Non-Catalog Model

Frequency Mixer ADE-28

Level 7 (LO Power +7 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 : CD542

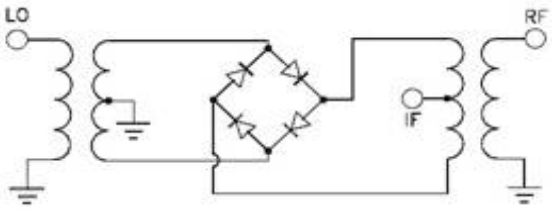
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency	**LO** (fL to fU)	1500		2800	MHz
	RF (fL to fU)	1500		2800	MHz
	IF	0		1000	MHz
Conversion Loss			5.1	8.2	dB
LO-RF Isolation		21	30		dB
LO-IF Isolation		17	27		dB
IP3 Input			+8		dBm
1 dB Comp. Input Power			+1		dBm

Note: Aqueous washable.

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	4
IF	3
GROUND	1, 2, 5

Electrical Schematics



Frequency Mixer ADE-28

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+4	+7	+10
1200.0	1230.0	12.65	11.93	11.43
1280.0	1310.0	10.96	10.34	9.94
1360.0	1390.0	9.54	9.06	8.75
1440.0	1470.0	8.26	7.88	7.67
1520.0	1550.0	7.20	6.91	6.76
1600.0	1630.0	6.40	6.18	6.05
1680.0	1710.0	5.89	5.68	5.57
1760.0	1790.0	5.65	5.44	5.30
1840.0	1870.0	5.55	5.32	5.19
1920.0	1950.0	5.53	5.30	5.18
2000.0	2030.0	5.65	5.48	5.44
2080.0	2110.0	5.70	5.41	5.31
2160.0	2190.0	5.69	5.40	5.34
2240.0	2270.0	6.52	5.91	5.61
2320.0	2350.0	6.27	5.38	4.98
2400.0	2430.0	5.99	5.27	4.95
2480.0	2510.0	5.83	5.17	4.81
2560.0	2590.0	5.81	5.17	4.81
2640.0	2670.0	5.91	5.29	4.89
2720.0	2750.0	6.00	5.39	5.02
2800.0	2830.0	6.12	5.58	5.21
2880.0	2910.0	6.16	5.72	5.42
2960.0	2990.0	6.31	5.94	5.68
3040.0	3070.0	6.47	6.07	5.86
3120.0	3150.0	6.74	6.31	6.09
3200.0	3230.0	7.12	6.66	6.45
3280.0	3310.0	7.61	7.20	7.02
3360.0	3390.0	8.11	7.73	7.54
3440.0	3470.0	8.49	8.22	8.04
3500.0	3530.0	8.53	8.33	8.21
3580.0	3610.0	8.98	8.78	8.68
3640.0	3670.0	9.44	9.25	9.18
3720.0	3750.0	9.67	9.54	9.51
3780.0	3810.0	9.78	9.69	9.69
3860.0	3890.0	10.12	10.13	10.19
3920.0	3950.0	10.36	10.39	10.47
4000.0	4030.0	10.42	10.42	10.50
4060.0	4090.0	10.56	10.53	10.60
4140.0	4170.0	11.23	11.15	11.21
4200.0	4230.0	11.76	11.69	11.75

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+4	+7	+10
1200.0	1230.0	13.50	14.94	15.99
1280.0	1310.0	10.60	11.35	12.05
1360.0	1390.0	8.58	8.84	9.59
1440.0	1470.0	6.41	6.97	7.56
1520.0	1550.0	4.58	5.25	5.99
1600.0	1630.0	3.94	4.64	5.48
1680.0	1710.0	3.87	4.57	5.41
1760.0	1790.0	4.44	5.33	6.24
1840.0	1870.0	5.39	7.14	8.44
1920.0	1950.0	6.45	10.25	12.49
2000.0	2030.0	6.49	9.92	13.18
2080.0	2110.0	6.14	8.23	11.13
2160.0	2190.0	11.70	13.26	15.18
2240.0	2270.0	8.47	24.10	12.87
2320.0	2350.0	4.39	5.61	6.66
2400.0	2430.0	3.65	5.23	6.66
2480.0	2510.0	3.48	5.14	6.75
2560.0	2590.0	3.58	5.11	6.65
2640.0	2670.0	3.37	5.02	6.37
2720.0	2750.0	3.48	5.35	6.89
2800.0	2830.0	3.46	5.18	6.94
2880.0	2910.0	4.04	5.67	7.31
2960.0	2990.0	4.70	6.05	7.64
3040.0	3070.0	5.34	6.97	8.57
3120.0	3150.0	6.28	8.68	11.29
3200.0	3230.0	6.96	10.51	13.63
3280.0	3310.0	7.83	11.33	14.14
3360.0	3390.0	8.45	11.68	14.79
3440.0	3470.0	9.30	11.82	14.50
3500.0	3530.0	10.23	11.48	13.90
3580.0	3610.0	12.01	12.19	14.23
3640.0	3670.0	13.48	13.10	14.81
3720.0	3750.0	15.00	14.21	15.31
3780.0	3810.0	16.32	14.43	14.99
3860.0	3890.0	19.04	16.18	15.86
3920.0	3950.0	19.60	17.77	16.75
4000.0	4030.0	18.37	18.69	16.78
4060.0	4090.0	16.23	19.00	16.73
4140.0	4170.0	17.38	21.04	17.03
4200.0	4230.0	18.75	21.82	18.11

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB) @LO (dBm)		
		+4	+7	+10
1200.0	1230.0	-0.23	-0.11	-0.04
1280.0	1310.0	0.28	0.32	0.35
1360.0	1390.0	0.97	0.87	0.73
1440.0	1470.0	1.48	1.26	1.06
1520.0	1550.0	1.85	1.53	1.27
1600.0	1630.0	2.04	1.60	1.31
1680.0	1710.0	2.12	1.65	1.33
1760.0	1790.0	2.14	1.68	1.38
1840.0	1870.0	2.04	1.56	1.27
1920.0	1950.0	1.87	1.33	1.08
2000.0	2030.0	1.55	0.96	0.71
2080.0	2110.0	1.04	0.61	0.40
2160.0	2190.0	1.51	1.03	0.69
2240.0	2270.0	2.33	2.07	1.79
2320.0	2350.0	2.70	2.49	2.18
2400.0	2430.0	2.58	2.42	2.19
2480.0	2510.0	2.38	2.17	1.95
2560.0	2590.0	2.18	1.88	1.66
2640.0	2670.0	2.12	1.74	1.52
2720.0	2750.0	2.09	1.64	1.37
2800.0	2830.0	1.94	1.48	1.20
2880.0	2910.0	1.82	1.36	1.08
2960.0	2990.0	1.62	1.19	0.92
3040.0	3070.0	1.40	0.99	0.79
3120.0	3150.0	1.13	0.77	0.61
3200.0	3230.0	0.92	0.60	0.47
3280.0	3310.0	0.61	0.40	0.32
3360.0	3390.0	0.40	0.29	0.24
3440.0	3470.0	0.28	0.22	0.20
3500.0	3530.0	0.30	0.21	0.20
3580.0	3610.0	0.23	0.18	0.16
3640.0	3670.0	0.18	0.15	0.15
3720.0	3750.0	0.17	0.14	0.13
3780.0	3810.0	0.18	0.14	0.14
3860.0	3890.0	0.17	0.11	0.11
3920.0	3950.0	0.15	0.09	0.08
4000.0	4030.0	0.16	0.08	0.08
4060.0	4090.0	0.19	0.09	0.09
4140.0	4170.0	0.15	0.09	0.09
4200.0	4230.0	0.12	0.07	0.07

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IF/RF MICROWAVE COMPONENTS

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2139.89MHz (dB)
		@LO (dBm)
		+7
10.1	2150.0	5.7
70.1	2210.0	5.6
130.1	2270.0	6.1
190.1	2330.0	6.6
250.1	2390.0	6.8
310.1	2450.0	6.8
370.1	2510.0	6.8
430.1	2570.0	6.7
490.1	2630.0	6.5
550.1	2690.0	6.4
610.1	2750.0	6.2
670.1	2810.0	6.0
730.1	2870.0	5.8
790.1	2930.0	5.6
850.1	2990.0	5.5
910.1	3050.0	5.4
970.1	3110.0	5.3
1030.1	3170.0	5.2
1090.1	3230.0	5.1
1150.1	3290.0	5.1
1210.1	3350.0	5.2
1270.1	3410.0	5.3
1330.1	3470.0	5.3
1390.1	3530.0	5.3
1450.1	3590.0	5.3
1510.1	3650.0	5.4
1570.1	3710.0	5.5
1630.1	3770.0	5.5
1690.1	3830.0	5.7
1750.1	3890.0	5.8
1790.1	3930.0	5.9
1850.1	3990.0	6.0
1890.1	4030.0	6.0
1950.1	4090.0	6.1
1990.1	4130.0	6.2
2050.1	4190.0	6.3
2090.1	4230.0	6.3
2150.1	4290.0	6.4
2190.1	4330.0	6.6
2250.1	4390.0	7.2

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1489.9MHz (dB)
		@LO (dBm)
		+7
10.1	1500.0	7.01
50.1	1540.0	7.26
90.1	1580.0	7.44
130.1	1620.0	7.64
170.1	1660.0	7.74
210.1	1700.0	7.68
250.1	1740.0	7.61
290.1	1780.0	7.48
330.1	1820.0	7.33
370.1	1860.0	7.12
410.1	1900.0	6.95
450.1	1940.0	7.04
490.1	1980.0	6.98
530.1	2020.0	7.08
570.1	2060.0	7.24
610.1	2100.0	7.34
650.1	2140.0	7.38
690.1	2180.0	7.40
730.1	2220.0	7.49
770.1	2260.0	7.48
810.1	2300.0	7.48
850.1	2340.0	7.50
890.1	2380.0	7.48
930.1	2420.0	7.48
970.1	2460.0	7.46
1010.1	2500.0	7.39
1050.1	2540.0	7.41
1090.1	2580.0	7.43
1130.1	2620.0	7.49
1170.1	2660.0	7.63
1210.1	2700.0	7.83
1250.1	2740.0	8.15
1290.1	2780.0	8.62
1330.1	2820.0	8.87
1370.1	2860.0	9.12
1390.1	2880.0	9.32
1430.1	2920.0	9.77
1450.1	2940.0	10.03
1490.1	2980.0	10.58
1510.1	3000.0	10.80

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2810.1MHz (dB)
		@LO (dBm)
		+7
2510.1	300.0	10.59
2450.1	360.0	9.35
2390.1	420.0	8.31
2330.1	480.0	7.67
2270.1	540.0	7.17
2210.1	600.0	6.79
2150.1	660.0	6.50
2090.1	720.0	6.16
2030.1	780.0	5.94
1970.1	840.0	5.78
1910.1	900.0	5.57
1850.1	960.0	5.62
1790.1	1020.0	5.58
1730.1	1080.0	5.44
1670.1	1140.0	5.52
1610.1	1200.0	5.51
1550.1	1260.0	5.51
1490.1	1320.0	5.51
1430.1	1380.0	5.56
1370.1	1440.0	5.55
1310.1	1500.0	5.51
1250.1	1560.0	5.44
1190.1	1620.0	5.02
1130.1	1680.0	4.52
1050.1	1760.0	4.44
990.1	1820.0	4.57
910.1	1900.0	4.53
850.1	1960.0	4.55
770.1	2040.0	4.66
710.1	2100.0	4.86
630.1	2180.0	5.28
570.1	2240.0	5.32
490.1	2320.0	5.53
430.1	2380.0	5.53
350.1	2460.0	5.43
290.1	2520.0	5.57
210.1	2600.0	5.51
150.1	2660.0	5.53
70.1	2740.0	5.51
10.1	2800.0	5.51

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
1230.0	41.52	41.60	41.49	32.24	32.42	31.93
1310.0	39.77	40.37	40.67	33.31	32.90	31.96
1390.0	37.42	38.26	39.02	35.15	33.73	32.28
1470.0	35.45	36.61	37.48	35.69	34.21	32.84
1550.0	33.20	34.34	35.12	34.83	33.91	32.78
1630.0	31.72	32.94	33.72	32.94	31.77	30.87
1710.0	31.12	32.50	33.42	32.02	30.69	29.72
1790.0	30.49	31.68	32.59	30.93	29.88	28.98
1870.0	30.51	31.22	31.67	29.95	29.09	28.42
1950.0	31.28	31.58	31.82	29.12	28.11	27.66
2030.0	32.51	32.84	32.51	28.22	27.36	26.83
2110.0	32.63	33.70	33.84	27.39	26.87	26.45
2190.0	32.66	34.39	35.46	27.23	27.04	26.62
2270.0	33.08	35.03	35.73	27.36	27.27	27.05
2350.0	33.26	34.74	34.75	28.01	28.18	27.81
2430.0	33.07	34.19	34.47	28.97	29.34	28.85
2510.0	34.33	34.77	35.04	29.74	30.14	29.89
2590.0	36.44	37.78	37.84	30.46	30.91	30.61
2670.0	37.53	41.67	42.45	31.24	31.53	31.25
2750.0	36.75	44.67	57.15	31.84	32.12	31.57
2830.0	35.25	40.97	44.41	32.24	32.57	31.91
2910.0	33.50	37.24	37.76	32.63	32.89	32.21
2990.0	31.77	34.97	34.74	32.75	33.00	32.24
3070.0	29.77	33.12	33.99	32.76	32.80	32.30
3150.0	28.32	31.27	32.45	32.96	32.97	32.36
3230.0	27.21	29.63	30.57	32.97	32.96	31.92
3310.0	26.36	28.29	29.11	32.89	32.77	31.70
3390.0	25.72	27.36	28.20	32.72	32.52	31.51
3470.0	25.19	26.74	27.50	32.55	32.35	31.30
3530.0	24.74	26.39	27.18	32.58	32.48	31.32
3610.0	24.26	25.91	26.81	32.38	32.19	31.07
3670.0	24.13	25.76	26.63	32.14	31.85	30.71
3750.0	23.94	25.56	26.62	32.26	31.86	30.54
3810.0	23.82	25.56	26.73	32.49	31.99	30.70
3890.0	23.75	25.46	26.69	32.89	32.31	30.62
3950.0	23.96	25.67	26.94	32.78	32.24	30.59
4030.0	24.36	26.20	27.54	32.72	32.34	30.40
4090.0	24.68	26.60	28.02	32.65	32.29	30.19
4170.0	25.12	26.94	28.32	32.24	32.13	30.12
4230.0	25.36	26.90	27.97	31.64	32.18	30.72

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+4	+7	+10
1200.0	1230.0	18.14	18.52	18.78
1280.0	1310.0	17.32	17.53	17.80
1360.0	1390.0	17.03	17.14	17.31
1440.0	1470.0	16.78	16.64	16.52
1520.0	1550.0	16.34	16.10	15.99
1600.0	1630.0	15.94	15.80	15.75
1680.0	1710.0	15.06	15.02	15.08
1760.0	1790.0	14.53	14.45	14.44
1840.0	1870.0	14.54	14.48	14.49
1920.0	1950.0	14.44	14.40	14.24
2000.0	2030.0	13.94	13.65	13.51
2080.0	2110.0	13.22	12.78	12.47
2160.0	2190.0	13.01	12.57	12.28
2240.0	2270.0	13.91	13.89	13.80
2320.0	2350.0	16.81	16.60	16.42
2400.0	2430.0	16.75	16.81	16.72
2480.0	2510.0	16.64	16.85	17.05
2560.0	2590.0	17.16	17.48	17.89
2640.0	2670.0	17.89	18.33	18.75
2720.0	2750.0	19.13	19.73	20.11
2800.0	2830.0	20.38	20.85	21.12
2880.0	2910.0	21.22	21.33	21.21
2960.0	2990.0	20.94	20.67	20.41
3040.0	3070.0	19.74	19.18	18.88
3120.0	3150.0	18.27	17.67	17.37
3200.0	3230.0	16.84	16.31	16.07
3280.0	3310.0	15.60	15.19	15.07
3360.0	3390.0	14.63	14.39	14.26
3440.0	3470.0	13.78	13.56	13.51
3500.0	3530.0	13.43	13.15	13.09
3580.0	3610.0	13.16	12.97	12.87
3640.0	3670.0	12.98	12.82	12.75
3720.0	3750.0	12.95	12.83	12.79
3780.0	3810.0	13.05	12.98	12.93
3860.0	3890.0	12.88	12.83	12.81
3920.0	3950.0	13.06	13.07	13.02
4000.0	4030.0	13.62	13.66	13.70
4060.0	4090.0	14.18	14.25	14.28
4140.0	4170.0	14.85	15.05	15.16
4200.0	4230.0	15.41	15.64	15.69

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IF/RF MICROWAVE COMPONENTS

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+4	+7	+10
1200.0	1230.0	15.13	14.50	14.03
1280.0	1310.0	11.93	11.38	10.89
1360.0	1390.0	9.43	8.90	8.51
1440.0	1470.0	7.20	6.73	6.35
1520.0	1550.0	5.23	4.95	4.70
1600.0	1630.0	3.79	3.65	3.56
1680.0	1710.0	2.78	2.75	2.75
1760.0	1790.0	2.20	2.23	2.27
1840.0	1870.0	1.96	2.05	2.15
1920.0	1950.0	1.95	2.18	2.32
2000.0	2030.0	1.97	2.34	2.58
2080.0	2110.0	1.64	1.98	2.26
2160.0	2190.0	1.38	1.66	1.89
2240.0	2270.0	1.32	1.21	1.17
2320.0	2350.0	1.77	1.51	1.35
2400.0	2430.0	1.88	1.67	1.56
2480.0	2510.0	1.83	1.66	1.56
2560.0	2590.0	1.76	1.62	1.53
2640.0	2670.0	1.70	1.60	1.54
2720.0	2750.0	1.68	1.63	1.61
2800.0	2830.0	1.70	1.74	1.76
2880.0	2910.0	1.83	1.93	1.99
2960.0	2990.0	2.04	2.18	2.28
3040.0	3070.0	2.31	2.48	2.58
3120.0	3150.0	2.65	2.84	2.95
3200.0	3230.0	3.01	3.20	3.28
3280.0	3310.0	3.44	3.63	3.70
3360.0	3390.0	3.91	4.11	4.18
3440.0	3470.0	4.21	4.44	4.51
3500.0	3530.0	4.20	4.44	4.55
3580.0	3610.0	4.59	4.83	4.95
3640.0	3670.0	4.95	5.20	5.36
3720.0	3750.0	5.19	5.46	5.59
3780.0	3810.0	5.44	5.74	5.91
3860.0	3890.0	5.91	6.26	6.49
3920.0	3950.0	6.17	6.49	6.76
4000.0	4030.0	6.63	6.89	7.14
4060.0	4090.0	7.20	7.41	7.63
4140.0	4170.0	8.01	8.08	8.23
4200.0	4230.0	8.20	8.23	8.31

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+4	+7	+10
1230.0	2.34	3.19	4.24
1310.0	2.41	3.25	4.28
1390.0	2.50	3.33	4.35
1470.0	2.58	3.40	4.43
1550.0	2.72	3.54	4.59
1630.0	2.88	3.65	4.68
1710.0	3.08	3.76	4.73
1790.0	3.27	3.85	4.74
1870.0	3.51	3.93	4.73
1950.0	3.83	4.12	4.84
2030.0	4.08	4.31	4.96
2110.0	4.17	4.33	4.92
2190.0	4.28	4.32	4.84
2270.0	4.45	4.36	4.78
2350.0	4.62	4.39	4.73
2430.0	4.67	4.35	4.61
2510.0	4.64	4.27	4.46
2590.0	4.52	4.11	4.29
2670.0	4.46	3.96	4.11
2750.0	4.40	3.79	3.89
2830.0	4.27	3.58	3.65
2910.0	4.07	3.38	3.43
2990.0	3.76	3.12	3.18
3070.0	3.49	2.84	2.89
3150.0	3.43	2.68	2.71
3230.0	3.57	2.71	2.69
3310.0	3.67	2.77	2.72
3390.0	3.66	2.79	2.71
3470.0	3.65	2.78	2.67
3530.0	3.79	2.82	2.65
3610.0	3.81	2.82	2.60
3670.0	3.63	2.69	2.47
3750.0	3.60	2.61	2.35
3810.0	3.58	2.52	2.23
3890.0	3.38	2.32	2.01
3950.0	3.23	2.19	1.86
4030.0	3.14	2.05	1.68
4090.0	3.12	1.98	1.57
4170.0	2.95	1.86	1.43
4230.0	2.72	1.73	1.31

IF (OUT) (MHz)	IF VSWR @LO=2800MHz (:1) @LO (dBm)		
	+4	+7	+10
10.0	2.39	2.01	1.75
70.0	2.26	1.92	1.65
130.0	2.29	1.94	1.68
190.0	2.30	1.94	1.66
250.0	2.41	2.04	1.75
310.0	2.35	2.00	1.71
350.0	2.40	2.03	1.73
410.0	2.46	2.10	1.80
450.0	2.53	2.16	1.84
510.0	2.48	2.14	1.85
550.0	2.53	2.20	1.90
610.0	2.55	2.23	1.95
650.0	2.54	2.23	1.97
710.0	2.51	2.25	2.01
750.0	2.49	2.25	2.03
810.0	2.38	2.18	2.00
850.0	2.35	2.17	2.01
910.0	2.26	2.14	2.04
950.0	2.23	2.14	2.07
1010.0	2.12	2.06	2.04
1050.0	2.13	2.11	2.11
1110.0	2.23	2.22	2.24
1150.0	2.32	2.34	2.39
1210.0	2.51	2.63	2.72
1250.0	2.62	2.80	2.92
1310.0	2.84	3.10	3.27
1350.0	2.94	3.30	3.47
1410.0	3.16	3.66	3.97
1450.0	3.14	3.73	4.11
1510.0	3.18	3.88	4.46
1550.0	3.07	3.79	4.42
1610.0	2.95	3.62	4.28
1650.0	2.81	3.45	4.09
1710.0	2.75	3.32	3.94
1750.0	2.59	3.10	3.67
1810.0	2.41	2.85	3.35
1850.0	2.26	2.67	3.13
1910.0	2.13	2.51	2.91
1950.0	2.00	2.35	2.73
2010.0	1.94	2.29	2.66

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IF/RF MICROWAVE COMPONENTS

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	15	16	4	24	3	43	33	46	38	49
1	-	22	0	37	19	43	40	45	49	59	49	59
2	60	64	45	56	45	63	60	75	51	76	64	81
3	65	78	75	73	62	77	71	83	77	80	85	83
4	75	81	85	87	89	92	80	89	85	92	99	86
5	73	92	92	94	86	83	89	90	89	89	87	87
6	97	79	83	83	95	82	86	96	85	88	95	89
7	111	80	88	92	89	92	84	86	98	93	88	84
8	103	80	84	81	90	84	79	95	90	83	83	89
9	100	76	100	86	83	93	91	89	84	100	86	111
10	95	69	74	79	84	91	87	79	91	90	83	90
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 2150 MHz; -14 dBm
LO IN: 2180 MHz; +7.00 dBm
IF OUT: 30 MHz; -21.11 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	5	26	14	33	15	57	46	61	48	63
1	-	22	0	37	19	45	42	45	52	62	53	65
2	60	52	36	44	36	54	51	66	41	67	58	75
3	65	64	56	52	41	58	52	67	73	59	75	75
4	75	86	70	80	59	63	59	69	73	81	82	94
5	73	76	80	84	82	75	66	80	77	83	92	77
6	97	94	81	88	88	88	77	77	78	87	86	90
7	111	91	99	99	95	94	94	92	83	91	89	99
8	103	92	111	100	91	100	101	94	86	88	99	104
9	100	84	97	96	84	95	98	103	99	93	92	100
10	95	79	88	91	96	92	91	100	92	97	91	89
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 2150 MHz; -4 dBm
LO IN: 2180 MHz; +7.00 dBm
IF OUT: 30 MHz; -11.11 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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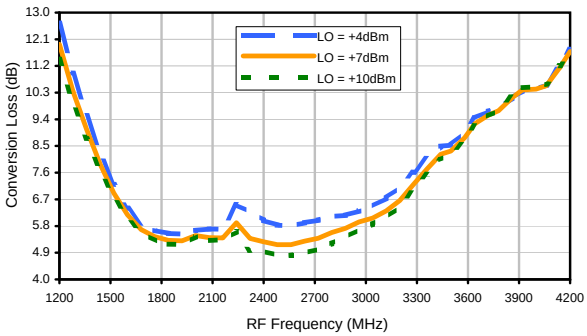
IF/RF MICROWAVE COMPONENTS

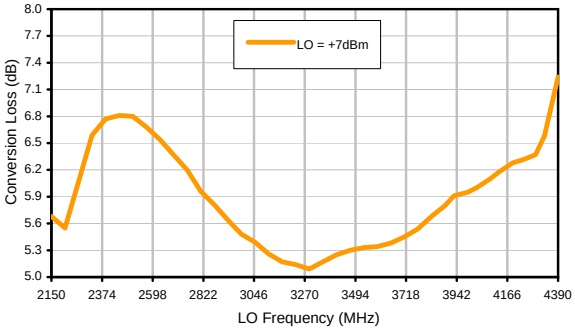
Frequency Mixer ADE-28

Typical Performance Curves

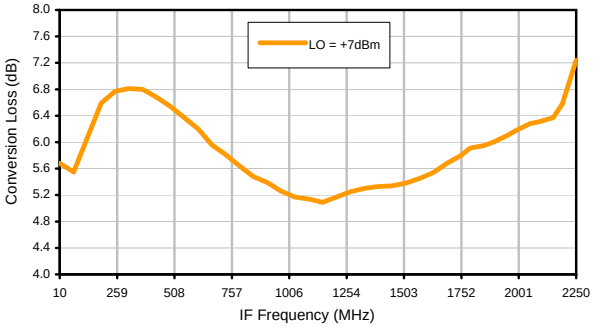
Conversion Loss @ IF=30MHz



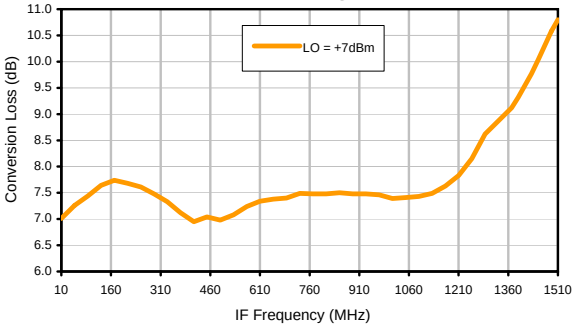
Conversion Loss vs. LO @ RF=2139.89MHz



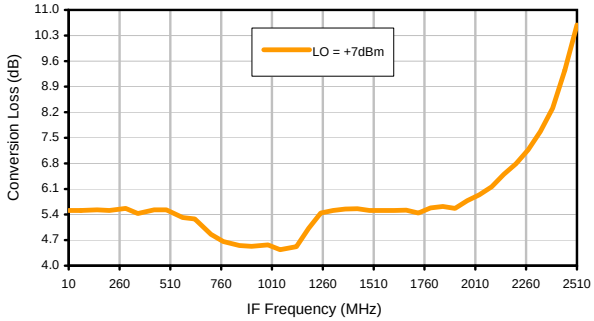
Conversion Loss vs. IF @ RF=2139.89MHz



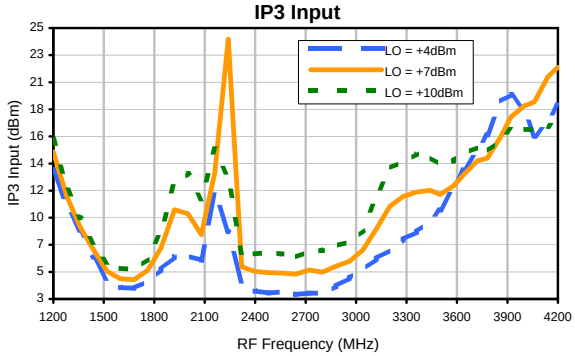
Conversion Loss vs. IF @ RF=1489.9MHz



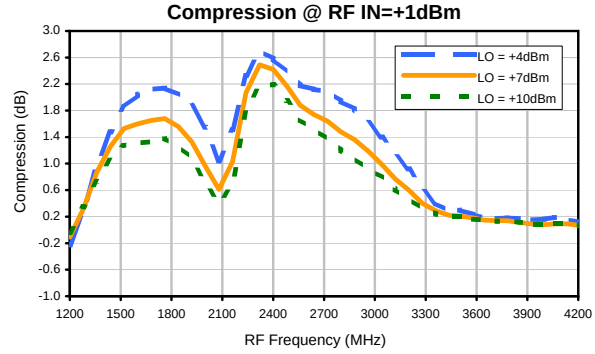
Conversion Loss vs. IF @ RF=2810.1MHz



IP3 Input



Compression @ RF IN=+1dBm



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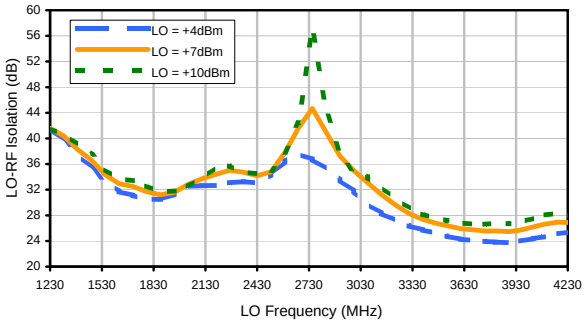
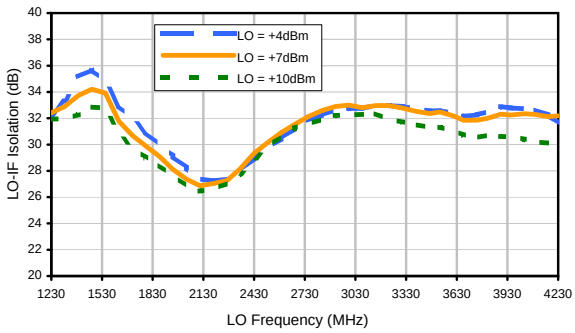
IF/RF MICROWAVE COMPONENTS

Typical Performance Curves

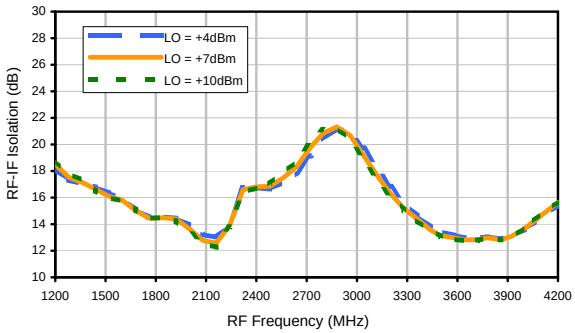
LO-RF Isolation



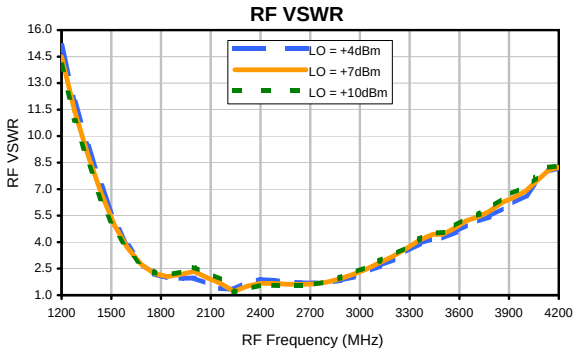
LO-IF Isolation



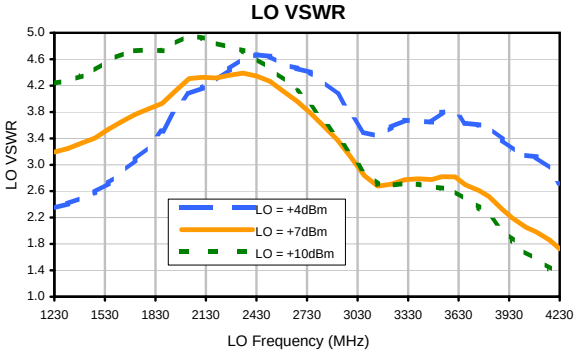
RF-IF Isolation



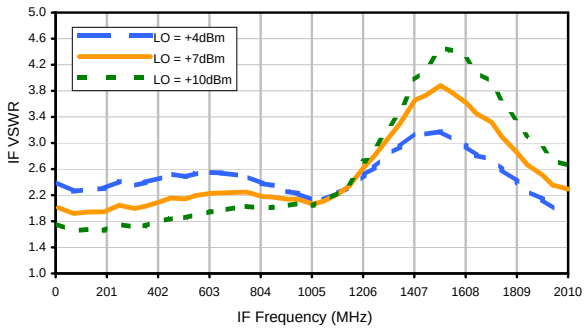
RF VSWR



LO VSWR



IF VSWR



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IF/RF MICROWAVE COMPONENTS

Frequency Mixer ADE-28

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	15	16	4	24	3	43	33	46	38	49
1	-	22	0	37	19	43	40	45	49	59	49	59
2	60	64	45	56	45	63	60	75	51	76	64	81
3	65	78	75	73	62	77	71	83	77	80	85	83
4	75	81	85	87	89	92	80	89	85	92	99	86
5	73	92	92	94	86	83	89	90	89	89	87	87
6	97	79	83	83	95	82	86	96	85	88	95	89
7	111	80	88	92	89	92	84	86	98	93	88	84
8	103	80	84	81	90	84	79	95	90	83	83	89
9	100	76	100	86	83	93	91	89	84	100	86	111
10	95	69	74	79	84	91	87	79	91	90	83	90
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 2150 MHz; -14 dBm
LO IN: 2180 MHz; +7.00 dBm
IF OUT: 30 MHz; -21.11 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	5	26	14	33	15	57	46	61	48	63
1	-	22	0	37	19	45	42	45	52	62	53	65
2	60	52	36	44	36	54	51	66	41	67	58	75
3	65	64	56	52	41	58	52	67	73	59	75	75
4	75	86	70	80	59	63	59	69	73	81	82	94
5	73	76	80	84	82	75	66	80	77	83	92	77
6	97	94	81	88	88	88	77	77	78	87	86	90
7	111	91	99	99	95	94	94	92	83	91	89	99
8	103	92	111	100	91	100	101	94	86	88	99	104
9	100	84	97	96	84	95	98	103	99	93	92	100
10	95	79	88	91	96	92	91	100	92	97	91	89
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 2150 MHz; -4 dBm
LO IN: 2180 MHz; +7.00 dBm
IF OUT: 30 MHz; -11.11 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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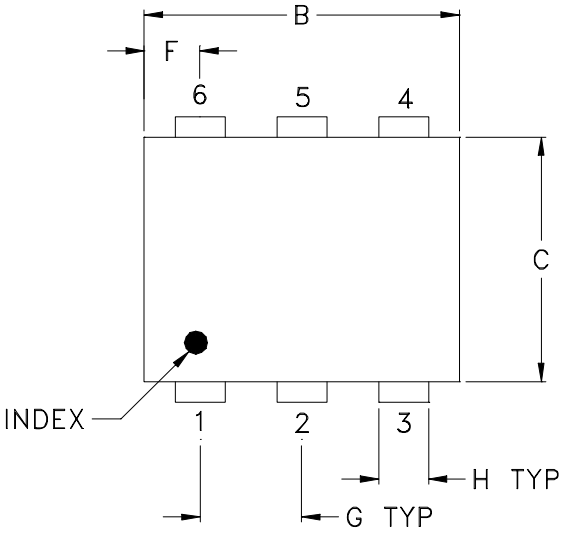
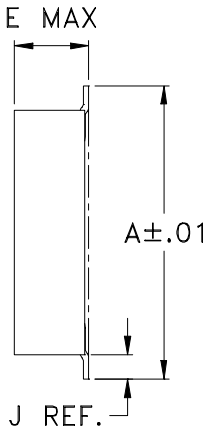
IF/RF MICROWAVE COMPONENTS

Case Style CD

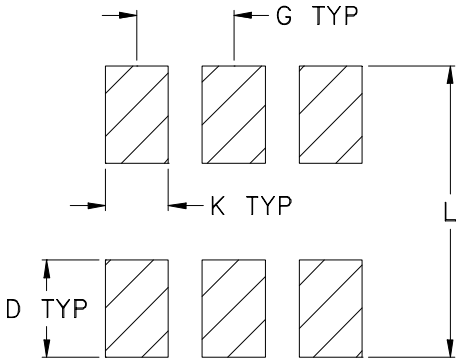
CD541
CD542
CD636
CD637

Outline Dimensions





PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT, GRAM
CD541	.272 (6.91)	.310 (7.87)	.220 (5.58)	.100 (2.54)	.082 (2.08)	.055 (1.40)	.100 (2.54)	.030 (0.76)	.026 (0.66)	.065 (1.65)	.300 (7.62)	.15
CD542					.112 (2.84)							.20
CD636					.162 (4.11)							.25
CD637					.206 (5.23)							.40

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

Notes:

1. Case material: Plastic.
2. 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.

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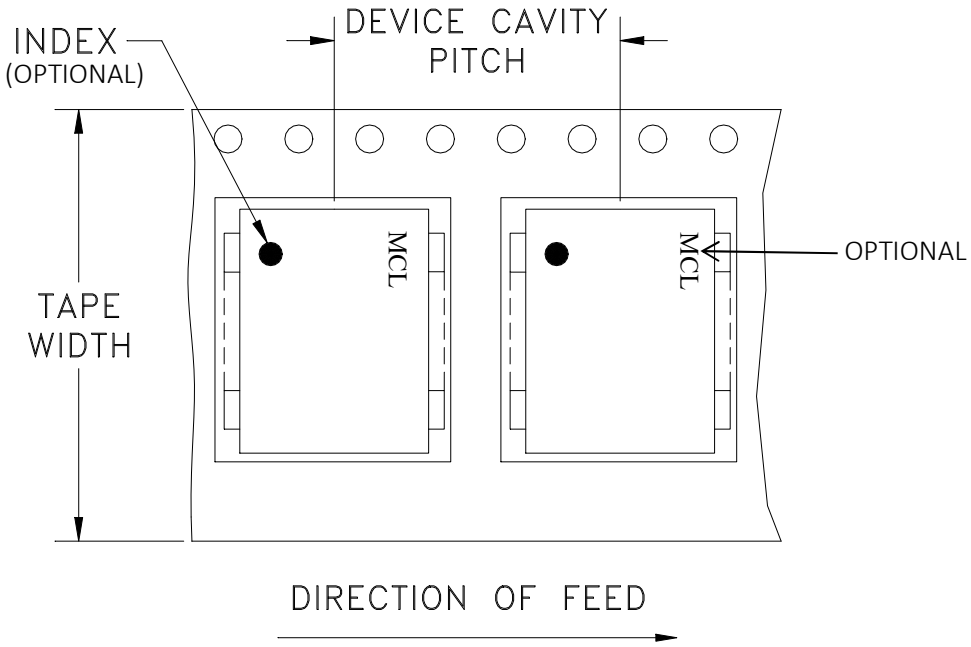
Tape & Reel Packaging TR-F34

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
16	12	7	Small quantity standard (see note)	20
				50
				100
				200
		13	Standard	500
				1000

Note: Availability of small reel quantity varies by model.
Refer to pricing and availability on individual model dashboard.

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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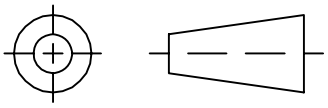
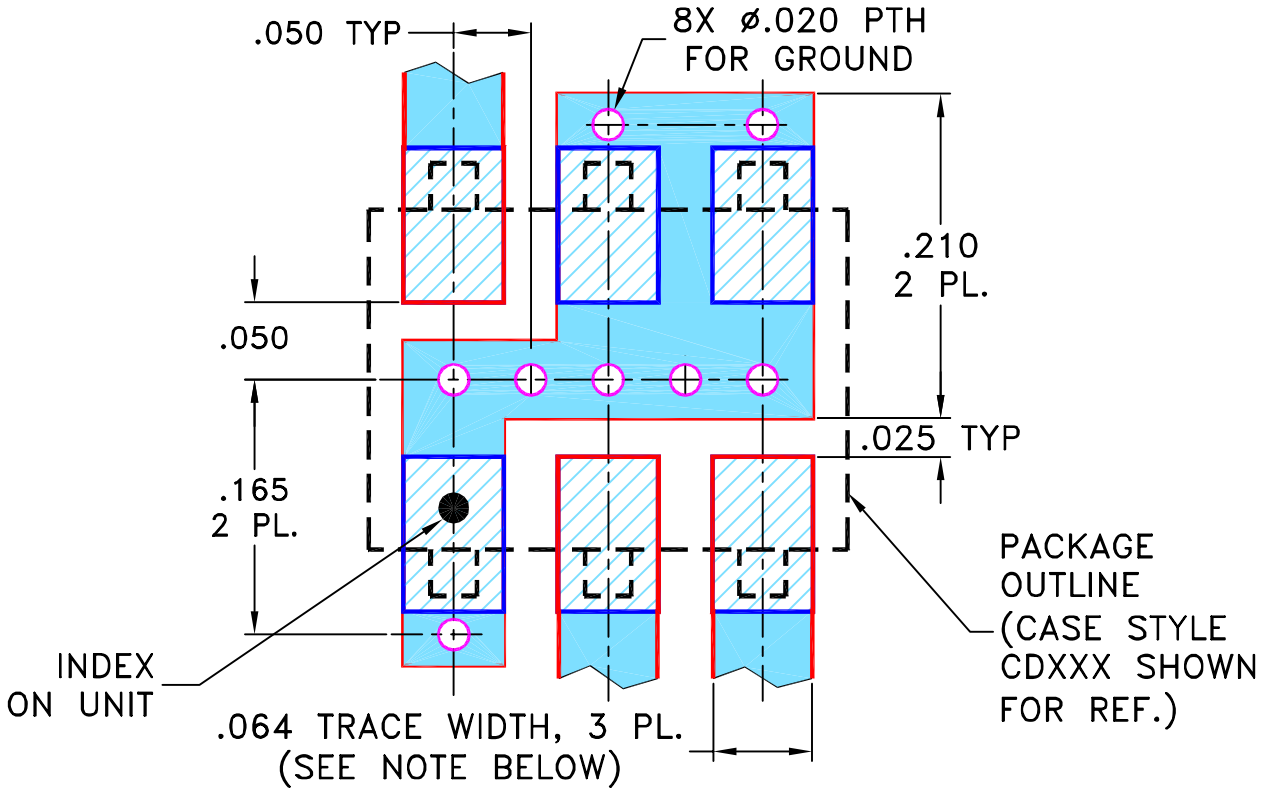
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
A	M101143	ADDED "gk" PIN CONNECTION,	10/10/05	MMG	DJ
		TT100 CASE STYLE & NOTE 2			
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 ±			

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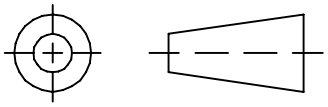
Brooklyn NY 11235

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

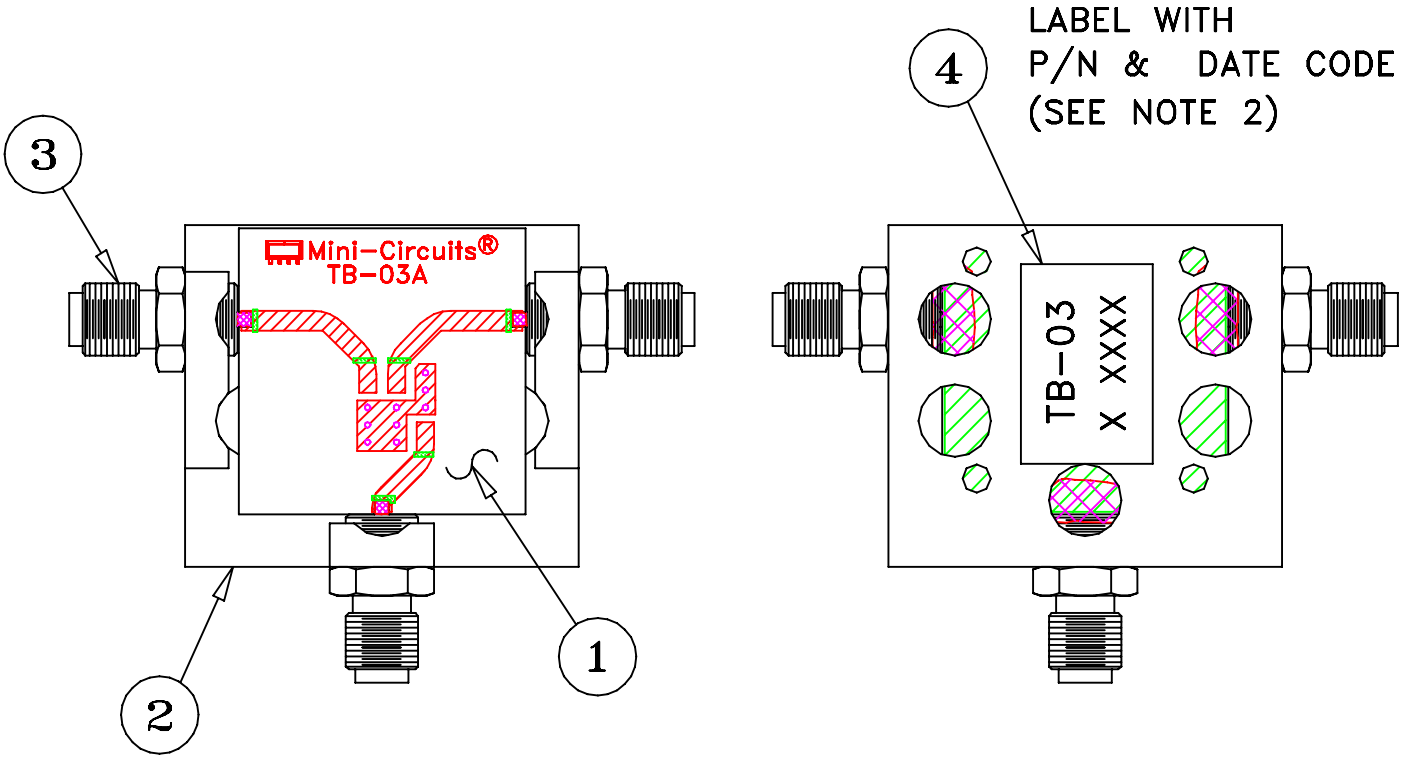
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-052	C

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 ±			

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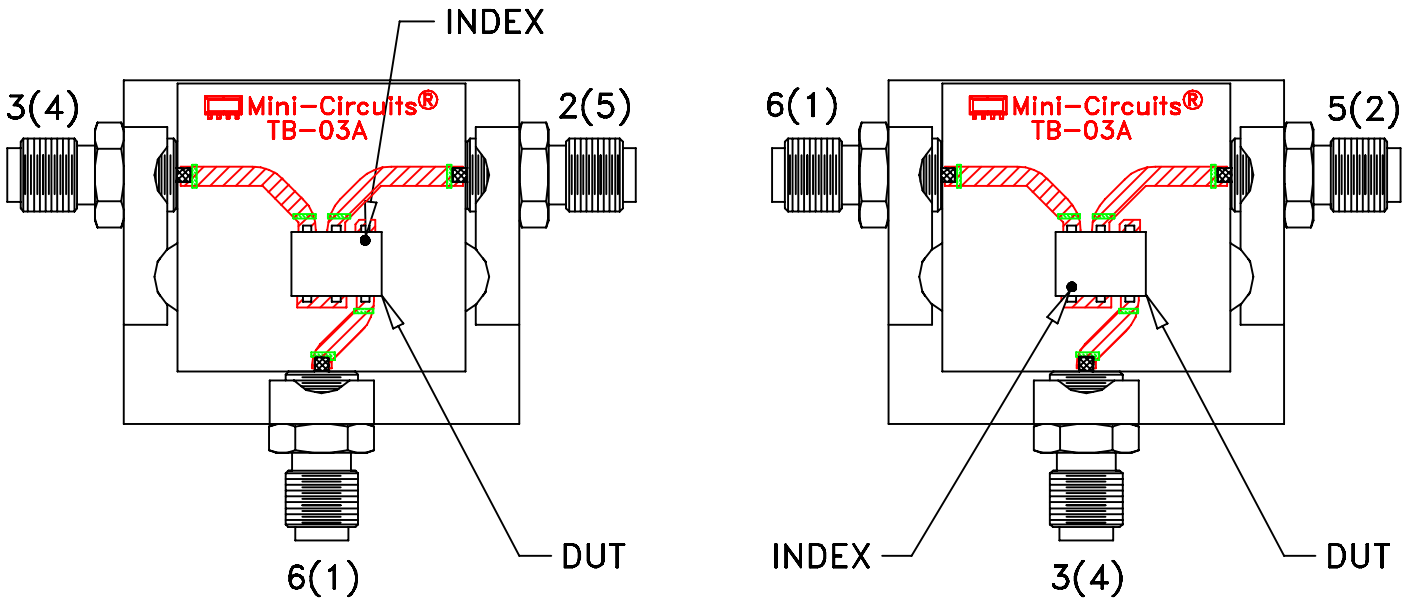
TB,ADE,CD542/636,06MX01,50

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

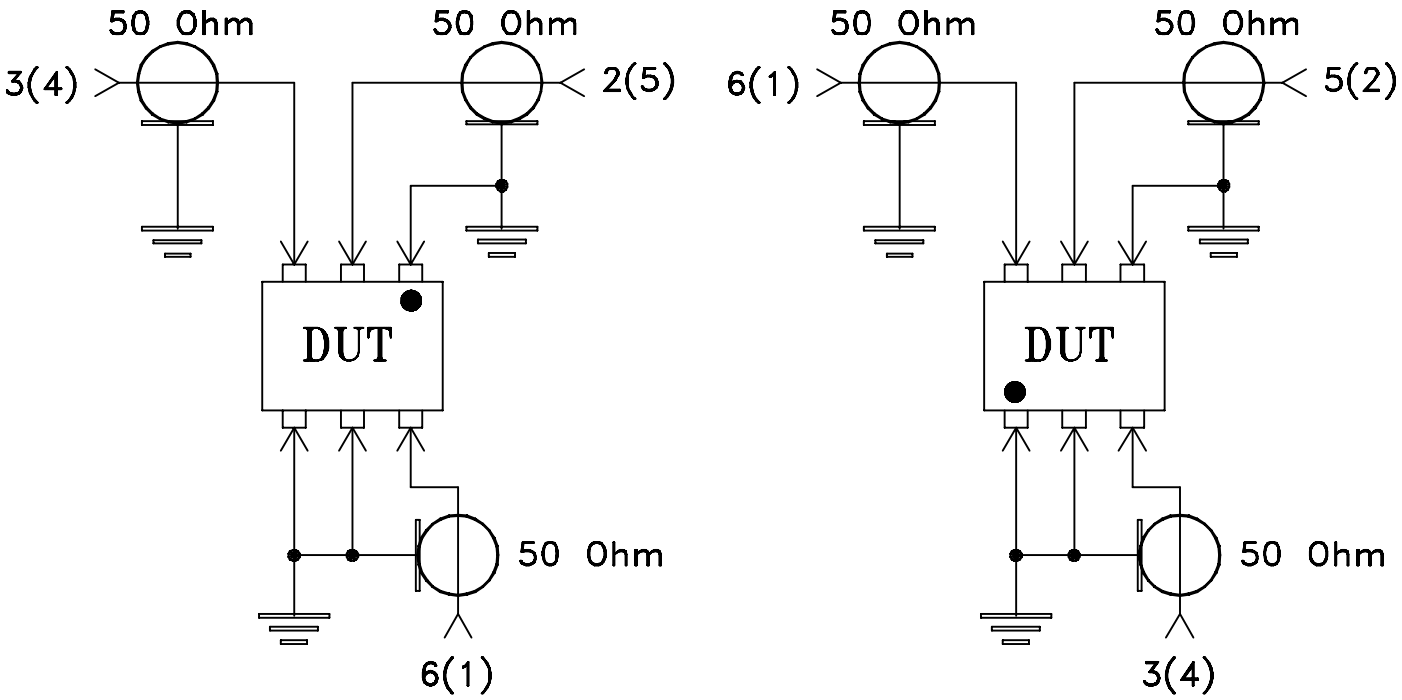
FILE:	SCALE:	SHEET:
WTB-03	1.5:1	1 OF 2

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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