

Non-Catalog Model

Frequency Mixer

RMS-5LH

Level 10 (LO Power +10 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 : TT240

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	10		1500	MHz
	RF (fL to fU)	10		1500	MHz
	IF	0		900	MHz
Conversion Loss	mid band		5.3	8.0	dB
	Total Range			9.8	dB
LO-RF Isolation	Low Range	35	58		dB
	Mid Range	20	38		dB
	Upper Range	18	25		dB
LO-IF Isolation	Low Range	30	56		dB
	Mid Range	14	38		dB
	Upper Range	6	17		dB
1 dB Comp. Input Power			+5		dBm

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

Mid Range = [10fL to fU/2]

Upper Range = [fU/2 to fU]

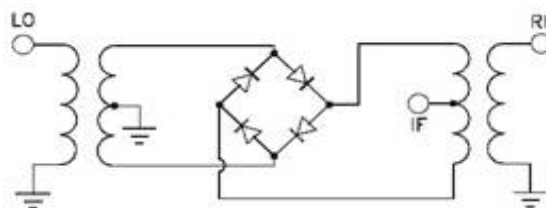
Phase detection, positive polarity.

Units are non-hermetic.

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

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

Electrical Schematics



Frequency Mixer

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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	6.38	5.85	5.73
70.4	100.4	6.02	5.55	5.32
130.7	160.7	5.90	5.45	5.27
190.9	220.9	5.89	5.48	5.32
251.2	281.2	5.96	5.59	5.40
311.5	341.5	6.06	5.63	5.43
371.8	401.8	6.11	5.71	5.53
432.0	462.0	6.18	5.76	5.55
492.3	522.3	6.29	5.83	5.57
552.6	582.6	6.35	5.93	5.63
612.9	642.9	6.37	5.91	5.70
673.1	703.1	6.44	5.91	5.61
733.4	763.4	6.68	6.00	5.65
793.7	823.7	6.93	6.22	5.78
854.0	884.0	7.23	6.51	6.04
914.2	944.2	7.37	6.70	6.24
974.5	1004.5	7.39	6.74	6.30
1034.8	1064.8	7.48	6.85	6.48
1095.1	1125.1	7.63	7.05	6.71
1155.3	1185.3	7.70	7.24	6.97
1215.6	1245.6	7.69	7.32	7.11
1275.9	1305.9	7.77	7.45	7.30
1336.2	1366.2	7.94	7.71	7.59
1396.4	1426.4	8.14	7.86	7.78
1436.6	1466.6	8.21	7.94	7.88
1496.9	1526.9	8.35	8.06	8.01
1537.1	1567.1	8.48	8.20	8.12
1597.3	1627.3	8.74	8.38	8.22
1637.5	1667.5	8.92	8.51	8.35
1697.8	1727.8	9.41	8.84	8.59
1738.0	1768.0	9.54	8.90	8.61
1798.3	1828.3	9.90	9.07	8.67
1838.4	1868.4	10.10	9.16	8.75
1898.7	1928.7	10.36	9.15	8.74
1938.9	1968.9	10.48	9.20	8.75
1999.2	2029.2	10.74	9.24	8.76
2039.4	2069.4	11.07	9.44	8.89
2099.6	2129.6	11.35	9.64	9.00
2139.8	2169.8	11.90	9.83	9.15
2200.1	2230.1	12.36	10.03	9.24

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	19.72	23.99	24.11
70.4	100.4	21.21	24.99	25.04
130.7	160.7	22.35	21.38	21.56
190.9	220.9	19.90	20.50	22.06
251.2	281.2	18.60	20.31	23.15
311.5	341.5	18.27	19.56	22.99
371.8	401.8	19.26	21.53	24.82
432.0	462.0	19.62	21.85	28.97
492.3	522.3	19.13	23.82	25.84
552.6	582.6	21.61	24.53	24.49
612.9	642.9	20.84	29.61	28.99
673.1	703.1	24.25	25.82	25.95
733.4	763.4	20.11	25.38	31.16
793.7	823.7	19.50	22.22	32.11
854.0	884.0	20.32	27.11	28.72
914.2	944.2	23.94	31.65	25.10
974.5	1004.5	22.14	24.57	23.78
1034.8	1064.8	20.97	23.69	27.78
1095.1	1125.1	19.55	22.71	25.32
1155.3	1185.3	18.87	20.63	22.18
1215.6	1245.6	19.02	20.75	31.44
1275.9	1305.9	18.36	22.63	27.79
1336.2	1366.2	18.00	21.31	23.75
1396.4	1426.4	19.81	20.51	25.22
1436.6	1466.6	20.22	20.05	24.58
1496.9	1526.9	20.01	19.73	21.79
1537.1	1567.1	20.55	19.13	21.33
1597.3	1627.3	20.97	18.93	20.69
1637.5	1667.5	19.19	20.28	19.86
1697.8	1727.8	18.69	21.52	20.29
1738.0	1768.0	19.06	20.87	19.47
1798.3	1828.3	18.24	22.08	20.80
1838.4	1868.4	18.69	28.33	21.84
1898.7	1928.7	18.04	23.50	22.93
1938.9	1968.9	18.61	23.29	26.57
1999.2	2029.2	19.21	21.50	23.11
2039.4	2069.4	22.24	24.62	26.00
2099.6	2129.6	25.26	23.80	26.97
2139.8	2169.8	19.43	24.65	24.00
2200.1	2230.1	18.40	23.88	22.77

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	0.70	0.63	0.38
70.4	100.4	1.10	0.72	0.53
130.7	160.7	1.12	0.81	0.58
190.9	220.9	1.18	0.82	0.58
251.2	281.2	1.13	0.82	0.60
311.5	341.5	1.18	0.88	0.65
371.8	401.8	1.22	0.91	0.71
432.0	462.0	1.35	1.06	0.86
492.3	522.3	1.43	1.13	0.94
552.6	582.6	1.62	1.28	1.09
612.9	642.9	1.79	1.43	1.18
673.1	703.1	1.87	1.56	1.28
733.4	763.4	1.83	1.62	1.36
793.7	823.7	1.78	1.61	1.41
854.0	884.0	1.67	1.47	1.34
914.2	944.2	1.64	1.43	1.28
974.5	1004.5	1.70	1.47	1.24
1034.8	1064.8	1.51	1.34	1.13
1095.1	1125.1	1.29	1.11	0.94
1155.3	1185.3	1.12	0.92	0.77
1215.6	1245.6	0.98	0.79	0.66
1275.9	1305.9	0.90	0.69	0.57
1336.2	1366.2	0.81	0.55	0.46
1396.4	1426.4	0.80	0.53	0.45
1436.6	1466.6	0.85	0.57	0.48
1496.9	1526.9	0.93	0.64	0.54
1537.1	1567.1	1.06	0.72	0.61
1597.3	1627.3	1.14	0.85	0.76
1637.5	1667.5	1.18	0.89	0.78
1697.8	1727.8	1.20	0.89	0.81
1738.0	1768.0	1.22	0.90	0.82
1798.3	1828.3	1.25	0.86	0.79
1838.4	1868.4	1.24	0.86	0.77
1898.7	1928.7	1.31	0.88	0.74
1938.9	1968.9	1.31	0.90	0.69
1999.2	2029.2	1.16	0.85	0.62
2039.4	2069.4	1.02	0.82	0.59
2099.6	2129.6	0.73	0.69	0.51
2139.8	2169.8	0.51	0.65	0.47
2200.1	2230.1	0.38	0.62	0.45

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=750.1MHz (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)=1500.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+10			+10			+10
730.0	20.1	6.51	10.0	20.1	6.19	900.0	600.1	9.39
711.5	38.6	6.50	29.8	39.9	6.01	879.3	620.8	9.32
693.1	57.0	6.44	49.6	59.7	6.17	858.6	641.5	9.26
674.6	75.5	6.53	69.3	79.4	6.13	837.9	662.2	9.22
656.2	93.9	6.45	89.1	99.2	6.11	817.2	682.9	9.10
637.7	112.4	6.45	108.9	119.0	6.12	796.5	703.6	9.09
619.2	130.9	6.40	128.7	138.8	6.09	775.8	724.3	9.00
600.8	149.3	6.43	148.4	158.5	6.10	755.1	745.0	9.00
582.3	167.8	6.42	168.2	178.3	6.05	734.4	765.7	8.75
563.8	186.3	6.43	188.0	198.1	6.08	713.7	786.4	8.74
545.4	204.7	6.40	207.8	217.9	6.04	693.0	807.1	8.70
526.9	223.2	6.39	227.6	237.7	6.03	672.3	827.8	8.57
508.5	241.6	6.38	247.3	257.4	6.08	651.6	848.5	8.55
490.0	260.1	6.39	267.1	277.2	6.10	630.9	869.2	8.51
471.5	278.6	6.39	286.9	297.0	6.09	610.2	889.9	8.40
453.1	297.0	6.37	306.7	316.8	6.08	589.5	910.6	8.38
434.6	315.5	6.35	326.4	336.5	6.15	568.8	931.3	8.30
416.2	333.9	6.32	346.2	356.3	6.13	548.1	952.0	8.26
397.7	352.4	6.32	366.0	376.1	6.19	527.4	972.7	8.23
379.2	370.9	6.22	385.8	395.9	6.19	506.7	993.4	8.15
360.8	389.3	6.25	405.6	415.7	6.17	486.0	1014.1	8.11
342.3	407.8	6.22	425.3	435.4	6.23	465.3	1034.8	8.05
323.8	426.3	6.24	445.1	455.2	6.23	444.7	1055.4	8.00
305.4	444.7	6.25	464.9	475.0	6.30	424.0	1076.1	7.95
286.9	463.2	6.29	484.7	494.8	6.27	403.3	1096.8	7.90
268.5	481.6	6.24	504.4	514.5	6.29	382.6	1117.5	7.84
250.0	500.1	6.25	524.2	534.3	6.32	361.9	1138.2	7.80
231.5	518.6	6.20	544.0	554.1	6.33	341.2	1158.9	7.78
213.1	537.0	6.22	583.6	593.7	6.36	320.5	1179.6	7.79
194.6	555.5	6.21	603.3	613.4	6.41	299.8	1200.3	7.77
176.2	573.9	6.20	642.9	653.0	6.45	279.1	1221.0	7.75
157.7	592.4	6.17	662.7	672.8	6.48	258.4	1241.7	7.82
139.2	610.9	6.14	702.2	712.3	6.53	217.0	1283.1	7.92
120.8	629.3	6.13	722.0	732.1	6.61	196.3	1303.8	7.84
102.3	647.8	6.09	761.6	771.7	6.76	154.9	1345.2	7.90
83.8	666.3	6.11	781.3	791.4	6.86	134.2	1365.9	7.98
65.4	684.7	6.02	820.9	831.0	6.96	92.8	1407.3	7.97
46.9	703.2	6.05	840.7	850.8	7.05	72.1	1428.0	8.03
28.5	721.6	5.99	880.2	890.3	7.18	30.7	1469.4	8.12
10.0	740.1	6.19	900.0	910.1	7.18	10.0	1490.1	8.07

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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
10.1	75.50	72.40	70.01	53.13	56.51	57.54
70.4	72.34	64.44	59.93	36.89	39.91	43.34
130.7	72.44	61.87	55.43	31.88	35.51	39.61
190.9	64.02	60.33	53.12	29.06	32.66	36.22
251.2	59.25	57.72	51.58	27.15	30.81	34.23
311.5	55.85	54.55	49.14	25.93	29.49	32.80
371.8	52.03	51.70	47.70	24.64	28.01	31.08
432.0	48.79	49.25	46.50	23.58	27.05	30.00
492.3	46.95	46.55	43.99	23.23	26.56	29.13
552.6	44.48	44.37	42.59	22.76	26.31	28.47
612.9	42.61	43.00	41.69	22.25	25.66	27.31
673.1	40.52	41.55	40.43	21.74	24.84	25.70
733.4	38.71	40.30	40.09	21.30	23.80	23.63
793.7	37.46	38.74	38.85	21.27	22.87	22.27
854.0	36.28	37.76	37.92	21.15	21.69	20.67
914.2	35.13	37.19	37.84	20.32	19.92	18.67
974.5	33.75	35.97	37.20	19.16	18.12	16.75
1034.8	32.60	34.76	36.16	17.77	16.33	15.01
1095.1	31.51	33.56	35.08	16.67	15.14	13.79
1155.3	30.40	32.35	33.84	15.83	14.13	12.75
1215.6	29.13	30.85	32.31	15.06	13.18	11.81
1275.9	28.45	29.91	31.10	14.26	12.32	10.87
1336.2	28.06	29.40	30.46	13.18	11.34	9.98
1396.4	27.46	28.77	29.66	12.27	10.57	9.27
1436.6	27.03	28.28	29.25	11.62	9.93	8.80
1496.9	26.05	27.29	28.20	10.91	9.32	8.11
1537.1	25.55	26.73	27.79	10.39	8.91	7.88
1597.3	24.39	25.51	26.48	9.83	8.43	7.33
1637.5	23.71	24.80	25.72	9.27	7.95	6.91
1697.8	22.78	23.78	24.67	8.77	7.60	6.60
1738.0	22.40	23.32	24.20	8.43	7.21	6.45
1798.3	21.75	22.51	23.25	8.04	6.93	6.22
1838.4	21.46	22.37	23.06	7.76	6.80	6.11
1898.7	21.02	21.83	22.43	7.45	6.60	6.00
1938.9	20.77	21.63	22.09	7.29	6.52	5.84
1999.2	20.26	21.03	21.57	7.18	6.41	5.82
2039.4	20.10	20.87	21.33	7.01	6.38	5.72
2099.6	19.49	20.21	20.76	6.93	6.34	5.83
2139.8	19.52	20.11	20.59	6.86	6.31	5.88
2200.1	19.00	19.70	20.15	6.82	6.53	6.14

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	49.69	53.10	49.69
70.4	100.4	43.88	43.33	41.99
130.7	160.7	38.68	37.93	37.41
190.9	220.9	35.63	34.89	34.58
251.2	281.2	33.61	32.93	32.47
311.5	341.5	32.13	31.76	31.34
371.8	401.8	30.70	30.06	29.91
432.0	462.0	29.43	29.03	28.70
492.3	522.3	28.18	27.89	27.51
552.6	582.6	27.15	26.84	26.58
612.9	642.9	26.49	26.04	25.68
673.1	703.1	25.54	25.11	24.59
733.4	763.4	24.79	24.73	24.61
793.7	823.7	24.62	24.59	24.75
854.0	884.0	24.50	24.18	23.96
914.2	944.2	24.71	24.34	23.84
974.5	1004.5	24.66	24.16	23.63
1034.8	1064.8	23.98	23.71	23.33
1095.1	1125.1	23.38	23.44	23.26
1155.3	1185.3	22.43	23.04	23.40
1215.6	1245.6	21.43	22.26	22.95
1275.9	1305.9	20.82	21.76	22.53
1336.2	1366.2	20.83	21.72	22.42
1396.4	1426.4	20.57	21.35	21.86
1436.6	1466.6	20.57	21.20	21.51
1496.9	1526.9	19.97	20.44	20.68
1537.1	1567.1	19.51	19.98	20.25
1597.3	1627.3	18.61	19.09	19.40
1637.5	1667.5	18.13	18.65	19.12
1697.8	1727.8	17.69	18.25	18.81
1738.0	1768.0	17.33	17.80	18.25
1798.3	1828.3	17.34	17.75	18.01
1838.4	1868.4	17.26	17.65	17.89
1898.7	1928.7	17.22	17.52	17.82
1938.9	1968.9	17.47	17.79	18.10
1999.2	2029.2	17.62	17.85	18.19
2039.4	2069.4	18.21	18.28	18.56
2099.6	2129.6	18.85	18.77	18.99
2139.8	2169.8	19.31	19.05	19.09
2200.1	2230.1	20.42	20.16	19.98

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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=1500.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+7	+10	+13		+7	+10	+13		+7	+10	+13
10.1	40.1	1.75	1.69	1.66	10.1	1.11	1.42	1.99	10.0	1.12	1.10	1.35
70.4	100.4	1.26	1.14	1.11	70.4	1.09	1.46	2.02	29.8	1.19	1.06	1.30
130.7	160.7	1.20	1.07	1.03	130.7	1.17	1.53	2.11	49.6	1.17	1.08	1.35
190.9	220.9	1.20	1.07	1.03	190.9	1.22	1.51	2.04	69.3	1.19	1.06	1.34
251.2	281.2	1.19	1.10	1.07	251.2	1.26	1.57	2.12	89.1	1.19	1.06	1.33
311.5	341.5	1.22	1.14	1.11	311.5	1.27	1.62	2.18	108.9	1.20	1.06	1.31
371.8	401.8	1.25	1.18	1.15	371.8	1.28	1.64	2.18	128.7	1.22	1.06	1.30
432.0	462.0	1.29	1.23	1.20	432.0	1.30	1.72	2.28	148.4	1.21	1.07	1.32
492.3	522.3	1.35	1.29	1.26	492.3	1.32	1.77	2.33	168.2	1.19	1.08	1.35
552.6	582.6	1.44	1.38	1.35	552.6	1.36	1.83	2.40	188.0	1.20	1.09	1.34
612.9	642.9	1.56	1.49	1.45	612.9	1.40	1.90	2.47	207.8	1.21	1.08	1.32
673.1	703.1	1.68	1.60	1.55	673.1	1.44	1.94	2.50	227.6	1.21	1.09	1.34
733.4	763.4	1.87	1.75	1.68	733.4	1.49	2.02	2.57	247.3	1.20	1.12	1.36
793.7	823.7	2.09	1.95	1.85	793.7	1.54	2.06	2.61	267.1	1.20	1.12	1.38
854.0	884.0	2.34	2.20	2.08	854.0	1.58	2.10	2.64	286.9	1.20	1.13	1.38
914.2	944.2	2.57	2.43	2.33	914.2	1.62	2.14	2.68	306.7	1.19	1.14	1.40
974.5	1004.5	2.73	2.60	2.50	974.5	1.66	2.15	2.67	326.4	1.20	1.16	1.41
1034.8	1064.8	2.81	2.68	2.61	1034.8	1.69	2.16	2.65	346.2	1.21	1.16	1.41
1095.1	1125.1	2.82	2.72	2.67	1095.1	1.73	2.17	2.62	366.0	1.20	1.17	1.43
1155.3	1185.3	2.77	2.69	2.66	1155.3	1.79	2.22	2.62	385.8	1.20	1.20	1.47
1215.6	1245.6	2.73	2.65	2.62	1215.6	1.80	2.20	2.59	405.6	1.20	1.21	1.48
1275.9	1305.9	2.71	2.62	2.57	1275.9	1.82	2.20	2.55	425.3	1.19	1.21	1.47
1336.2	1366.2	2.72	2.62	2.54	1336.2	1.85	2.20	2.52	445.1	1.18	1.21	1.48
1396.4	1426.4	2.73	2.59	2.50	1396.4	1.85	2.16	2.44	464.9	1.19	1.22	1.50
1436.6	1466.6	2.72	2.57	2.46	1436.6	1.86	2.14	2.41	484.7	1.20	1.24	1.52
1496.9	1526.9	2.73	2.58	2.46	1496.9	1.83	2.09	2.33	504.4	1.19	1.24	1.53
1537.1	1567.1	2.78	2.62	2.48	1537.1	1.86	2.08	2.31	524.2	1.17	1.25	1.55
1597.3	1627.3	2.89	2.71	2.55	1597.3	1.84	2.03	2.22	544.0	1.18	1.25	1.54
1637.5	1667.5	2.96	2.78	2.60	1637.5	1.86	2.03	2.20	583.6	1.18	1.27	1.57
1697.8	1727.8	3.14	2.94	2.75	1697.8	1.86	1.98	2.14	603.3	1.19	1.31	1.62
1738.0	1768.0	3.21	3.00	2.81	1738.0	1.87	1.97	2.11	642.9	1.15	1.29	1.59
1798.3	1828.3	3.29	3.07	2.85	1798.3	1.88	1.95	2.05	662.7	1.17	1.31	1.60
1838.4	1868.4	3.34	3.10	2.89	1838.4	1.92	1.96	2.07	702.2	1.22	1.37	1.68
1898.7	1928.7	3.42	3.17	2.97	1898.7	1.97	1.97	2.07	722.0	1.20	1.39	1.72
1938.9	1968.9	3.50	3.22	3.05	1938.9	2.04	2.04	2.13	761.6	1.20	1.38	1.67
1999.2	2029.2	3.62	3.34	3.16	1999.2	2.14	2.09	2.16	781.3	1.22	1.39	1.68
2039.4	2069.4	3.72	3.42	3.24	2039.4	2.23	2.15	2.20	820.9	1.26	1.48	1.81
2099.6	2129.6	3.80	3.50	3.34	2099.6	2.36	2.24	2.20	840.7	1.24	1.48	1.79
2139.8	2169.8	3.85	3.54	3.40	2139.8	2.45	2.30	2.27	880.2	1.25	1.47	1.75
2200.1	2230.1	3.85	3.53	3.40	2200.1	2.62	2.40	2.34	900.0	1.30	1.53	1.83

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	6	24	18	42	25	50	40	54	56	56
1	-	18	+0	41	19	48	43	54	51	59	56	60
2	81	42	25	49	25	53	40	63	45	61	54	64
3	>100	50	43	47	42	56	46	58	56	69	54	79
4	>100	64	56	52	51	49	43	63	55	64	67	66
5	>100	73	58	64	54	55	55	55	58	69	66	70
6	>100	78	72	75	70	69	52	61	54	65	64	70
7	>100	87	78	91	70	78	65	70	58	63	69	78
8	>100	>94	83	93	84	87	80	72	65	74	64	72
9	>100	89	>94	90	>94	85	86	84	84	69	68	81
10	>100	>94	>94	>94	>94	>94	90	85	>94	77	74	72
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 750.1 MHz; 0.00 dBm.
LO IN: 780.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -6.17 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+3	14	7	28	12	34	29	40	38	38
1	-	18	+0	40	18	43	37	49	42	54	57	56
2	>100	53	34	53	32	57	46	64	52	63	60	66
3	>100	77	66	67	61	68	61	72	71	72	65	75
4	>100	>84	>84	84	67	76	66	81	83	>84	82	>84
5	>100	>84	>84	>84	>84	>84	77	>84	>84	>84	>84	>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	>84	>84	>84	>84
9	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
10	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 750.1 MHz; -10.00 dBm.
LO IN: 780.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -16.12 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.

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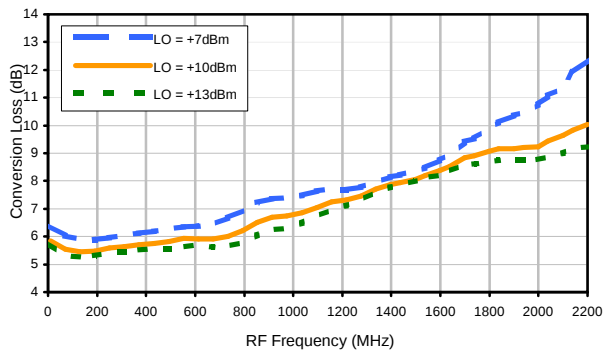
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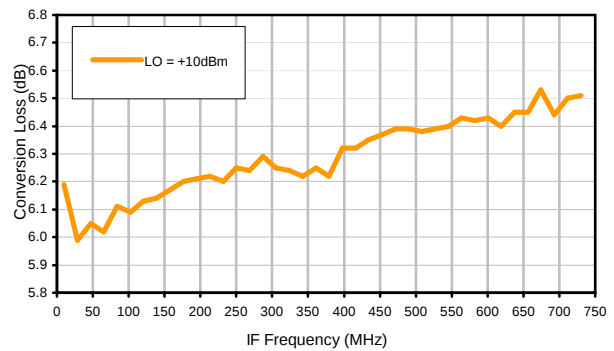


Typical Performance Curves

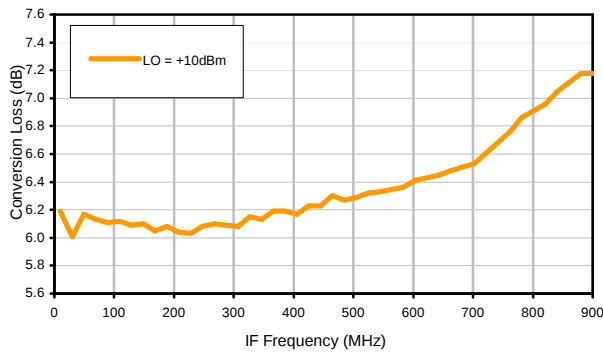
Conversion Loss @ IF=30MHz



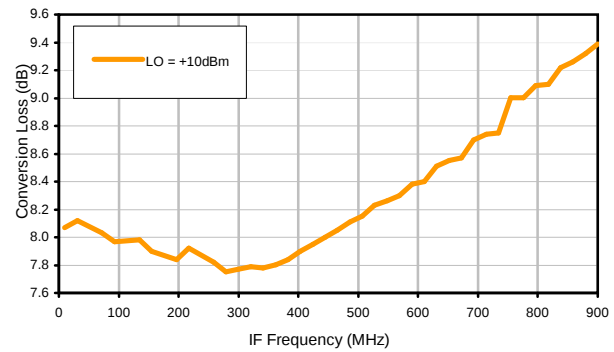
Conversion Loss vs. IF @ RF=750.1MHz



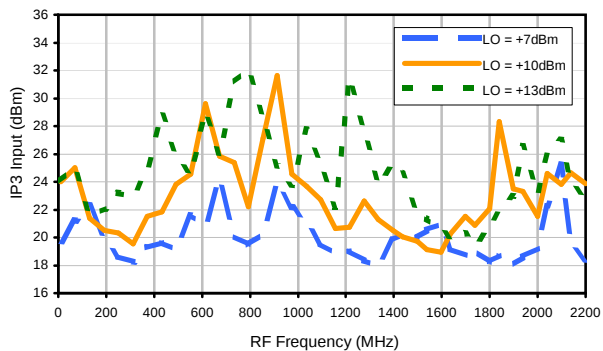
Conversion Loss vs. IF @ RF=10.1MHz



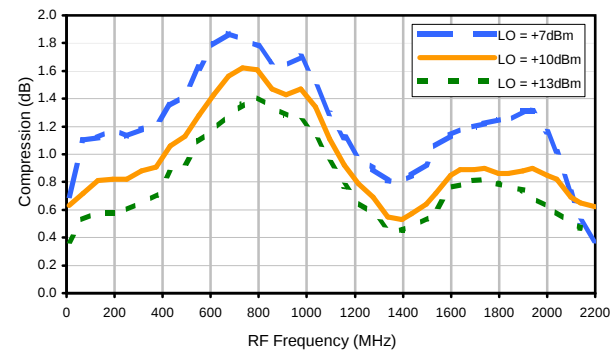
Conversion Loss vs. IF @ RF=1500.1MHz



IP3 Input

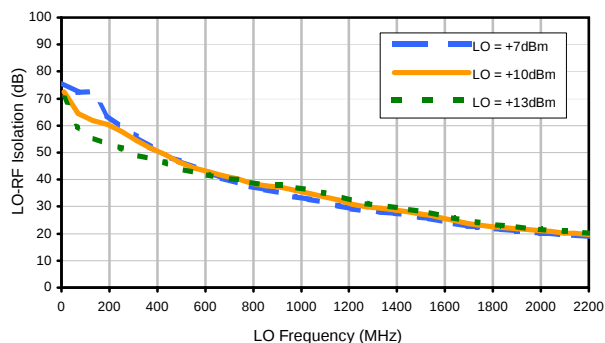


Compression @ RF IN=+5dBm

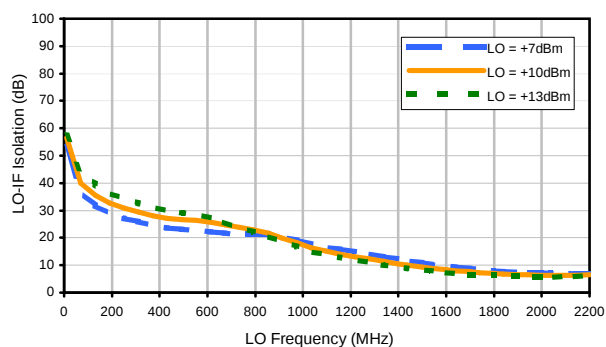


Typical Performance Curves

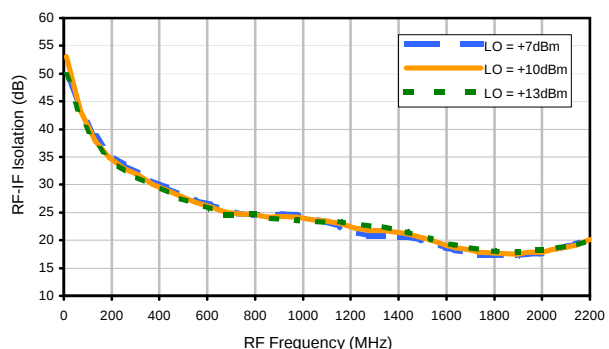
LO-RF Isolation



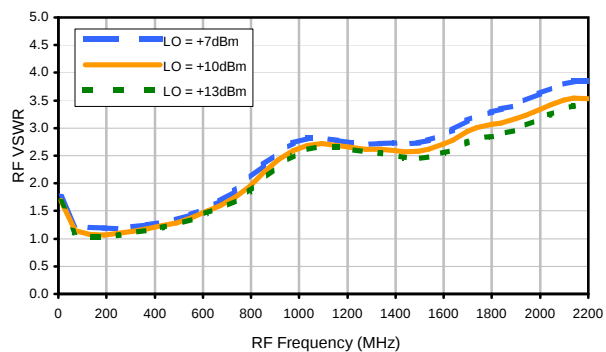
LO-IF Isolation



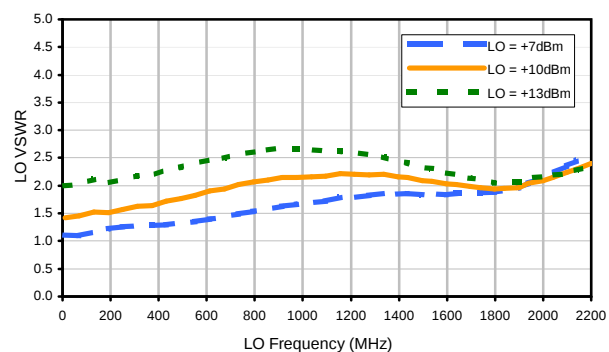
RF-IF Isolation



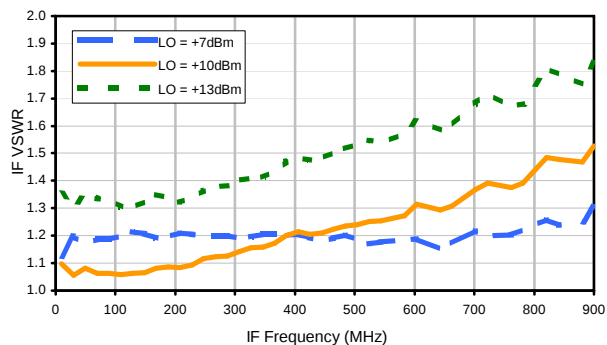
RF VSWR



LO VSWR



IF VSWR



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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	6	24	18	42	25	50	40	54	56	56
1	-	18	+0	41	19	48	43	54	51	59	56	60
2	81	42	25	49	25	53	40	63	45	61	54	64
3	>100	50	43	47	42	56	46	58	56	69	54	79
4	>100	64	56	52	51	49	43	63	55	64	67	66
5	>100	73	58	64	54	55	55	55	58	69	66	70
6	>100	78	72	75	70	69	52	61	54	65	64	70
7	>100	87	78	91	70	78	65	70	58	63	69	78
8	>100	>94	83	93	84	87	80	72	65	74	64	72
9	>100	89	>94	90	>94	85	86	84	84	69	68	81
10	>100	>94	>94	>94	>94	>94	90	85	>94	77	74	72
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 750.1 MHz; 0.00 dBm.

LO IN: 780.01 MHz; +10.00 dBm

IF OUT: 29.91 MHz; -6.17 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+3	14	7	28	12	34	29	40	38	38
1	-	18	+0	40	18	43	37	49	42	54	57	56
2	>100	53	34	53	32	57	46	64	52	63	60	66
3	>100	77	66	67	61	68	61	72	71	72	65	75
4	>100	>84	>84	84	67	76	66	81	83	>84	82	>84
5	>100	>84	>84	>84	>84	>84	77	>84	>84	>84	>84	>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	>84	>84	>84	>84
9	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
10	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 750.1 MHz; -10.00 dBm.

LO IN: 780.01 MHz; +10.00 dBm

IF OUT: 29.91 MHz; -16.12 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.

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IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED • RoHS compliant

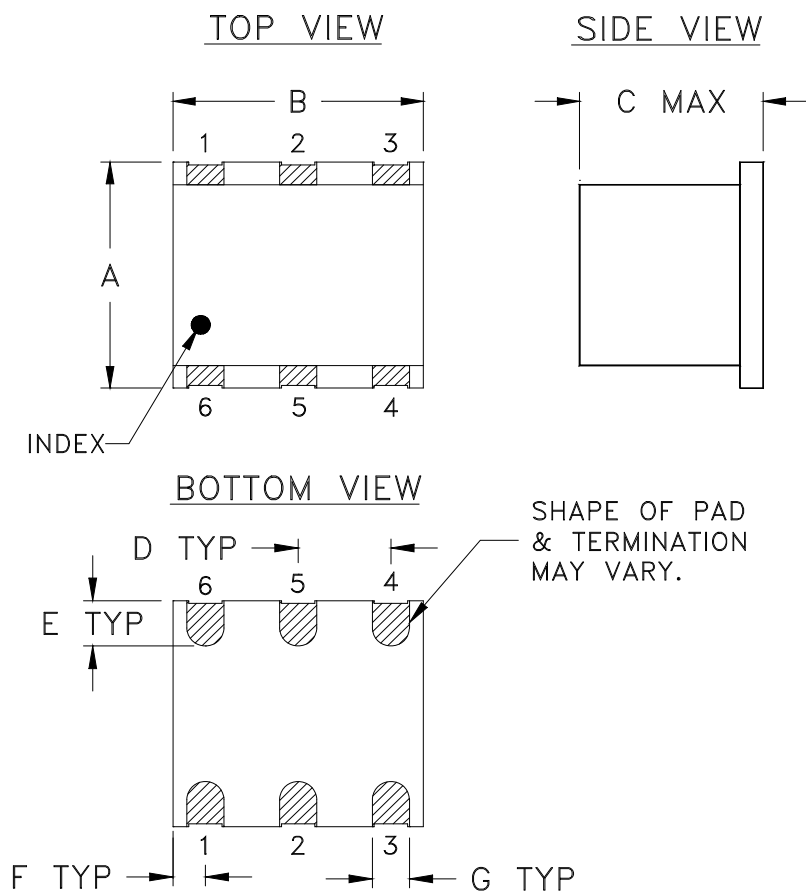
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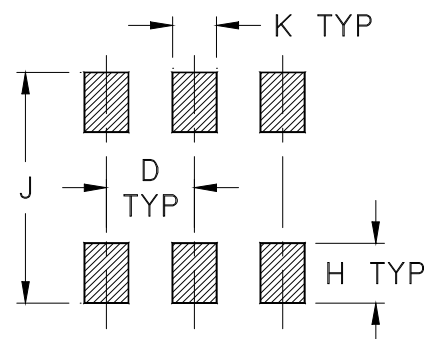
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Outline Dimensions



PCB Land Pattern



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

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. $\pm .01$; 3 Pl. $\pm .005$

Notes:

- Case material: Ceramic.
- Termination finish:
 - For RoHS Case Styles: 2-10 μ 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.



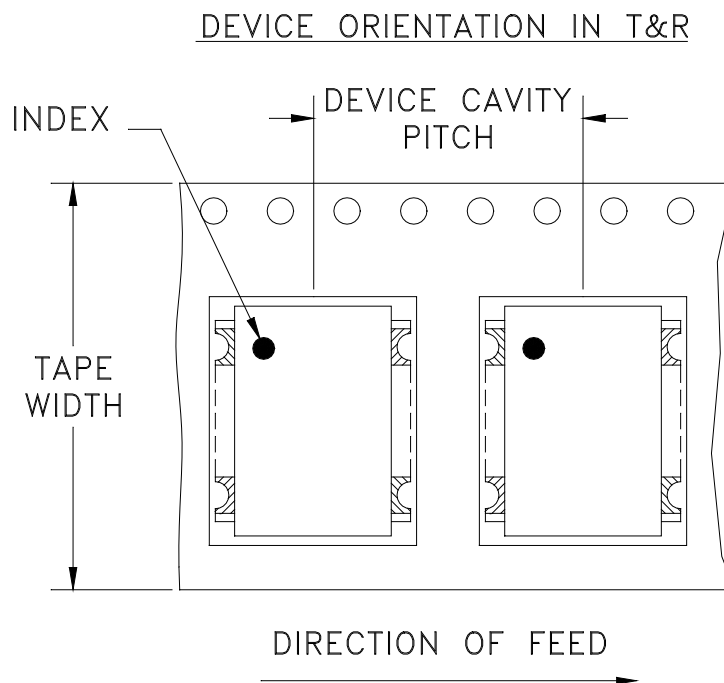
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RF/IF MICROWAVE COMPONENTS

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.

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



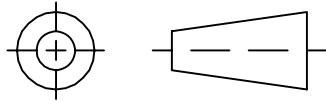
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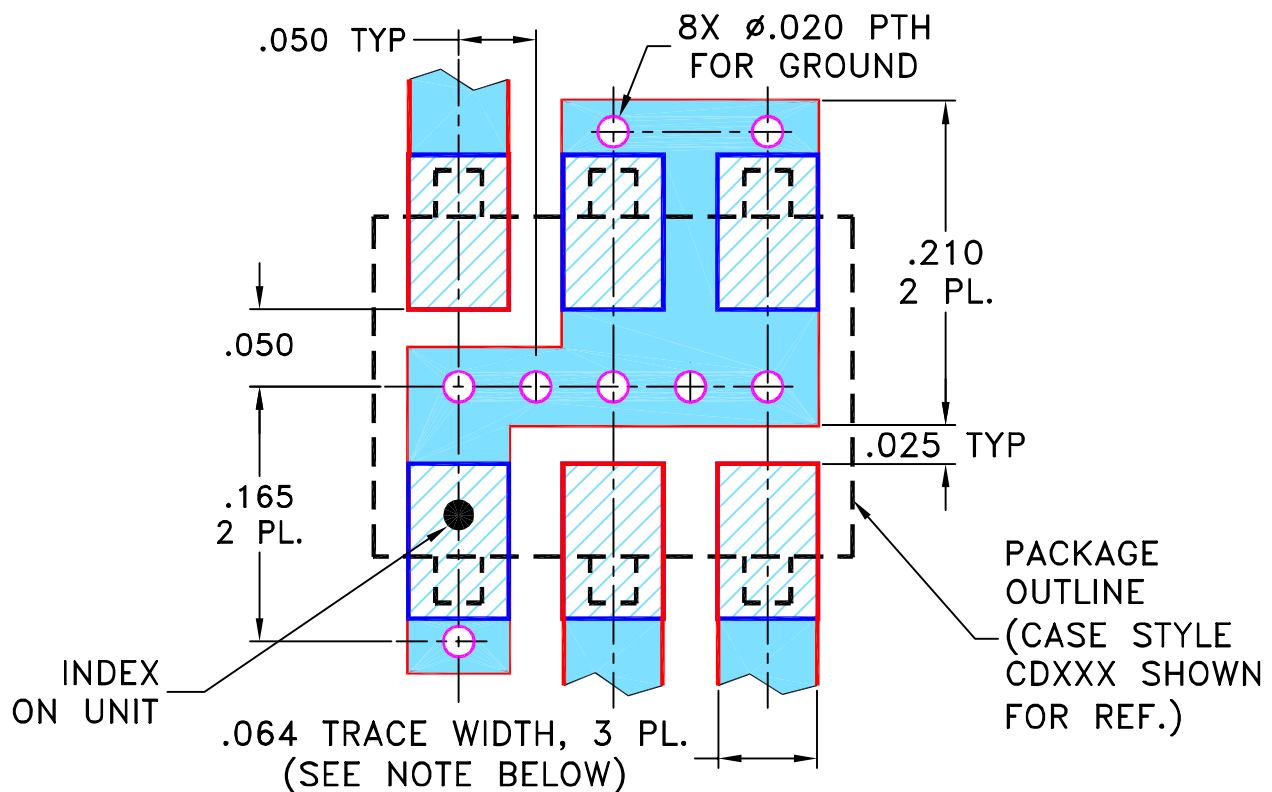
THIRD ANGLE PROJECTION



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

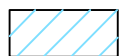
SUGGESTED MOUNTING CONFIGURATION
FOR BH292, CD541/542/636/637, TT100/240 CASE
STYLES, "gk", "ht", "hu", "nd", "w" PIN CONNECTIONS



- NOTES:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $.030" \pm .002"$; 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

MMG

07/17/02

CHECKED

WL

08/02/02

APPROVED

DJ

08/05/02



Mini-Circuits®

13 Neptune Avenue
Brooklyn NY 11235

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

SIZE

A

CODE IDENT

15542

DRAWING NO:

98-PL-052

REV:

C

FILE:

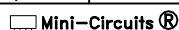
98PL052

SCALE:

8:1

SHEET:

1 OF 1

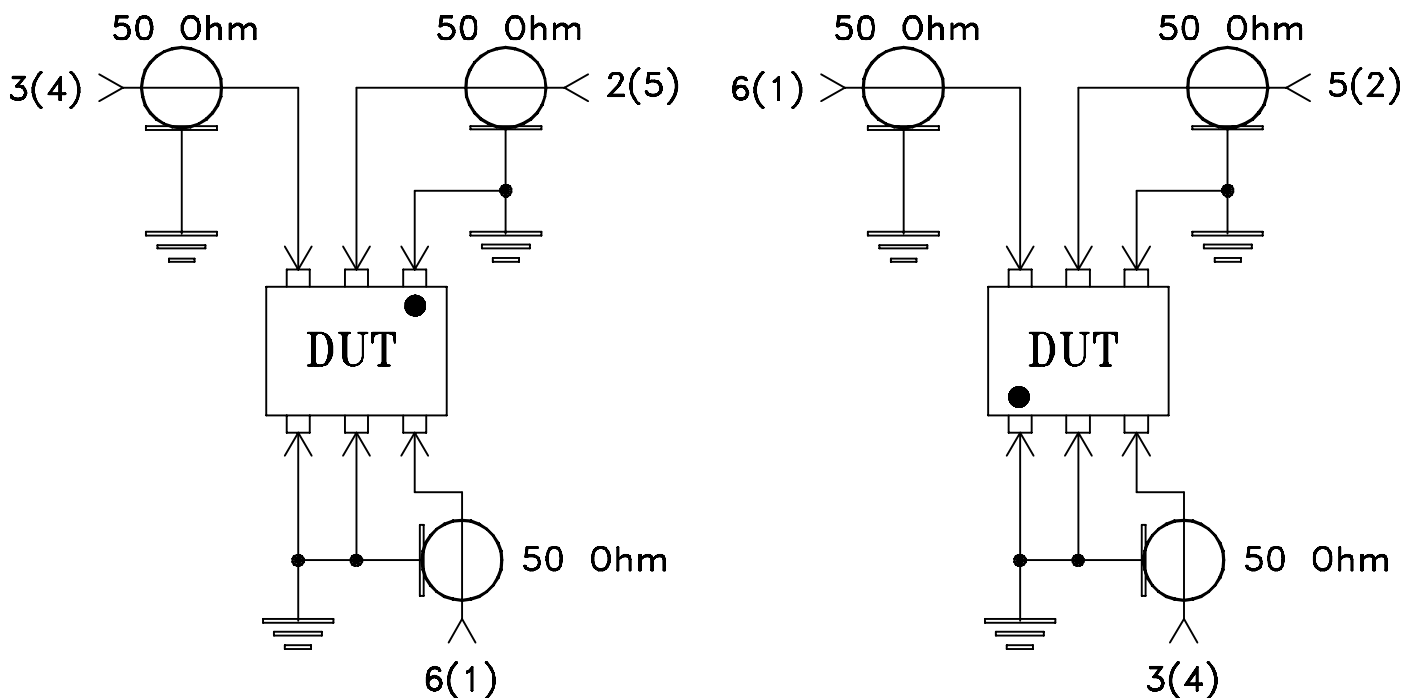
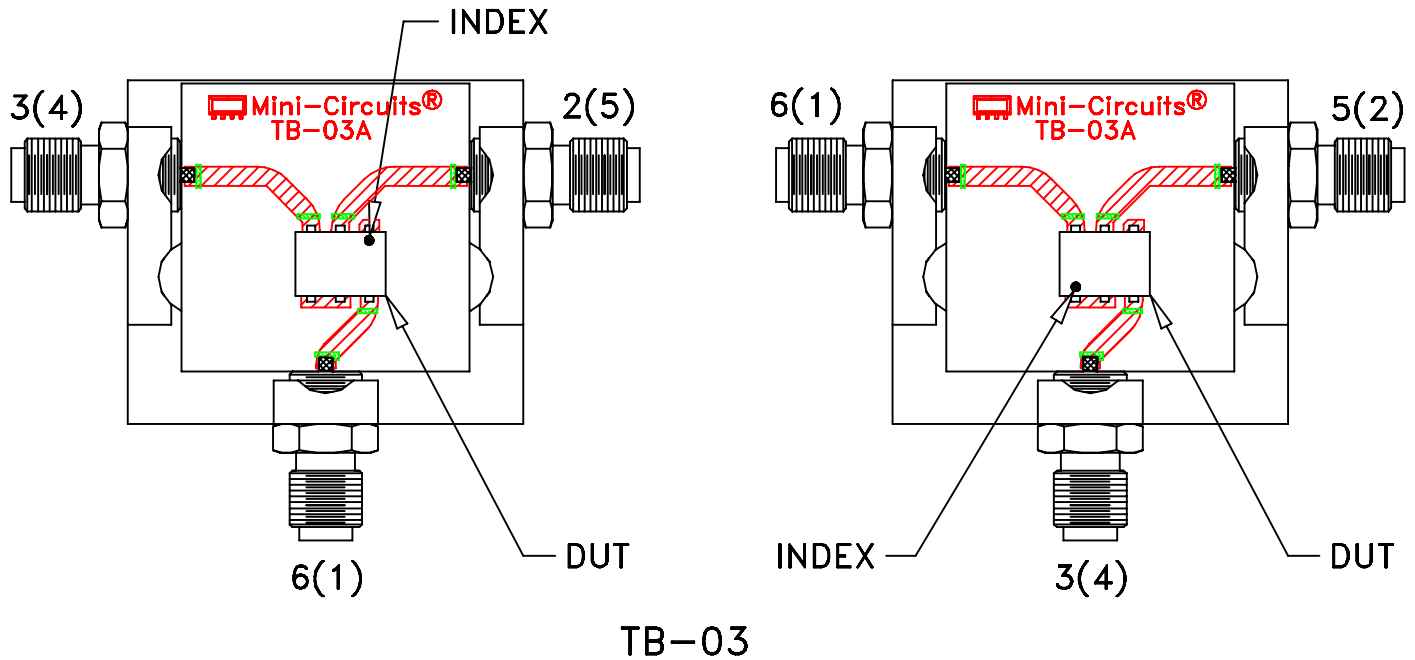


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ASHEETA1.DWG REV:A DATE:01/12/95

Evaluation Board and Circuit

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



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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