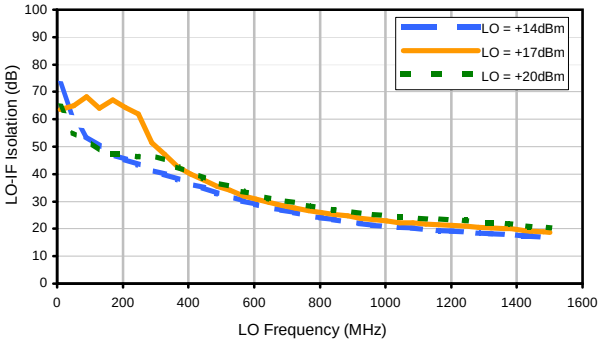


Typical Performance Curves

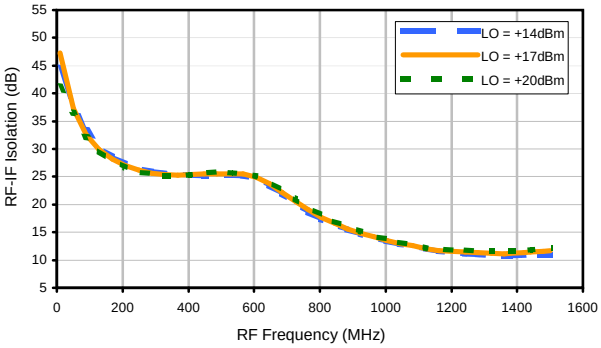
LO-RF Isolation



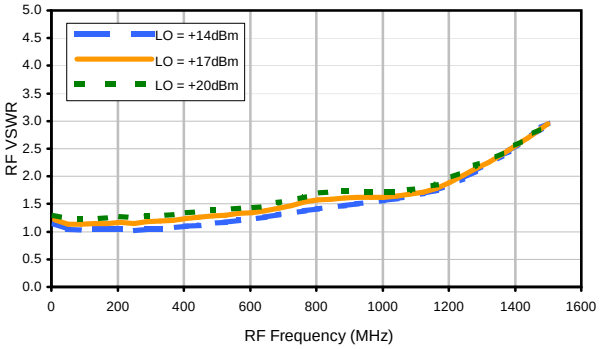
LO-IF Isolation



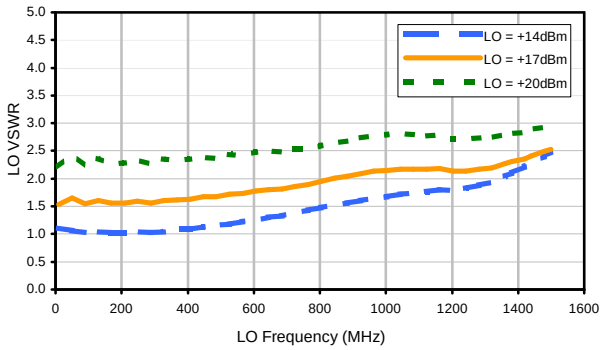
RF-IF Isolation



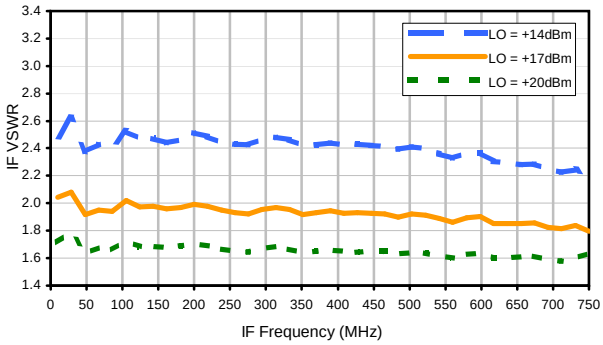
RF VSWR



LO VSWR



IF VSWR



Frequency Mixer RMS-1WH

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	16	20	8	21	13	24	25	40	35	53
1	-	18	+0	32	16	33	29	36	25	43	29	48
2	98	57	44	53	44	60	43	54	45	56	57	64
3	>100	69	65	78	52	61	49	66	48	63	47	64
4	>100	79	76	75	77	80	82	82	76	80	68	71
5	>100	85	82	89	79	86	75	84	77	>92	75	82
6	>100	>92	>92	>92	>92	>92	>92	90	90	91	90	>92
7	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
8	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
9	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
10	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	90	>92
RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 370.1 MHz; -1.00 dBm.
LO IN: 400.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -8.49 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	27	31	20	35	29	42	45	57	43	59
1	-	18	+0	31	15	33	26	35	33	53	39	56
2	78	57	40	55	38	50	36	48	37	47	48	65
3	>100	47	46	55	46	53	37	70	40	60	38	55
4	>100	60	55	59	54	60	59	61	53	76	60	75
5	>100	72	65	61	55	63	51	58	49	62	48	62
6	>100	67	68	75	71	71	80	74	67	66	61	72
7	>100	77	71	74	72	77	68	71	66	69	68	71
8	>100	86	80	85	82	81	81	82	76	76	74	71
9	>100	90	81	81	79	79	78	81	76	81	81	84
10	>100	>101	93	>101	85	86	85	84	83	84	82	80
RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

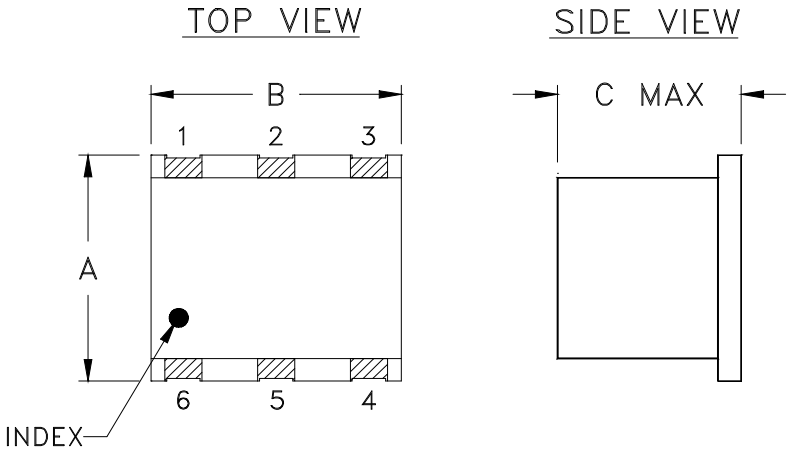
Test conditions:
RF IN: 370.1 MHz; 9.00 dBm.
LO IN: 400.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; 1.42 dBm

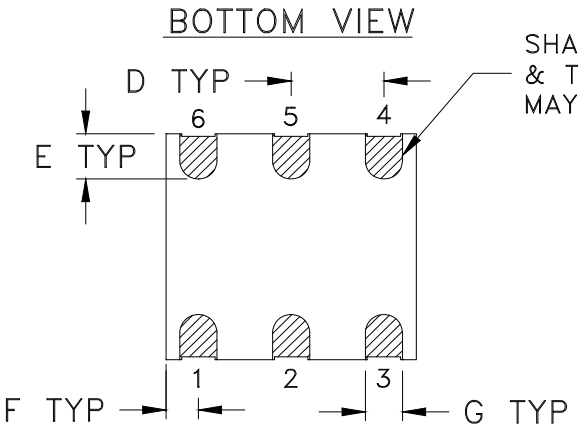
Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Case Style TT

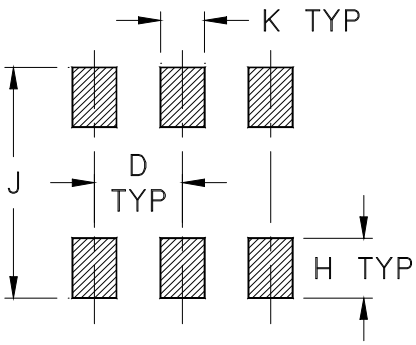
TT240

Outline Dimensions





PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

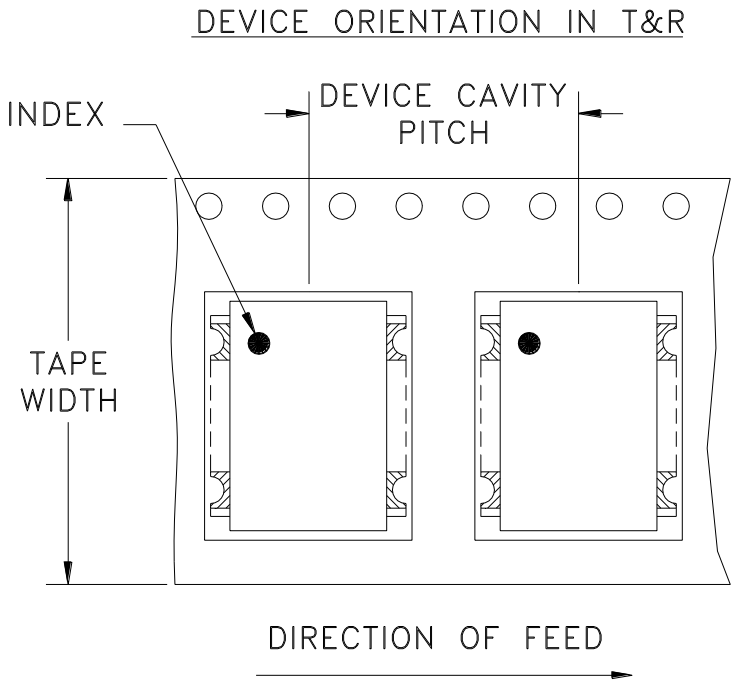
CASE #	A	B	C	D	E	F	G	H	J	K	WT. GRAM
TT240	.250 (6.35)	.31 (7.87)	.20 (5.08)	.100 (2.54)	.050 (1.27)	.055 (1.40)	.040 (1.02)	.070 (1.78)	.270 (6.86)	.050 (1.27)	.50

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

Notes:

1. Case material: Ceramic.
2. Termination finish:
   For RoHS Case Styles: 2-10µ inch (.05-.25 microns) Gold plate over 100-300 µ inch (2.54-7.62 microns) Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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

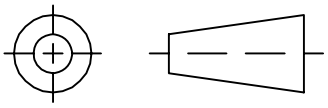
Note: Please consult individual model data sheet to determine device per reel availability

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.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

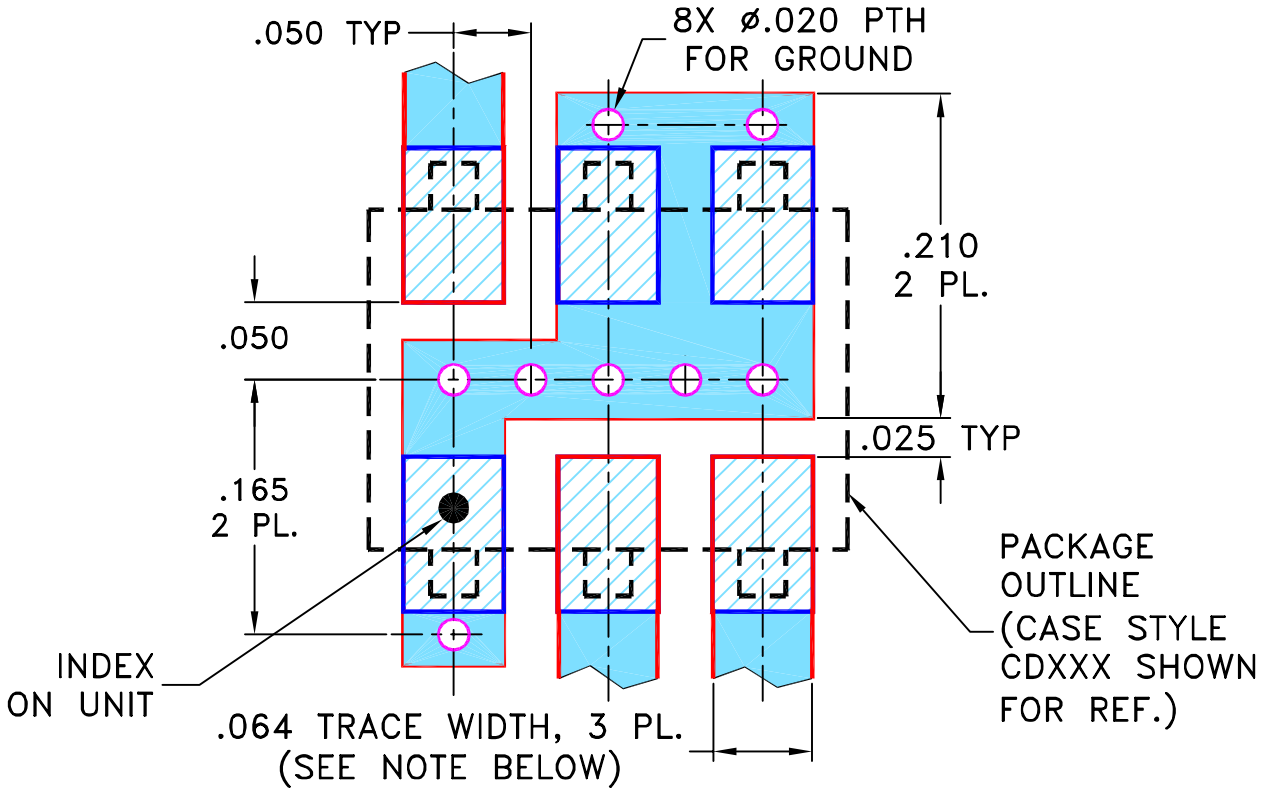
Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

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

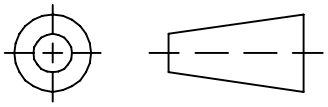
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

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

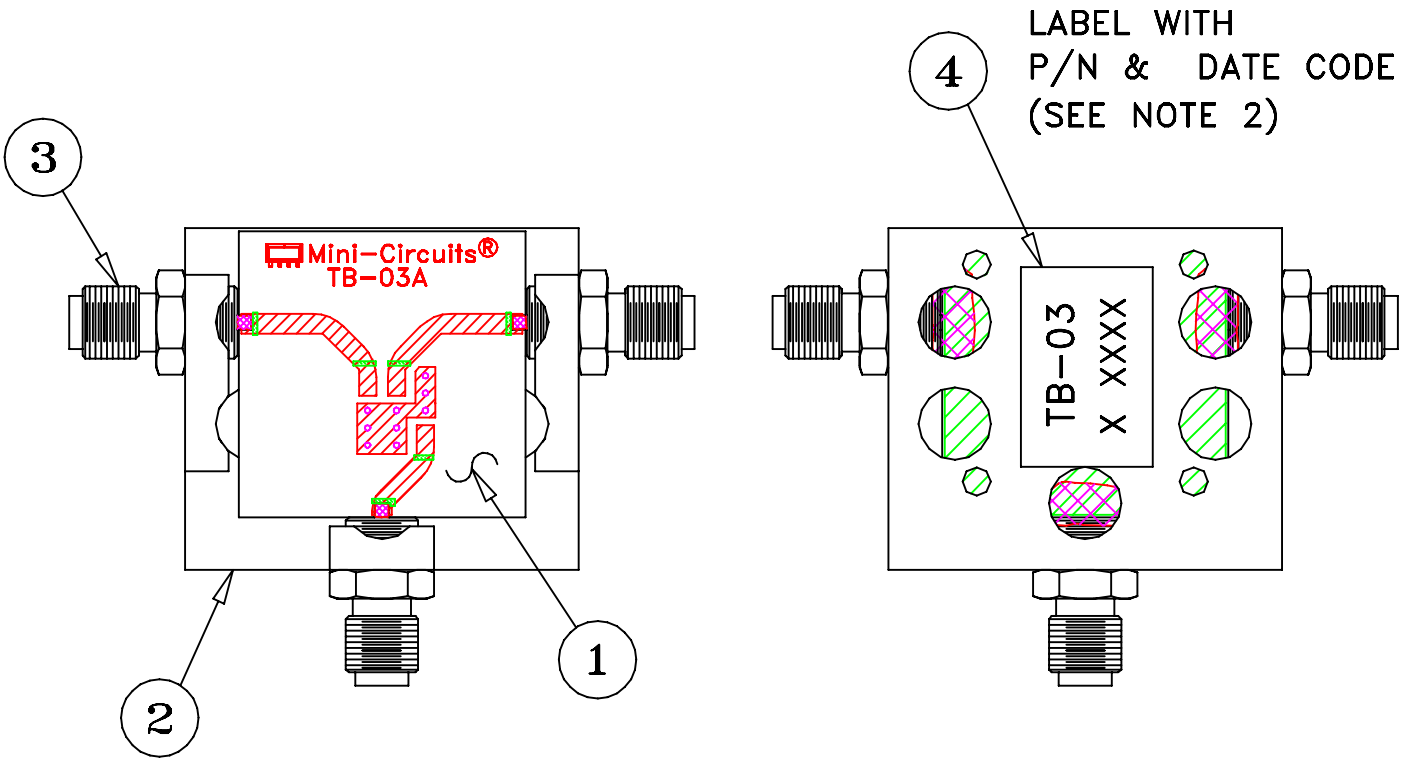
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-052	C

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

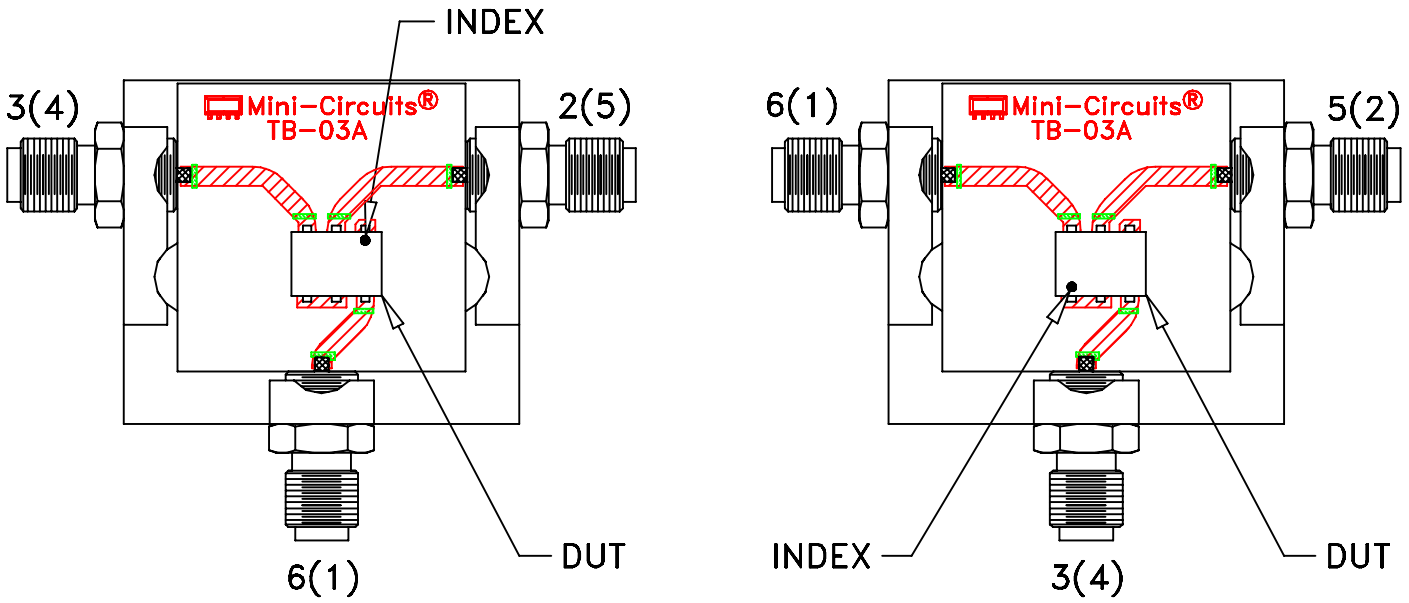
TB,ADE,CD542/636,06MX01,50

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

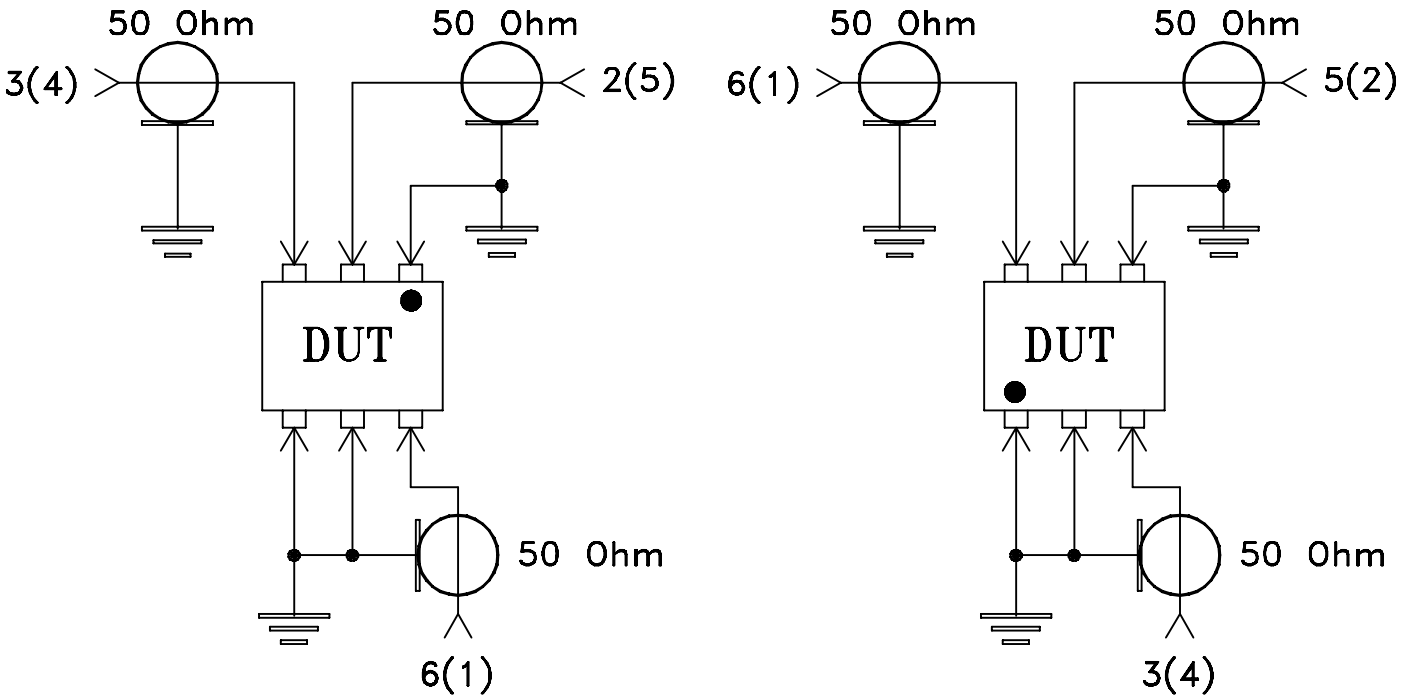
FILE:	SCALE:	SHEET:
WTB-03	1.5:1	1 OF 2

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.

Mini-Circuits®