

Non-Catalog Model

Frequency Mixer

Level 3 (LO Power +3 dBm)

JMS-2L

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 : BH292

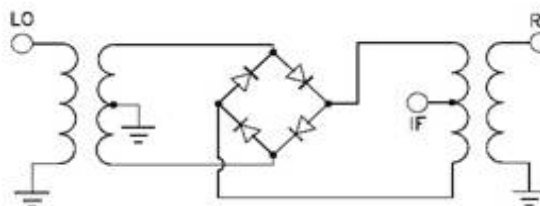
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	800		1000	MHz
	RF (fL to fU)	800		1000	MHz
	IF	0		200	MHz
Conversion Loss			7.0	8.4	dB
LO-RF Isolation		17	24		dB
LO-IF Isolation		14	20		dB
1 dB Comp. Input Power			-3		dBm

Notes: Usable at 0dBm LO.
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	6
RF	3
IF	2
GROUND	1, 4, 5

Electrical Schematics



Frequency Mixer

JMS-2L

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		0	+3	+6
800.1	830.1	7.20	6.27	5.72
818.0	848.0	7.36	6.45	5.83
836.0	866.0	7.47	6.54	5.93
853.9	883.9	7.60	6.70	6.09
871.9	901.9	7.75	6.83	6.20
889.8	919.8	7.79	6.90	6.27
907.8	937.8	7.95	7.10	6.48
925.7	955.7	8.09	7.24	6.62
943.7	973.7	8.20	7.41	6.79
961.6	991.6	8.34	7.55	6.97
979.6	1009.6	8.35	7.62	7.07
997.5	1027.5	8.46	7.75	7.26
1015.5	1045.5	8.53	7.82	7.35
1033.4	1063.4	8.56	7.89	7.48
1051.4	1081.4	8.68	7.93	7.55
1069.3	1099.3	8.67	7.93	7.57
1087.3	1117.3	8.77	7.95	7.61
1105.2	1135.2	8.94	8.03	7.69
1123.2	1153.2	8.95	8.05	7.70
1141.1	1171.1	9.19	8.15	7.74
1159.1	1189.1	9.25	8.20	7.80
1177.0	1207.0	9.40	8.29	7.88
1195.0	1225.0	9.57	8.38	7.92
1212.9	1242.9	9.55	8.38	7.95
1230.9	1260.9	9.86	8.51	8.03
1248.8	1278.8	9.93	8.55	8.06
1266.8	1296.8	10.02	8.62	8.06
1284.7	1314.7	10.23	8.70	8.13
1302.7	1332.7	10.20	8.69	8.16
1320.6	1350.6	10.52	8.84	8.17
1338.6	1368.6	10.67	8.88	8.23
1356.5	1386.5	10.74	8.92	8.25
1374.5	1404.5	11.05	9.03	8.29
1392.4	1422.4	11.04	9.06	8.29
1410.4	1440.4	11.36	9.20	8.40
1428.3	1458.3	11.62	9.32	8.44
1446.3	1476.3	11.63	9.33	8.44
1464.2	1494.2	12.13	9.56	8.53
1482.2	1512.2	12.15	9.59	8.58
1500.1	1530.1	12.55	9.76	8.65

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		0	+3	+6
800.1	830.1	13.41	13.73	12.98
818.0	848.0	11.05	13.51	14.89
836.0	866.0	11.02	13.33	13.85
853.9	883.9	10.51	10.77	12.96
871.9	901.9	9.31	12.15	13.91
889.8	919.8	8.22	11.18	13.29
907.8	937.8	8.41	11.96	14.50
925.7	955.7	8.80	9.60	12.38
943.7	973.7	9.80	9.86	11.52
961.6	991.6	7.67	9.37	9.66
979.6	1009.6	8.88	9.23	10.20
997.5	1027.5	7.66	8.64	9.96
1015.5	1045.5	7.78	9.56	11.63
1033.4	1063.4	8.77	8.25	9.62
1051.4	1081.4	8.18	8.86	8.99
1069.3	1099.3	8.33	9.30	10.44
1087.3	1117.3	8.97	9.03	7.79
1105.2	1135.2	9.28	8.68	8.02
1123.2	1153.2	9.83	9.65	9.49
1141.1	1171.1	9.89	10.44	9.95
1159.1	1189.1	8.79	10.98	9.48
1177.0	1207.0	9.13	9.57	8.66
1195.0	1225.0	9.03	9.99	8.93
1212.9	1242.9	8.69	10.13	10.47
1230.9	1260.9	9.08	9.61	8.58
1248.8	1278.8	9.45	8.85	10.24
1266.8	1296.8	9.93	9.83	10.79
1284.7	1314.7	9.02	9.37	11.09
1302.7	1332.7	8.36	9.25	10.78
1320.6	1350.6	9.24	9.01	10.57
1338.6	1368.6	11.95	9.58	8.60
1356.5	1386.5	9.68	8.24	11.35
1374.5	1404.5	12.02	8.03	10.08
1392.4	1422.4	11.56	7.98	11.19
1410.4	1440.4	12.39	9.49	9.97
1428.3	1458.3	12.01	7.59	8.08
1446.3	1476.3	9.68	7.65	8.95
1464.2	1494.2	10.96	7.73	8.68
1482.2	1512.2	7.89	7.92	8.54
1500.1	1530.1	8.62	7.65	9.23

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=-3dBm (dB)		
		@LO (dBm)		
		0	+3	+6
800.1	830.1	1.24	0.62	0.49
818.0	848.0	1.20	0.71	0.56
836.0	866.0	1.12	0.68	0.56
853.9	883.9	1.04	0.63	0.55
871.9	901.9	0.98	0.60	0.52
889.8	919.8	0.90	0.54	0.49
907.8	937.8	0.88	0.53	0.47
925.7	955.7	0.81	0.48	0.43
943.7	973.7	0.77	0.43	0.39
961.6	991.6	0.73	0.39	0.34
979.6	1009.6	0.66	0.34	0.32
997.5	1027.5	0.64	0.30	0.27
1015.5	1045.5	0.65	0.30	0.24
1033.4	1063.4	0.58	0.28	0.16
1051.4	1081.4	0.63	0.27	0.15
1069.3	1099.3	0.59	0.27	0.15
1087.3	1117.3	0.59	0.25	0.15
1105.2	1135.2	0.58	0.28	0.16
1123.2	1153.2	0.55	0.29	0.15
1141.1	1171.1	0.55	0.30	0.17
1159.1	1189.1	0.53	0.26	0.17
1177.0	1207.0	0.52	0.29	0.16
1195.0	1225.0	0.53	0.30	0.16
1212.9	1242.9	0.50	0.30	0.17
1230.9	1260.9	0.52	0.33	0.19
1248.8	1278.8	0.53	0.33	0.19
1266.8	1296.8	0.48	0.34	0.20
1284.7	1314.7	0.52	0.37	0.23
1302.7	1332.7	0.49	0.37	0.24
1320.6	1350.6	0.47	0.40	0.25
1338.6	1368.6	0.49	0.39	0.24
1356.5	1386.5	0.45	0.41	0.25
1374.5	1404.5	0.42	0.42	0.27
1392.4	1422.4	0.39	0.42	0.28
1410.4	1440.4	0.36	0.43	0.29
1428.3	1458.3	0.30	0.45	0.30
1446.3	1476.3	0.31	0.47	0.29
1464.2	1494.2	0.20	0.44	0.35
1482.2	1512.2	0.23	0.45	0.35
1500.1	1530.1	0.16	0.44	0.36

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Frequency Mixer

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=900.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=800.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+3			+3			+3
100.0	800.1	7.04	10.0	810.1	6.69	200.0	800.1	7.66
95.3	804.8	7.11	14.9	815.0	6.50	195.1	805.0	7.71
90.5	809.6	7.12	19.7	819.8	6.41	190.3	809.8	7.73
85.8	814.3	7.12	24.6	824.7	6.33	185.4	814.7	7.70
81.1	819.0	7.11	29.5	829.6	6.30	180.5	819.6	7.72
76.3	823.8	7.11	34.3	834.4	6.25	175.6	824.5	7.72
71.6	828.5	7.09	39.2	839.3	6.24	170.8	829.3	7.74
66.8	833.3	7.10	44.1	844.2	6.33	165.9	834.2	7.76
62.1	838.0	7.12	49.0	849.1	6.36	161.0	839.1	7.80
57.4	842.7	7.12	53.8	853.9	6.32	156.2	843.9	7.86
52.6	847.5	7.14	58.7	858.8	6.32	151.3	848.8	7.87
47.9	852.2	7.12	63.6	863.7	6.32	146.4	853.7	7.88
43.2	856.9	7.11	68.4	868.5	6.27	141.5	858.6	7.87
38.4	861.7	7.09	73.3	873.4	6.30	136.7	863.4	7.83
33.7	866.4	7.11	78.2	878.3	6.29	131.8	868.3	7.82
28.9	871.2	7.14	83.0	883.1	6.25	126.9	873.2	7.84
24.2	875.9	7.13	87.9	888.0	6.26	122.1	878.0	7.80
19.5	880.6	7.14	92.8	892.9	6.25	117.2	882.9	7.83
14.7	885.4	7.14	97.6	897.7	6.27	112.3	887.8	7.82
10.0	890.1	7.19	102.5	902.6	6.26	107.4	892.7	7.83
10.0	910.1	7.20	107.4	907.5	6.24	102.6	897.5	7.83
14.5	914.6	7.14	112.3	912.4	6.22	97.7	902.4	7.83
19.0	919.1	7.08	117.1	917.2	6.23	92.8	907.3	7.80
23.5	923.6	7.05	122.0	922.1	6.20	87.9	912.2	7.79
28.0	928.1	7.06	126.9	927.0	6.24	83.1	917.0	7.75
32.5	932.6	7.06	131.7	931.8	6.24	78.2	921.9	7.81
37.0	937.1	7.05	136.6	936.7	6.28	73.3	926.8	7.82
41.5	941.6	7.07	141.5	941.6	6.32	68.5	931.6	7.80
46.0	946.1	7.07	146.3	946.4	6.32	63.6	936.5	7.81
50.5	950.6	7.07	151.2	951.3	6.34	58.7	941.4	7.80
55.0	955.1	7.05	156.1	956.2	6.35	53.8	946.3	7.81
59.5	959.6	7.05	160.9	961.0	6.30	49.0	951.1	7.83
64.0	964.1	7.04	165.8	965.9	6.31	44.1	956.0	7.78
68.5	968.6	7.04	170.7	970.8	6.33	39.2	960.9	7.71
73.0	973.1	7.07	175.6	975.7	6.33	34.4	965.7	7.73
77.5	977.6	7.08	180.4	980.5	6.35	29.5	970.6	7.71
82.0	982.1	7.09	185.3	985.4	6.36	24.6	975.5	7.81
86.5	986.6	7.09	190.2	990.3	6.39	19.7	980.4	7.93
95.5	995.6	7.09	195.0	995.1	6.37	14.9	985.2	7.98
100.0	1000.1	7.09	199.9	1000.0	6.36	10.0	990.1	7.80

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	0	+3	+6	0	+3	+6
800.1	30.43	32.11	31.58	24.66	23.00	20.84
818.0	29.16	30.66	30.37	24.20	22.22	20.08
836.0	28.07	29.39	29.30	23.68	21.50	19.38
853.9	27.03	28.32	28.47	23.34	21.17	18.99
871.9	26.20	27.37	27.59	22.93	20.61	18.43
889.8	25.36	26.46	26.78	22.36	20.14	17.96
907.8	24.70	25.74	26.07	21.81	19.61	17.43
925.7	24.17	25.15	25.52	21.39	19.19	17.06
943.7	23.58	24.53	24.96	21.01	19.01	16.91
961.6	23.13	24.03	24.44	20.49	18.52	16.50
979.6	22.65	23.53	23.98	20.12	18.32	16.35
997.5	22.28	23.13	23.58	19.66	17.97	16.08
1015.5	21.96	22.76	23.17	19.06	17.43	15.62
1033.4	21.59	22.41	22.85	18.72	17.29	15.56
1051.4	21.37	22.20	22.64	18.36	17.01	15.36
1069.3	21.08	21.90	22.32	17.90	16.70	15.15
1087.3	20.77	21.62	22.05	17.37	16.32	14.86
1105.2	20.59	21.45	21.88	16.94	15.93	14.53
1123.2	20.34	21.23	21.69	16.53	15.65	14.37
1141.1	20.11	21.03	21.52	16.09	15.29	14.04
1159.1	19.95	20.89	21.40	15.69	14.98	13.82
1177.0	19.73	20.72	21.27	15.30	14.70	13.62
1195.0	19.61	20.59	21.14	14.85	14.26	13.22
1212.9	19.40	20.42	21.02	14.50	14.02	13.07
1230.9	19.34	20.40	21.03	14.16	13.72	12.80
1248.8	19.24	20.31	20.95	13.77	13.37	12.51
1266.8	18.98	20.12	20.83	13.41	13.11	12.37
1284.7	19.04	20.20	20.93	13.12	12.81	12.09
1302.7	18.88	20.08	20.84	12.74	12.52	11.87
1320.6	18.74	19.99	20.79	12.38	12.20	11.59
1338.6	18.72	20.00	20.85	12.14	12.00	11.43
1356.5	18.59	19.95	20.88	11.84	11.80	11.31
1374.5	18.56	19.93	20.88	11.50	11.47	11.00
1392.4	18.39	19.81	20.81	11.19	11.25	10.84
1410.4	18.31	19.78	20.86	10.95	11.08	10.71
1428.3	18.32	19.78	20.89	10.69	10.84	10.51
1446.3	18.13	19.65	20.83	10.37	10.62	10.37
1464.2	18.13	19.66	20.87	10.13	10.45	10.24
1482.2	18.06	19.58	20.83	9.83	10.21	10.06
1500.1	17.90	19.42	20.70	9.57	10.02	9.95

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		0	+3	+6
800.1	830.1	18.56	17.36	15.91
818.0	848.0	17.80	16.96	15.79
836.0	866.0	17.05	16.44	15.49
853.9	883.9	16.28	15.83	15.13
871.9	901.9	15.62	15.29	14.77
889.8	919.8	14.99	14.76	14.36
907.8	937.8	14.47	14.32	14.08
925.7	955.7	14.01	13.90	13.74
943.7	973.7	13.55	13.47	13.37
961.6	991.6	13.20	13.15	13.10
979.6	1009.6	12.82	12.78	12.73
997.5	1027.5	12.51	12.48	12.48
1015.5	1045.5	12.21	12.22	12.23
1033.4	1063.4	11.98	11.98	12.00
1051.4	1081.4	11.79	11.84	11.89
1069.3	1099.3	11.60	11.67	11.74
1087.3	1117.3	11.41	11.52	11.64
1105.2	1135.2	11.24	11.41	11.55
1123.2	1153.2	11.11	11.31	11.50
1141.1	1171.1	10.95	11.22	11.43
1159.1	1189.1	10.86	11.17	11.42
1177.0	1207.0	10.75	11.11	11.39
1195.0	1225.0	10.68	11.11	11.41
1212.9	1242.9	10.65	11.12	11.44
1230.9	1260.9	10.55	11.09	11.44
1248.8	1278.8	10.53	11.14	11.52
1266.8	1296.8	10.50	11.17	11.57
1284.7	1314.7	10.45	11.21	11.65
1302.7	1332.7	10.50	11.30	11.77
1320.6	1350.6	10.38	11.31	11.83
1338.6	1368.6	10.40	11.41	11.97
1356.5	1386.5	10.42	11.50	12.10
1374.5	1404.5	10.32	11.53	12.21
1392.4	1422.4	10.41	11.68	12.39
1410.4	1440.4	10.30	11.69	12.49
1428.3	1458.3	10.29	11.79	12.65
1446.3	1476.3	10.31	11.86	12.76
1464.2	1494.2	10.16	11.83	12.84
1482.2	1512.2	10.23	11.94	13.00
1500.1	1530.1	10.01	11.80	12.96

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		0	+3	+6		0	+3	+6		0	+3	+6
800.1	830.1	2.24	2.02	1.88	800.1	1.68	2.14	2.69	10.0	3.34	2.37	2.03
818.0	848.0	2.45	2.23	2.09	818.0	1.72	2.19	2.76	14.9	2.72	2.31	1.70
836.0	866.0	2.67	2.44	2.28	836.0	1.76	2.23	2.79	19.7	2.66	2.39	1.97
853.9	883.9	2.80	2.57	2.40	853.9	1.76	2.21	2.74	24.6	2.65	2.16	1.81
871.9	901.9	2.84	2.61	2.45	871.9	1.79	2.24	2.77	29.5	2.49	2.32	1.63
889.8	919.8	2.90	2.71	2.55	889.8	1.81	2.24	2.75	34.4	2.46	1.96	1.54
907.8	937.8	3.14	2.96	2.81	907.8	1.86	2.30	2.82	39.2	2.45	2.00	1.62
925.7	955.7	3.34	3.16	3.01	925.7	1.92	2.36	2.89	44.1	2.26	1.90	1.58
943.7	973.7	3.35	3.19	3.05	943.7	1.93	2.35	2.86	49.0	2.24	1.82	1.50
961.6	991.6	3.28	3.14	3.03	961.6	1.97	2.39	2.89	53.8	2.13	1.83	1.50
979.6	1009.6	3.30	3.20	3.12	979.6	1.98	2.37	2.86	58.7	2.16	1.78	1.51
997.5	1027.5	3.48	3.40	3.34	997.5	2.01	2.40	2.89	63.6	2.19	1.72	1.39
1015.5	1045.5	3.61	3.52	3.49	1015.5	2.07	2.48	2.98	68.5	2.16	1.81	1.46
1033.4	1063.4	3.52	3.43	3.42	1033.4	2.11	2.49	2.97	73.3	2.15	1.81	1.44
1051.4	1081.4	3.42	3.33	3.33	1051.4	2.15	2.52	3.00	78.2	2.22	1.84	1.51
1069.3	1099.3	3.52	3.43	3.44	1069.3	2.17	2.52	2.97	83.1	2.25	1.87	1.52
1087.3	1117.3	3.72	3.60	3.62	1087.3	2.18	2.52	2.96	87.9	2.26	1.87	1.62
1105.2	1135.2	3.86	3.70	3.70	1105.2	2.25	2.59	3.04	92.8	2.31	1.92	1.61
1123.2	1153.2	3.79	3.61	3.60	1123.2	2.30	2.63	3.06	97.7	2.39	1.92	1.65
1141.1	1171.1	3.76	3.56	3.55	1141.1	2.36	2.67	3.11	102.6	2.40	1.97	1.66
1159.1	1189.1	3.93	3.73	3.72	1159.1	2.40	2.69	3.10	107.4	2.39	2.04	1.66
1177.0	1207.0	4.16	3.94	3.90	1177.0	2.41	2.67	3.07	112.3	2.40	1.96	1.66
1195.0	1225.0	4.28	4.01	3.96	1195.0	2.46	2.73	3.12	117.2	2.44	1.98	1.65
1212.9	1242.9	4.14	3.90	3.85	1212.9	2.51	2.75	3.13	122.1	2.48	2.01	1.66
1230.9	1260.9	4.14	3.88	3.83	1230.9	2.58	2.82	3.19	126.9	2.44	1.95	1.66
1248.8	1278.8	4.29	4.02	3.96	1248.8	2.63	2.86	3.21	131.8	2.40	1.98	1.67
1266.8	1296.8	4.46	4.18	4.09	1266.8	2.65	2.83	3.16	136.7	2.36	1.93	1.62
1284.7	1314.7	4.51	4.18	4.08	1284.7	2.69	2.87	3.19	141.5	2.30	1.92	1.65
1302.7	1332.7	4.37	4.06	3.95	1302.7	2.73	2.89	3.19	146.4	2.29	1.92	1.59
1320.6	1350.6	4.36	4.03	3.91	1320.6	2.81	2.94	3.26	151.3	2.25	1.88	1.59
1338.6	1368.6	4.39	4.07	3.96	1338.6	2.87	3.00	3.29	156.2	2.28	1.87	1.58
1356.5	1386.5	4.60	4.22	4.06	1356.5	2.92	3.00	3.25	161.0	2.20	1.87	1.58
1374.5	1404.5	4.55	4.13	3.96	1374.5	2.93	3.00	3.24	165.9	2.26	1.88	1.59
1392.4	1422.4	4.42	4.03	3.86	1392.4	2.98	3.03	3.25	170.8	2.22	1.87	1.59
1410.4	1440.4	4.53	4.11	3.92	1410.4	3.04	3.08	3.29	175.6	2.33	1.89	1.63
1428.3	1458.3	4.79	4.33	4.10	1428.3	3.10	3.14	3.33	180.5	2.29	1.94	1.64
1446.3	1476.3	4.75	4.27	4.03	1446.3	3.18	3.17	3.32	185.4	2.33	1.96	1.66
1464.2	1494.2	4.74	4.22	3.96	1464.2	3.20	3.18	3.33	190.3	2.36	1.99	1.65
1482.2	1512.2	4.74	4.22	3.95	1482.2	3.22	3.19	3.31	195.1	2.40	1.99	1.67
1500.1	1530.1	4.92	4.36	4.06	1500.1	3.26	3.20	3.30	200.0	2.38	1.96	1.68

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+9	4	6	27	30	47	45	55	60	68
1	-	7	+0	21	24	31	48	45	58	56	65	69
2	115	42	39	41	37	49	52	56	74	71	73	71
3	122	67	62	57	84	61	73	67	87	76	87	85
4	114	98	89	95	85	75	99	90	101	101	99	92
5	118	94	109	99	98	90	75	97	97	94	99	103
6	113	111	95	98	104	100	101	87	90	91	100	104
7	107	95	105	106	99	95	90	87	77	96	90	90
8	110	97	114	106	98	106	103	91	91	84	97	96
9	113	97	96	105	108	100	97	97	94	98	82	92
10	115	100	95	96	112	96	103	96	107	97	109	83
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: 930.01 MHz; +3.00 dBm
IF OUT: 29.91 MHz; -25.19 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	1	15	18	41	41	70	66	69	78	82
1	-	7	+0	22	25	33	52	53	66	67	77	87
2	100	32	30	34	28	41	43	51	64	69	77	80
3	122	46	42	38	58	44	56	51	67	64	74	76
4	112	70	66	61	57	51	62	59	69	70	77	81
5	123	85	74	76	79	62	79	64	73	68	92	81
6	109	104	95	91	85	83	78	72	84	79	81	100
7	113	104	103	109	103	103	85	80	80	84	90	86
8	100	99	109	105	114	103	106	92	88	90	92	99
9	117	111	100	109	108	107	111	103	100	102	92	93
10	111	104	107	106	102	110	110	109	117	112	96	98
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: 930.01 MHz; +3.00 dBm
IF OUT: 29.91 MHz; -15.23 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.

REV. X2
JMS-2L
100817
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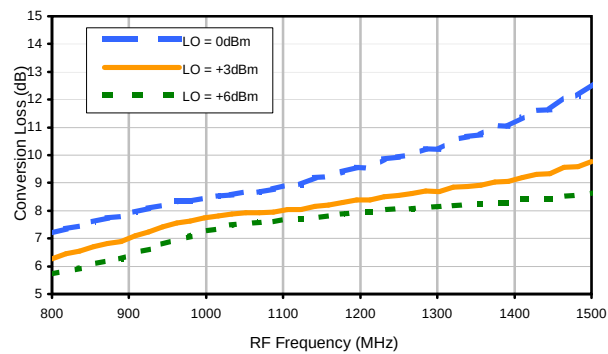


Frequency Mixer

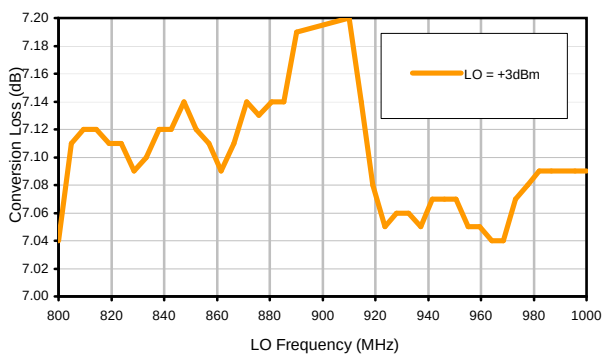
JMS-2L

Typical Performance Curves

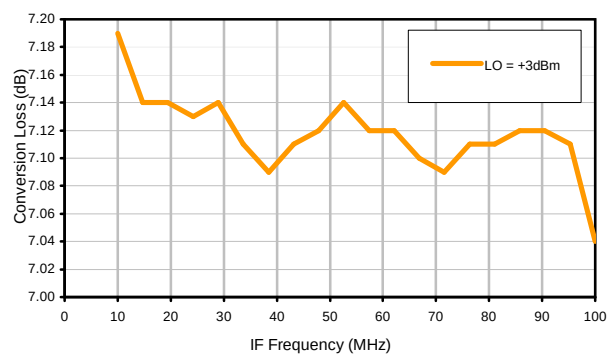
Conversion Loss @ IF=30MHz



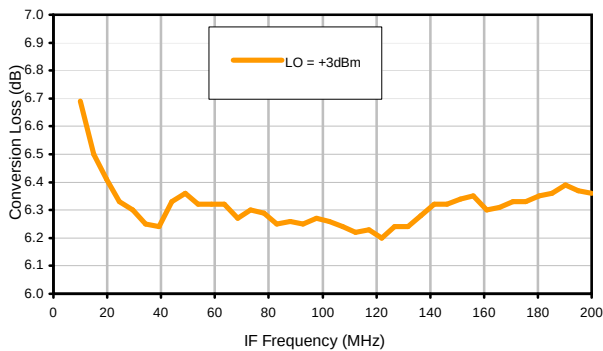
Conversion Loss vs. LO @ RF=900.1MHz



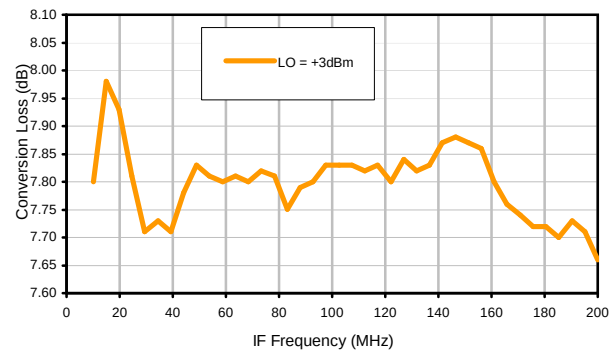
Conversion Loss vs. IF @ RF=900.1MHz



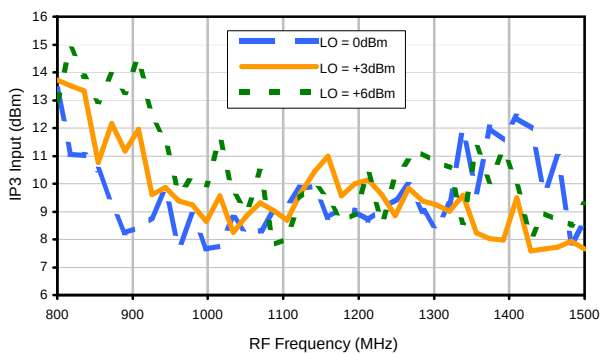
Conversion Loss vs. IF @ RF=800.1MHz



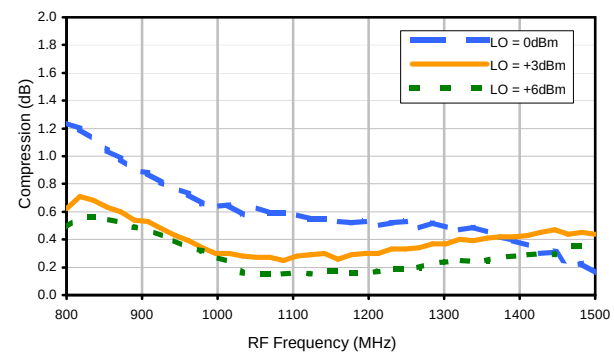
Conversion Loss vs. IF @ RF=1000.1MHz



IP3 Input



Compression @ RF IN=-3dBm



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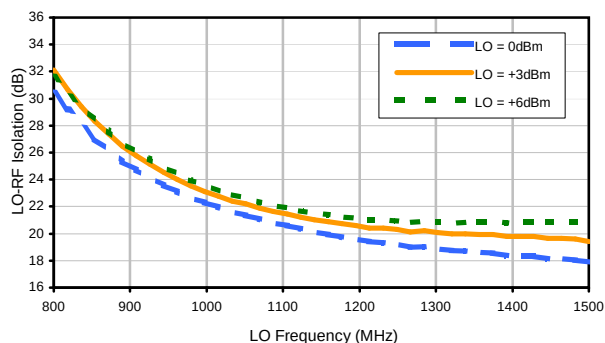


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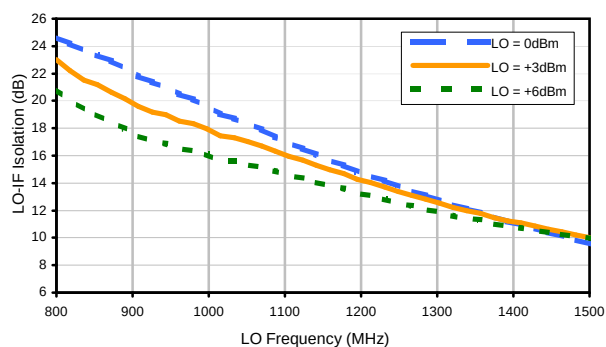


Typical Performance Curves

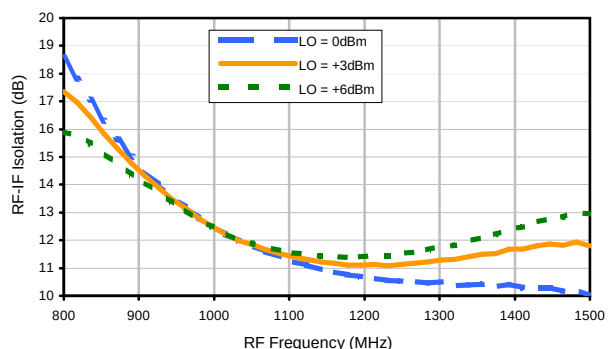
LO-RF Isolation



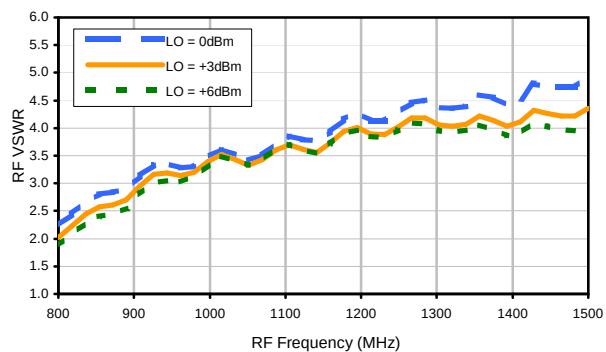
LO-IF Isolation



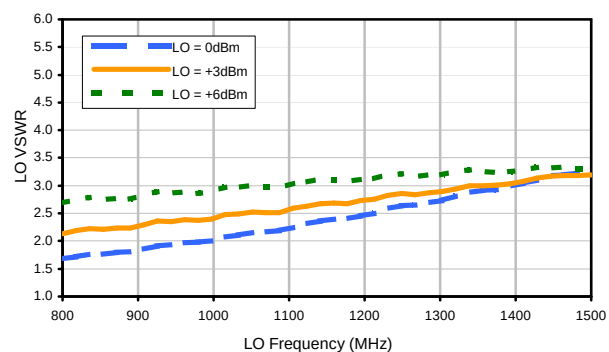
RF-IF Isolation



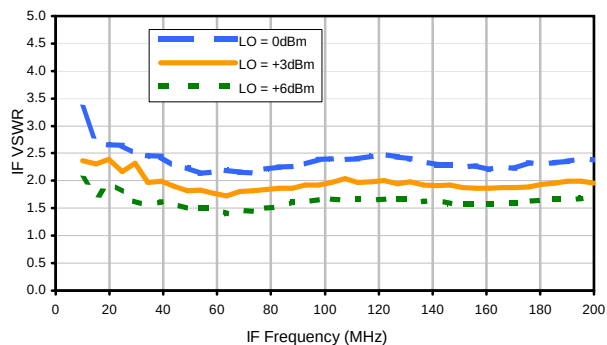
RF VSWR



LO VSWR



IF VSWR



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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+9	4	6	27	30	47	45	55	60	68
1	-	7	+0	21	24	31	48	45	58	56	65	69
2	115	42	39	41	37	49	52	56	74	71	73	71
3	122	67	62	57	84	61	73	67	87	76	87	85
4	114	98	89	95	85	75	99	90	101	101	99	92
5	118	94	109	99	98	90	75	97	97	94	99	103
6	113	111	95	98	104	100	101	87	90	91	100	104
7	107	95	105	106	99	95	90	87	77	96	90	90
8	110	97	114	106	98	106	103	91	91	84	97	96
9	113	97	96	105	108	100	97	97	94	98	82	92
10	115	100	95	96	112	96	103	96	107	97	109	83
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: 930.01 MHz; +3.00 dBm
IF OUT: 29.91 MHz; -25.19 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	1	15	18	41	41	70	66	69	78	82
1	-	7	+0	22	25	33	52	53	66	67	77	87
2	100	32	30	34	28	41	43	51	64	69	77	80
3	122	46	42	38	58	44	56	51	67	64	74	76
4	112	70	66	61	57	51	62	59	69	70	77	81
5	123	85	74	76	79	62	79	64	73	68	92	81
6	109	104	95	91	85	83	78	72	84	79	81	100
7	113	104	103	109	103	103	85	80	80	84	90	86
8	100	99	109	105	114	103	106	92	88	90	92	99
9	117	111	100	109	108	107	111	103	100	102	92	93
10	111	104	107	106	102	110	110	109	117	112	96	98
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: 930.01 MHz; +3.00 dBm
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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.

REV. X2

JMS-2L

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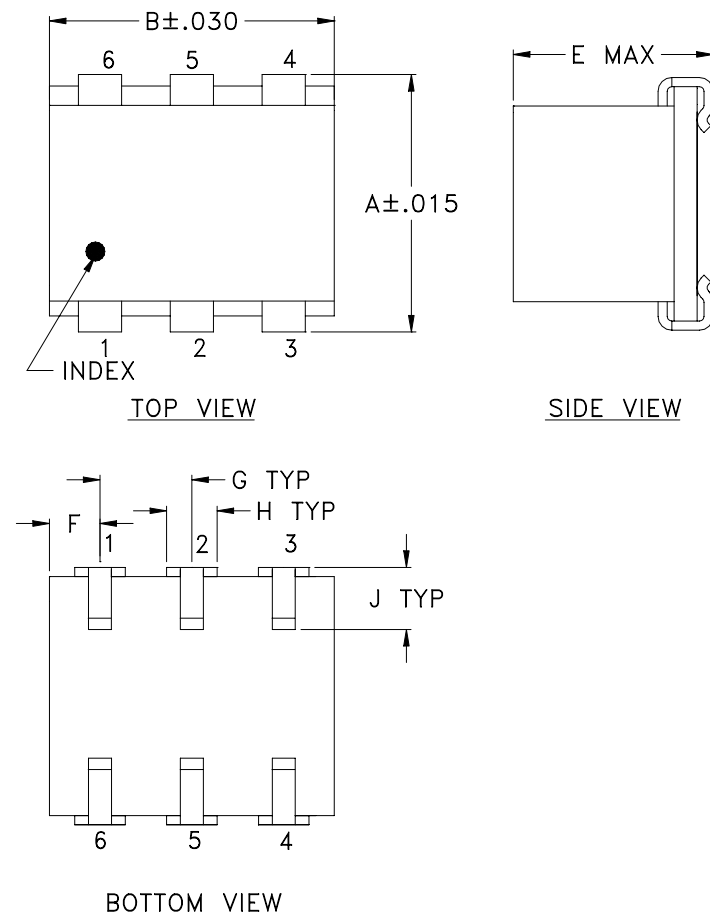
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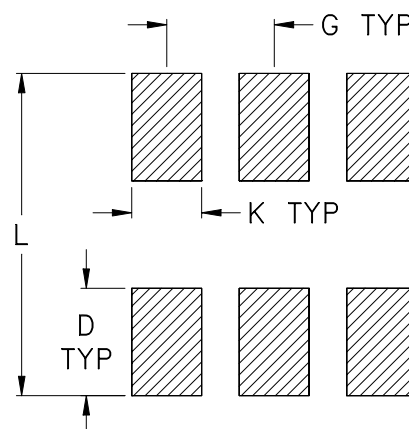
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Outline Dimensions



PCB Land Pattern



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

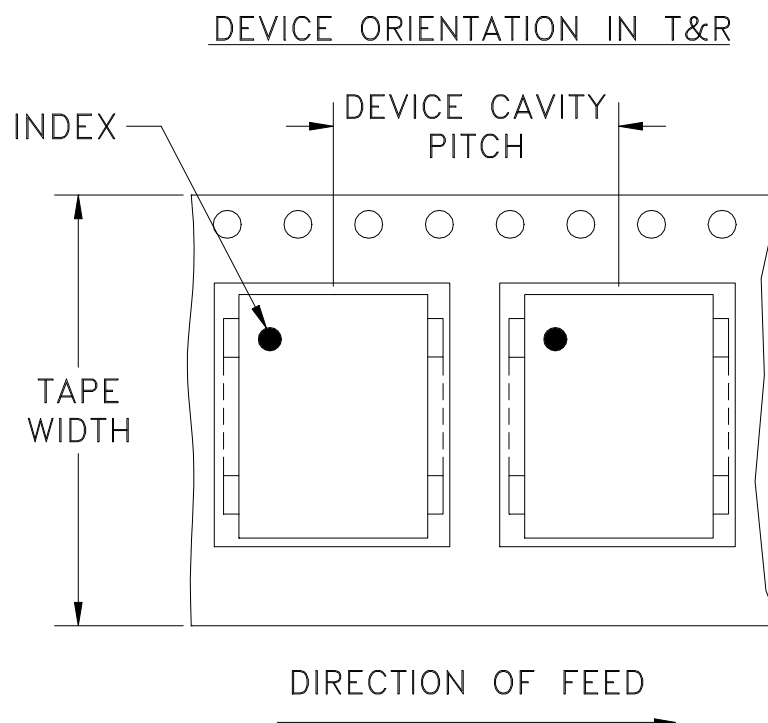
CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
BH292	.280 (7.11)	.310 (7.87)	- -	.100 (2.54)	.225 (5.72)	.055 (1.40)	.100 (2.54)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.300 (7.62)	.45

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

Notes:

- Case material: Ceramic.
- Termination finish:
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

Tape & Reel Packaging TR-F24



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
16	12	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.

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



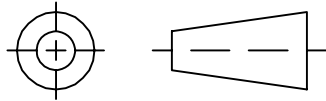
INTERNET <http://www.minicircuits.com>

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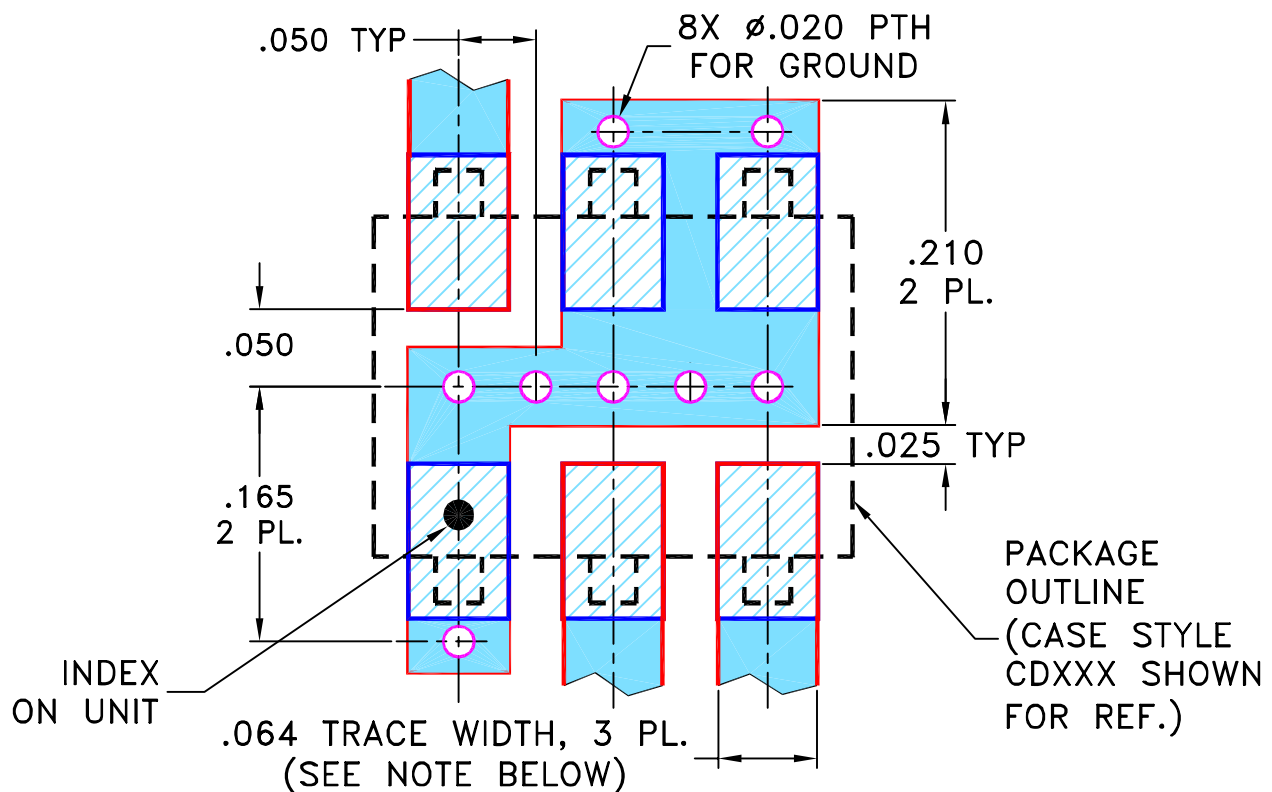
THIRD ANGLE PROJECTION



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

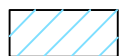
SUGGESTED MOUNTING CONFIGURATION
FOR BH292, CD541/542/636/637, TT100/240 CASE
STYLES, "gk", "ht", "hu", "nd", "w" PIN CONNECTIONS



- 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 $\pm$.005ANGLES $\pm$ 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:

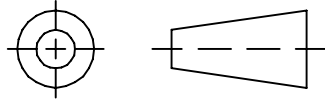
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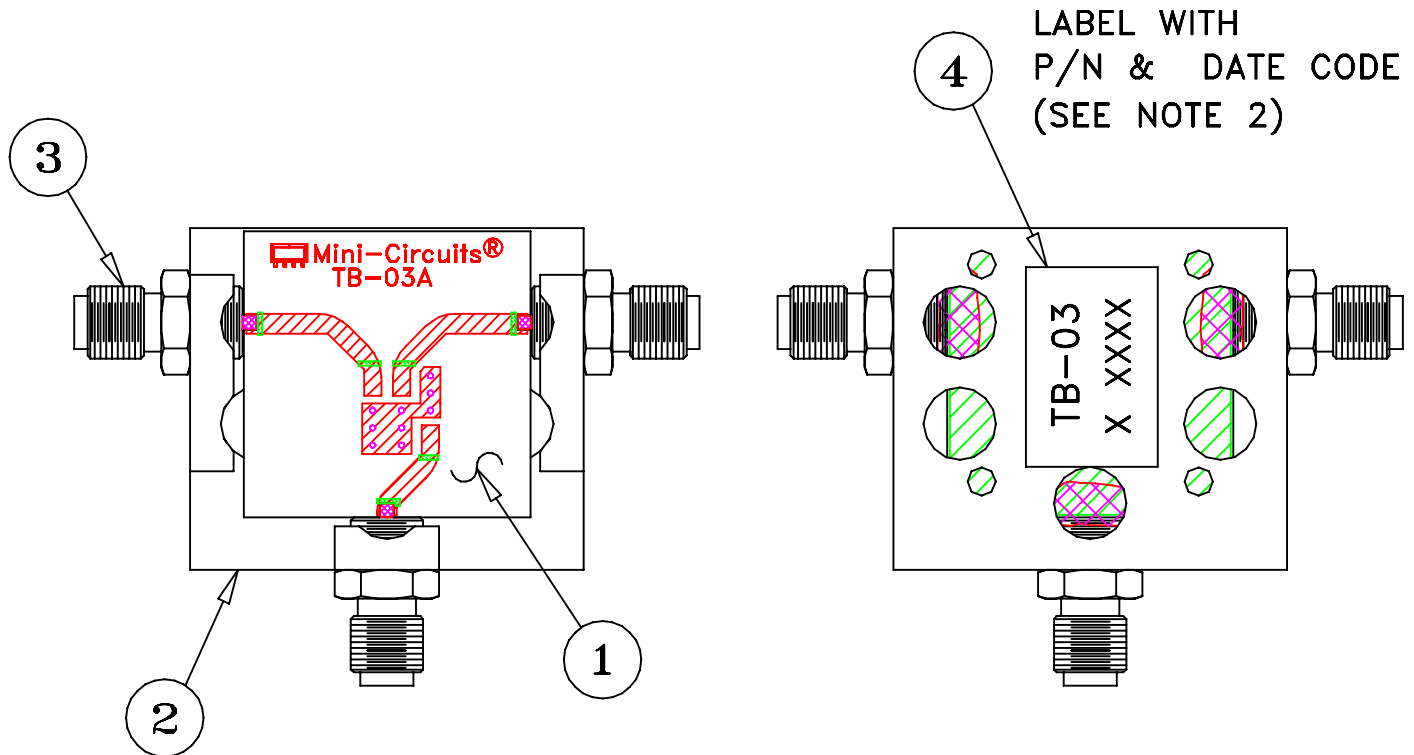
ASHEETA1.DWG REV:A DATE:01/12/95

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

08.29.99

TOLERANCES ON:

CHECKED

SG

07.06.99

2 PL DECIMALS ±

APPROVED

MG

07.10.99

3 PL DECIMALS ±

ANGLES ±

FRACTIONS ±

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


Mini-Circuits® 13 Neptune Avenue
Brooklyn NY 11235

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

SIZE

A

CODE IDENT

15542

DRAWING NO:

TB-03-20

REV:

H

FILE:

WTB-03

SCALE:

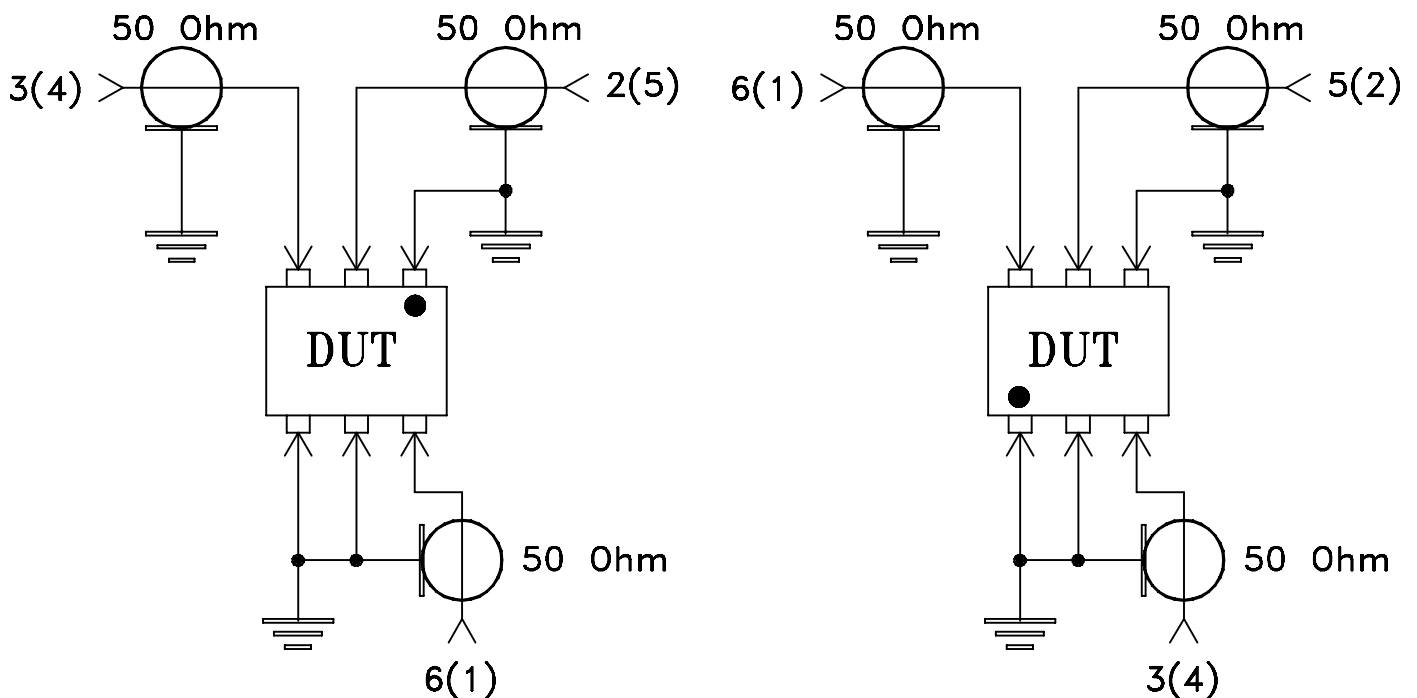
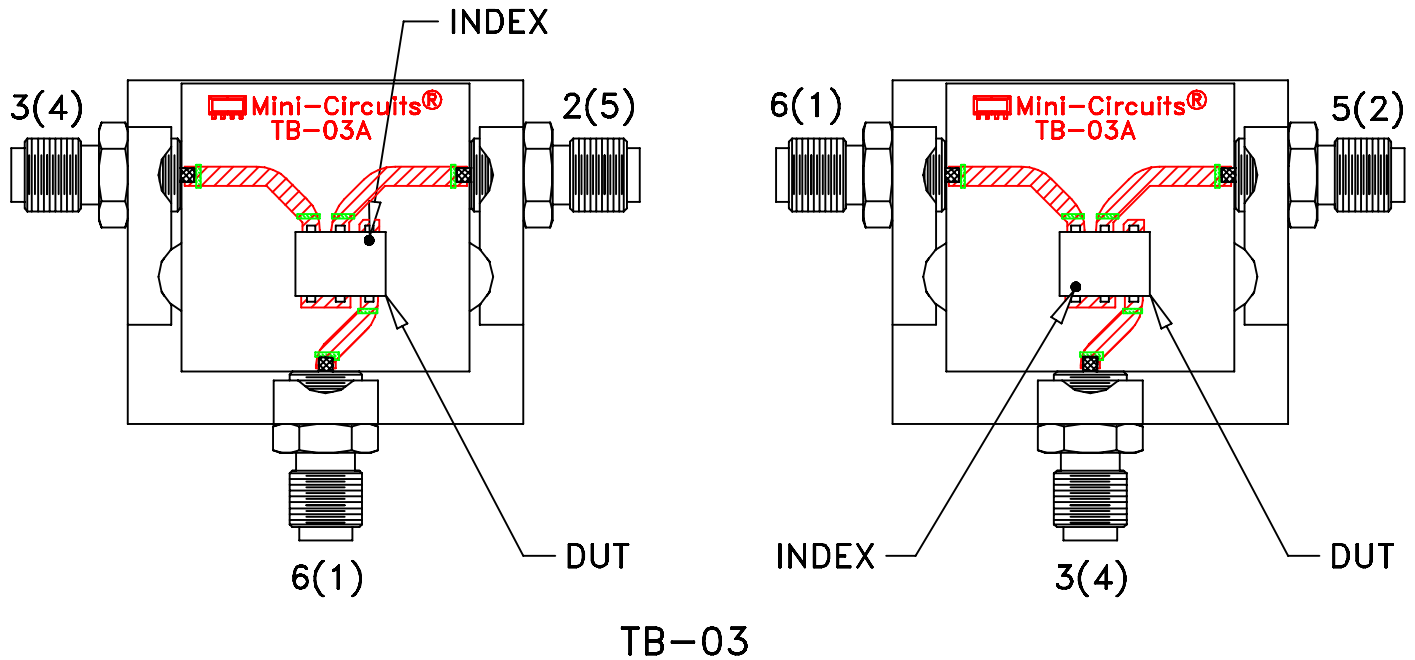
1.5:1

SHEET:

1 OF 2

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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