

Frequency Mixer

ALY-ED5505/1

Level 13 (LO Power +13 dBm)

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability. At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.



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CASE STYLE : CB518

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (f _L to f _U)	3300		6900	MHz
	RF (f _L to f _U)	3300		6900	MHz
	IF	10		1005	MHz
Conversion Loss			6.4		dB
LO-RF Isolation			24		dB
LO-IF Isolation			19		dB

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

PIN CONNECTIONS	
LO	1
RF	6
IF	10
GROUND	2, 3, 4, 5, 7, 8, 9

Frequency Mixer

ALY-ED5505/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+10	+13	+16
1500.1	1530.1	16.08	8.74	7.24
1660.1	1690.1	9.79	7.33	6.76
1820.1	1850.1	7.92	7.07	6.76
1980.1	2010.1	7.60	6.77	6.50
2140.1	2170.1	7.70	6.53	6.23
2300.1	2330.1	7.85	6.54	6.36
2460.1	2490.1	7.52	6.80	6.63
2620.1	2650.1	7.69	7.07	6.93
2780.1	2810.1	8.80	7.90	7.73
2940.1	2970.1	9.62	8.82	8.50
3100.1	3130.1	9.89	8.98	8.56
3260.1	3290.1	10.03	9.20	8.73
3420.1	3450.1	9.19	8.78	8.51
3580.1	3610.1	8.33	8.02	7.87
3740.1	3770.1	8.16	7.85	7.71
3900.1	3930.1	7.74	7.48	7.36
4060.1	4090.1	7.49	7.19	7.03
4220.1	4250.1	7.45	7.13	6.94
4380.1	4410.1	7.19	6.91	6.70
4560.1	4590.1	6.94	6.66	6.49
4720.1	4750.1	7.48	7.22	7.05
4900.1	4930.1	7.29	7.01	6.84
5060.1	5090.1	6.71	6.44	6.28
5240.1	5270.1	6.31	5.93	5.74
5400.1	5430.1	6.51	6.13	5.95
5580.1	5610.1	6.44	5.94	5.68
5740.1	5770.1	6.32	5.70	5.40
5920.1	5950.1	6.47	5.72	5.43
6080.1	6110.1	6.34	5.63	5.43
6260.1	6290.1	6.28	5.62	5.54
6420.1	6450.1	6.26	5.75	5.74
6600.1	6630.1	6.21	6.02	6.08
6760.1	6790.1	6.40	6.28	6.33
6940.1	6970.1	6.65	6.52	6.53
7100.1	7130.1	7.04	6.89	6.87
7280.1	7310.1	7.59	7.36	7.30
7440.1	7470.1	8.00	7.71	7.61
7620.1	7650.1	8.56	7.98	7.83
7780.1	7810.1	9.11	8.21	7.89
7960.1	7990.1	10.42	8.89	8.24

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+10	+13	+16
1500.1	1530.1	4.59	18.70	18.47
1660.1	1690.1	12.82	16.53	18.43
1820.1	1850.1	15.98	15.83	17.96
1980.1	2010.1	17.62	16.21	16.99
2140.1	2170.1	17.89	16.45	17.24
2300.1	2330.1	14.09	18.95	19.59
2460.1	2490.1	13.94	20.24	20.18
2620.1	2650.1	14.16	19.87	21.16
2780.1	2810.1	12.79	19.79	21.86
2940.1	2970.1	14.04	22.35	24.81
3100.1	3130.1	24.73	18.50	19.58
3260.1	3290.1	13.08	15.55	17.18
3420.1	3450.1	12.96	14.25	15.40
3580.1	3610.1	13.92	14.97	15.49
3740.1	3770.1	14.83	16.33	16.81
3900.1	3930.1	15.50	17.54	18.74
4060.1	4090.1	15.86	17.18	18.94
4220.1	4250.1	15.89	16.62	18.35
4380.1	4410.1	16.08	16.12	17.23
4560.1	4590.1	16.66	16.83	17.56
4720.1	4750.1	16.59	15.94	16.29
4900.1	4930.1	14.22	14.17	14.58
5060.1	5090.1	13.00	13.53	14.03
5240.1	5270.1	12.13	13.18	14.04
5400.1	5430.1	12.66	13.96	14.60
5580.1	5610.1	10.61	11.96	13.01
5740.1	5770.1	9.32	11.61	13.02
5920.1	5950.1	8.80	12.30	14.63
6080.1	6110.1	9.08	12.87	15.21
6260.1	6290.1	10.10	14.25	16.36
6420.1	6450.1	11.72	15.42	17.30
6600.1	6630.1	14.20	16.95	18.28
6760.1	6790.1	15.86	18.02	18.82
6940.1	6970.1	16.67	18.52	19.13
7100.1	7130.1	16.94	18.94	19.94
7280.1	7310.1	16.81	18.91	20.07
7440.1	7470.1	16.79	18.28	19.62
7620.1	7650.1	16.85	17.53	19.00
7780.1	7810.1	16.20	16.53	18.25
7960.1	7990.1	14.68	15.43	17.24

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+9dBm (dB)		
		@LO (dBm)		
		+10	+13	+16
1500.1	1530.1	-2.61	1.34	1.16
1660.1	1690.1	1.22	1.98	1.60
1820.1	1850.1	2.45	1.90	1.46
1980.1	2010.1	2.47	2.01	1.61
2140.1	2170.1	2.38	2.19	1.81
2300.1	2330.1	2.73	2.09	1.62
2460.1	2490.1	2.92	1.87	1.54
2620.1	2650.1	2.63	1.71	1.42
2780.1	2810.1	1.88	1.13	0.93
2940.1	2970.1	0.61	0.32	0.33
3100.1	3130.1	-0.24	-0.05	0.12
3260.1	3290.1	-0.61	-0.51	-0.23
3420.1	3450.1	0.01	-0.34	-0.25
3580.1	3610.1	0.61	0.07	0.04
3740.1	3770.1	0.49	0.05	0.05
3900.1	3930.1	0.62	0.21	0.16
4060.1	4090.1	0.77	0.36	0.22
4220.1	4250.1	0.65	0.31	0.21
4380.1	4410.1	0.74	0.42	0.30
4560.1	4590.1	1.01	0.64	0.45
4720.1	4750.1	1.00	0.74	0.61
4900.1	4930.1	1.02	0.71	0.62
5060.1	5090.1	1.15	0.82	0.68
5240.1	5270.1	1.43	0.92	0.75
5400.1	5430.1	1.39	0.96	0.75
5580.1	5610.1	1.74	1.24	1.07
5740.1	5770.1	1.78	1.19	1.09
5920.1	5950.1	1.67	1.04	1.05
6080.1	6110.1	1.79	1.19	1.32
6260.1	6290.1	1.81	1.15	1.28
6420.1	6450.1	1.90	1.19	1.30
6600.1	6630.1	1.52	1.09	1.20
6760.1	6790.1	1.50	1.02	1.05
6940.1	6970.1	1.38	1.06	1.05
7100.1	7130.1	1.26	1.00	1.01
7280.1	7310.1	1.12	0.85	0.82
7440.1	7470.1	1.12	0.78	0.78
7620.1	7650.1	1.18	0.77	0.69
7780.1	7810.1	1.29	0.81	0.79
7960.1	7990.1	0.86	0.63	0.72

REV. X2

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=5100MHz (dB)
		@LO (dBm)
		+13
2170.0	2930.0	10.34
2060.2	3039.8	9.63
1950.3	3149.7	8.89
1840.5	3259.5	8.14
1730.7	3369.3	7.76
1620.8	3479.2	7.42
1511.0	3589.0	7.08
1401.2	3698.8	6.53
1291.4	3808.6	6.10
1181.5	3918.5	5.83
1071.7	4028.3	5.74
961.9	4138.1	6.02
852.0	4248.0	6.26
742.2	4357.8	6.33
632.4	4467.6	6.45
522.5	4577.5	6.41
412.7	4687.3	6.24
302.9	4797.1	6.00
193.1	4906.9	5.95
83.2	5016.8	6.22
31.9	5131.9	6.27
163.1	5263.1	6.17
294.2	5394.2	6.37
425.4	5525.4	6.50
556.6	5656.6	7.32
687.8	5787.8	8.24
819.0	5919.0	8.32
950.2	6050.2	8.01
1081.4	6181.4	7.62
1212.5	6312.5	7.22
1343.7	6443.7	6.86
1474.9	6574.9	6.53
1606.1	6706.1	6.35
1737.3	6837.3	6.09
1868.5	6968.5	5.84
2021.5	7121.5	6.14
2152.7	7252.7	7.57
2305.8	7405.8	8.97
2436.9	7536.9	9.33
2590.0	7690.0	11.11

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=3289.8999MHz (dB)
		@LO (dBm)
		+13
10.1	3300.0	9.26
70.1	3360.0	8.97
130.1	3420.0	9.01
190.1	3480.0	8.93
250.1	3540.0	8.69
310.1	3600.0	8.49
370.1	3660.0	8.19
430.1	3720.0	7.91
490.1	3780.0	7.73
550.1	3840.0	7.43
610.1	3900.0	7.19
670.1	3960.0	6.96
730.1	4020.0	6.73
790.1	4080.0	6.69
850.1	4140.0	6.60
910.1	4200.0	6.71
970.1	4260.0	6.92
1030.1	4320.0	7.22
1090.1	4380.0	7.62
1150.1	4440.0	7.97
1210.1	4500.0	8.32
1270.1	4560.0	8.18
1330.1	4620.0	8.46
1390.1	4680.0	9.08
1450.1	4740.0	9.28
1510.1	4800.0	9.84
1570.1	4860.0	9.92
1630.1	4920.0	9.87
1710.1	5000.0	9.73
1770.1	5060.0	9.52
1850.1	5140.0	8.74
1910.1	5200.0	8.62
1990.1	5280.0	8.64
2050.1	5340.0	8.77
2130.1	5420.0	8.69
2190.1	5480.0	9.04
2270.1	5560.0	9.23
2330.1	5620.0	9.47
2410.1	5700.0	10.08
2470.1	5760.0	10.63

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=6910.1001MHz (dB)
		@LO (dBm)
		+13
1950.1	4960.0	10.33
1910.1	5000.0	10.07
1870.1	5040.0	9.98
1810.1	5100.0	9.75
1770.1	5140.0	9.70
1710.1	5200.0	9.43
1670.1	5240.0	9.35
1610.1	5300.0	9.34
1570.1	5340.0	9.23
1510.1	5400.0	9.14
1470.1	5440.0	9.04
1410.1	5500.0	8.94
1370.1	5540.0	8.82
1310.1	5600.0	8.84
1270.1	5640.0	8.70
1210.1	5700.0	8.64
1170.1	5740.0	8.62
1110.1	5800.0	8.63
1070.1	5840.0	8.70
1010.1	5900.0	8.62
970.1	5940.0	8.52
910.1	6000.0	8.45
870.1	6040.0	8.47
810.1	6100.0	8.52
770.1	6140.0	8.51
710.1	6200.0	8.52
670.1	6240.0	8.45
610.1	6300.0	8.43
570.1	6340.0	8.36
510.1	6400.0	8.20
470.1	6440.0	8.09
410.1	6500.0	7.87
370.1	6540.0	7.69
310.1	6600.0	7.38
270.1	6640.0	7.19
210.1	6700.0	6.93
170.1	6740.0	6.77
110.1	6800.0	6.62
70.1	6840.0	6.59
10.1	6900.0	6.70

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+10	+13	+16	+10	+13	+16
1530.1	36.22	46.51	45.21	9.68	11.30	13.44
1690.1	43.63	37.97	38.34	9.78	11.29	12.93
1850.1	34.42	32.58	31.32	10.30	11.55	12.23
2010.1	35.17	34.55	31.23	11.54	12.42	12.27
2170.1	35.64	34.19	31.95	13.09	13.02	12.52
2330.1	38.34	36.85	34.01	15.60	14.75	13.59
2490.1	40.81	40.71	35.84	19.79	17.17	14.96
2650.1	43.40	45.82	40.43	23.87	19.30	16.79
2810.1	35.45	37.54	38.55	24.58	20.55	19.06
2970.1	30.08	31.79	33.27	21.56	21.10	20.99
3130.1	27.62	29.78	31.87	19.50	20.73	22.18
3290.1	27.59	29.31	30.95	17.95	19.84	21.86
3450.1	28.85	30.15	31.15	17.53	19.32	20.94
3610.1	29.46	30.09	30.39	17.23	18.52	19.32
3770.1	28.55	28.84	29.05	17.32	17.96	18.14
3930.1	27.54	27.59	27.54	17.53	17.43	16.90
4090.1	26.64	26.67	26.99	17.49	16.87	16.32
4250.1	25.71	25.72	25.69	17.14	16.17	15.38
4410.1	24.83	25.37	25.50	16.40	15.71	15.19
4590.1	23.84	24.61	25.08	15.57	15.20	14.96
4750.1	23.39	24.41	24.83	14.75	14.74	14.78
4930.1	23.06	24.12	24.70	14.29	14.51	14.81
5090.1	22.51	23.71	24.33	13.60	14.47	15.05
5270.1	22.44	23.00	22.86	13.12	14.13	15.07
5430.1	22.26	23.08	22.88	12.92	14.31	15.34
5610.1	22.06	22.43	22.03	12.73	14.32	15.66
5770.1	21.53	21.11	20.38	12.81	14.45	16.00
5950.1	21.31	20.34	19.37	13.18	14.76	16.41
6110.1	20.97	19.76	18.67	13.78	15.22	16.52
6290.1	20.47	18.94	17.83	14.83	15.52	15.52
6450.1	19.26	17.94	17.22	15.85	15.19	14.06
6630.1	17.52	17.25	16.64	16.29	14.40	12.24
6790.1	16.54	16.62	16.90	15.93	13.22	11.73
6970.1	15.69	16.50	17.08	13.92	12.19	11.00
7130.1	15.42	16.59	17.34	12.43	11.49	10.50
7310.1	15.23	16.52	17.77	11.34	10.68	10.42
7470.1	14.98	16.50	17.89	10.52	10.48	10.47
7650.1	15.00	16.54	18.00	10.11	10.39	10.53
7810.1	14.90	16.35	17.92	10.02	10.40	10.81
7990.1	14.64	15.99	17.48	10.07	10.68	11.20

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+10	+13	+16
1500.1	1530.1	21.57	17.76	20.00
1660.1	1690.1	14.52	14.69	15.92
1820.1	1850.1	11.52	12.42	13.18
1980.1	2010.1	11.27	11.82	12.23
2140.1	2170.1	11.92	12.66	12.88
2300.1	2330.1	13.02	13.78	13.77
2460.1	2490.1	14.55	14.76	14.61
2620.1	2650.1	15.43	15.55	15.40
2780.1	2810.1	15.82	16.17	16.07
2940.1	2970.1	15.10	15.95	16.16
3100.1	3130.1	14.65	15.85	16.38
3260.1	3290.1	14.93	16.09	16.85
3420.1	3450.1	16.59	17.35	17.98
3580.1	3610.1	18.44	19.03	19.47
3740.1	3770.1	20.11	20.70	21.06
3900.1	3930.1	21.89	22.47	22.85
4060.1	4090.1	23.47	24.08	24.49
4220.1	4250.1	25.13	25.90	26.41
4380.1	4410.1	26.77	27.40	28.13
4560.1	4590.1	28.80	29.44	29.95
4720.1	4750.1	29.07	29.57	30.12
4900.1	4930.1	29.81	30.29	30.91
5060.1	5090.1	31.75	32.13	32.50
5240.1	5270.1	33.95	34.83	35.73
5400.1	5430.1	36.12	37.39	38.75
5580.1	5610.1	35.65	36.87	38.34
5740.1	5770.1	36.37	37.94	39.53
5920.1	5950.1	37.13	38.44	40.07
6080.1	6110.1	40.51	41.59	42.90
6260.1	6290.1	42.39	37.79	37.08
6420.1	6450.1	37.70	33.98	33.38
6600.1	6630.1	32.78	31.66	31.44
6760.1	6790.1	29.94	29.76	29.90
6940.1	6970.1	28.72	28.98	29.13
7100.1	7130.1	27.52	28.00	28.27
7280.1	7310.1	26.07	26.71	27.09
7440.1	7470.1	25.22	25.98	26.42
7620.1	7650.1	24.06	25.16	25.74
7780.1	7810.1	22.99	24.17	24.94
7960.1	7990.1	21.74	22.65	23.77

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=6900MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+10	+13	+16		+10	+13	+16		+10	+13	+16
1500.1	1530.1	8.43	5.07	4.15	1530.1	13.60	8.43	5.02	10.0	2.11	1.80	1.61
1660.1	1690.1	4.25	3.45	3.23	1690.1	10.07	4.61	3.31	70.0	2.20	1.87	1.67
1820.1	1850.1	2.78	2.58	2.58	1850.1	5.85	2.90	2.59	130.0	2.29	1.96	1.76
1980.1	2010.1	2.45	2.33	2.27	2010.1	3.76	2.30	2.25	190.0	2.43	2.13	1.93
2140.1	2170.1	2.48	2.36	2.26	2170.1	3.65	2.36	2.23	250.0	2.66	2.34	2.11
2300.1	2330.1	2.52	2.37	2.26	2330.1	4.45	2.29	2.03	310.0	2.91	2.48	2.26
2460.1	2490.1	2.58	2.47	2.34	2490.1	4.07	2.12	2.01	370.0	3.21	2.86	2.59
2620.1	2650.1	2.60	2.52	2.42	2650.1	3.79	2.15	2.04	430.0	3.49	3.09	2.80
2780.1	2810.1	2.51	2.45	2.37	2810.1	3.82	2.17	2.16	490.0	3.68	3.28	2.99
2940.1	2970.1	2.24	2.29	2.27	2970.1	3.29	2.15	2.33	550.0	4.18	3.71	3.38
3100.1	3130.1	2.18	2.24	2.25	3130.1	2.91	2.18	2.48	610.0	4.35	3.86	3.50
3260.1	3290.1	2.57	2.44	2.37	3290.1	2.72	2.16	2.59	670.0	4.66	4.16	3.79
3420.1	3450.1	3.06	2.83	2.66	3450.1	2.37	2.26	2.87	730.0	4.92	4.40	4.01
3580.1	3610.1	3.37	3.08	2.89	3610.1	2.16	2.21	2.82	790.0	4.89	4.40	4.03
3740.1	3770.1	3.46	3.13	2.95	3770.1	1.89	2.24	2.98	850.0	5.10	4.60	4.25
3900.1	3930.1	3.33	2.97	2.74	3930.1	1.72	2.27	3.07	910.0	5.07	4.57	4.23
4060.1	4090.1	3.50	3.11	2.83	4090.1	1.68	2.30	3.09	970.0	5.03	4.56	4.22
4220.1	4250.1	3.34	2.94	2.65	4250.1	1.72	2.44	3.31	1030.0	4.98	4.54	4.22
4380.1	4410.1	3.15	2.82	2.51	4410.1	1.87	2.65	3.56	1090.0	4.88	4.43	4.10
4560.1	4590.1	2.77	2.49	2.28	4590.1	1.99	2.73	3.60	1150.0	4.70	4.30	4.01
4720.1	4750.1	2.96	2.68	2.45	4750.1	2.33	3.05	3.91	1210.0	4.70	4.31	4.01
4900.1	4930.1	3.13	2.82	2.52	4930.1	2.67	3.30	4.16	1270.0	4.40	4.01	3.73
5060.1	5090.1	2.75	2.50	2.26	5090.1	2.95	3.30	3.99	1330.0	4.22	3.85	3.58
5240.1	5270.1	2.42	2.11	1.89	5270.1	3.69	3.66	4.08	1390.0	4.01	3.69	3.44
5400.1	5430.1	2.23	2.02	1.86	5430.1	4.05	3.66	3.97	1450.0	3.86	3.50	3.25
5580.1	5610.1	2.03	1.78	1.60	5610.1	4.98	3.89	3.90	1510.0	3.57	3.24	3.00
5740.1	5770.1	1.68	1.47	1.40	5770.1	5.28	3.65	3.39	1570.0	3.48	3.16	2.93
5920.1	5950.1	1.40	1.26	1.31	5950.1	5.81	3.47	2.97	1630.0	3.15	2.84	2.63
6080.1	6110.1	1.11	1.21	1.38	6110.1	5.70	3.18	2.48	1690.0	2.99	2.71	2.51
6260.1	6290.1	1.19	1.42	1.59	6290.1	5.54	2.85	1.96	1750.0	2.81	2.54	2.35
6420.1	6450.1	1.48	1.67	1.81	6450.1	4.88	2.47	1.58	1810.0	2.58	2.34	2.18
6600.1	6630.1	1.89	2.03	2.16	6630.1	3.47	1.98	1.41	1870.0	2.44	2.23	2.10
6760.1	6790.1	2.13	2.23	2.32	6790.1	2.72	1.82	1.60	1910.0	2.32	2.14	2.04
6940.1	6970.1	2.63	2.67	2.72	6970.1	1.94	1.75	1.94	1970.0	2.30	2.17	2.11
7100.1	7130.1	3.11	3.14	3.17	7130.1	1.69	1.94	2.32	2010.0	2.29	2.20	2.18
7280.1	7310.1	3.43	3.40	3.40	7310.1	1.67	2.12	2.62	2070.0	2.45	2.42	2.44
7440.1	7470.1	3.86	3.70	3.66	7470.1	1.99	2.52	3.04	2110.0	2.59	2.61	2.67
7620.1	7650.1	4.25	3.86	3.76	7650.1	2.38	2.75	3.24	2170.0	2.94	3.04	3.15
7780.1	7810.1	4.62	3.95	3.73	7810.1	2.86	3.17	3.59	2210.0	3.26	3.41	3.54
7960.1	7990.1	5.16	4.24	3.72	7990.1	3.40	3.59	3.80	2270.0	3.88	4.09	4.29

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+11	20	7	40	---	---	---	---	---	---
1	-	26	+0	37	23	52	59	---	---	---	---	---
2	76	52	49	44	50	54	45	55	---	---	---	---
3	>90	77	63	>78	64	75	70	76	>78	---	---	---
4	>90	>78	>78	>78	>78	>78	>78	>78	>78	>78	---	---
5	---	---	>78	>78	>78	>78	>78	>78	>78	>78	>78	---
6	---	---	---	>78	>78	>78	>78	>78	>78	>78	>78	>78
7	---	---	---	---	>78	>78	>78	>78	>78	>78	>78	>78
8	---	---	---	---	---	>78	>78	>78	>78	>78	>78	>78
9	---	---	---	---	---	---	>78	>78	>78	>78	>78	>78
10	---	---	---	---	---	---	---	>78	>78	>78	>78	>78
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 5100 MHz; -6.00 dBm.
LO IN: 5130 MHz; +13.00 dBm
IF OUT: 30 MHz; -11.95 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+1	29	19	51	---	---	---	---	---	---
1	-	26	+0	39	23	50	60	---	---	---	---	---
2	56	44	40	32	42	51	40	54	---	---	---	---
3	80	58	43	60	39	56	51	63	63	---	---	---
4	>90	65	63	56	72	59	69	59	64	66	---	---
5	---	---	77	81	79	85	62	78	67	75	66	---
6	---	---	---	81	78	71	77	80	72	82	66	85
7	---	---	---	---	>88	>88	82	>88	80	87	76	75
8	---	---	---	---	---	>88	>88	>88	>88	82	84	86
9	---	---	---	---	---	---	>88	>88	>88	>88	84	>88
10	---	---	---	---	---	---	---	>88	>88	>88	>88	>88
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

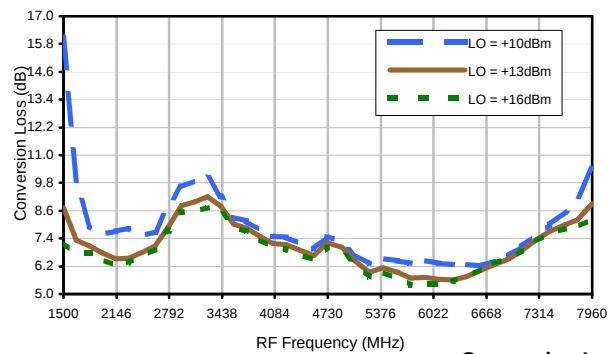
LO HARMONICS ORDER

Test conditions: RF IN: 5100 MHz; 4.00 dBm.
LO IN: 5130 MHz; +13.00 dBm
IF OUT: 30 MHz; -2.04 dBm

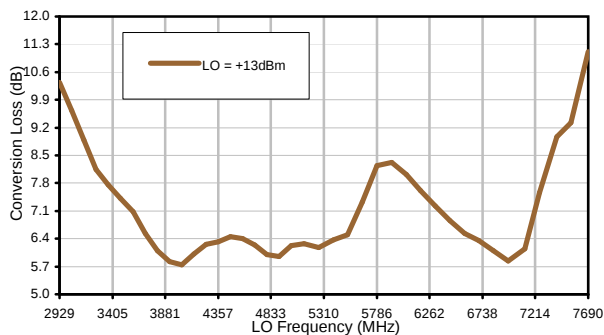
- Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Typical Performance Curves

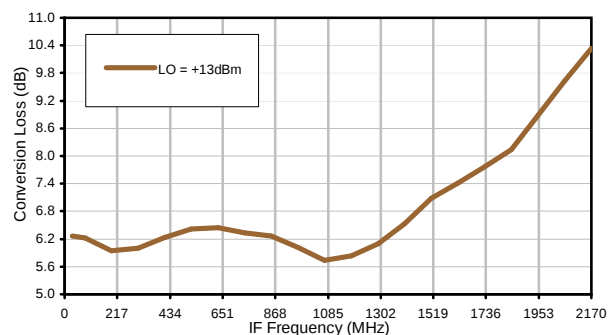
Conversion Loss @ IF=30MHz



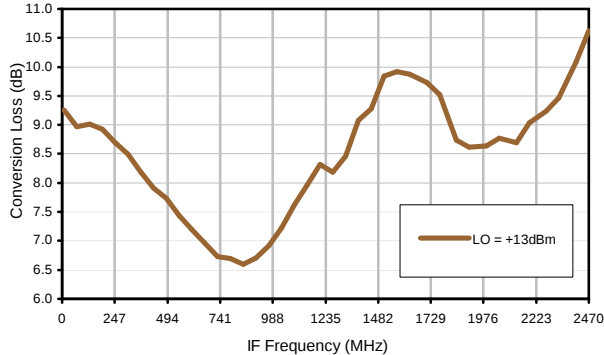
Conversion Loss vs. LO @ RF=5100MHz



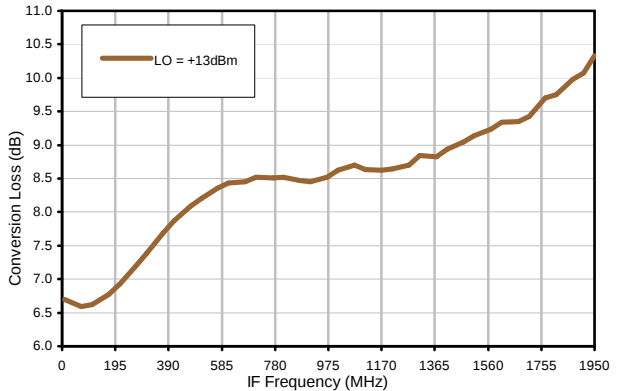
Conversion Loss vs. IF @ RF=5100MHz



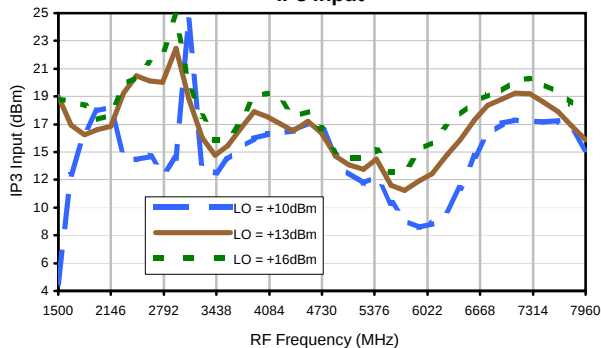
Conversion Loss vs. IF @ RF=3289.8999MHz



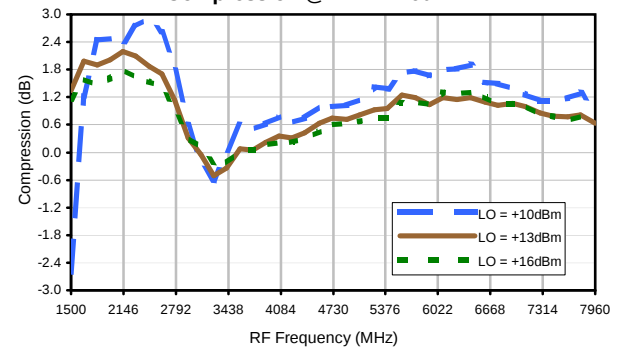
Conversion Loss vs. IF @ RF=6910.1001MHz



IP3 Input

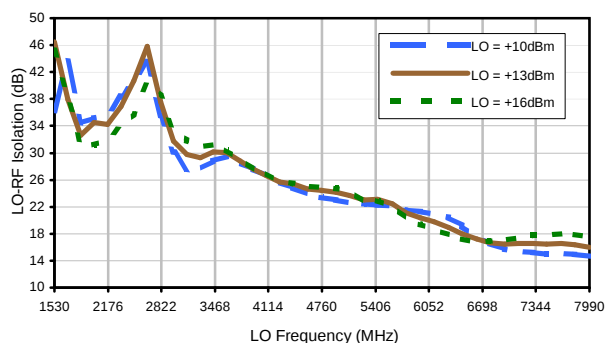


Compression @ RF IN=+9dBm

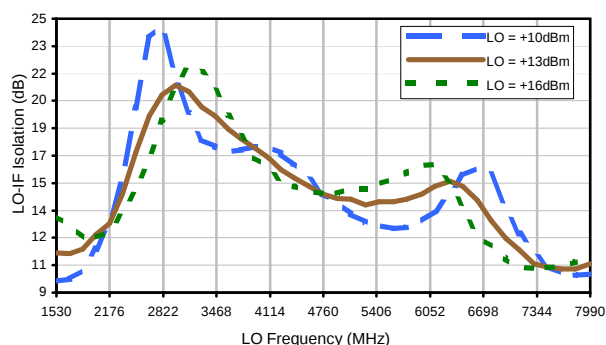


Typical Performance Curves

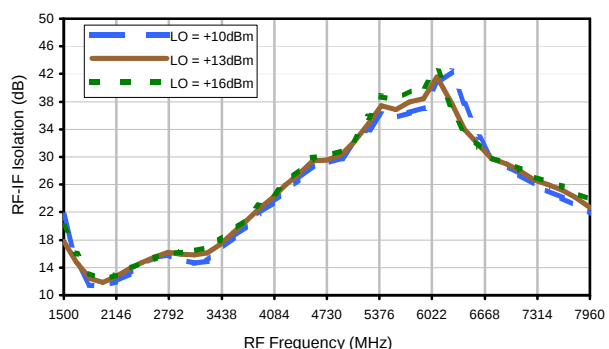
LO-RF Isolation



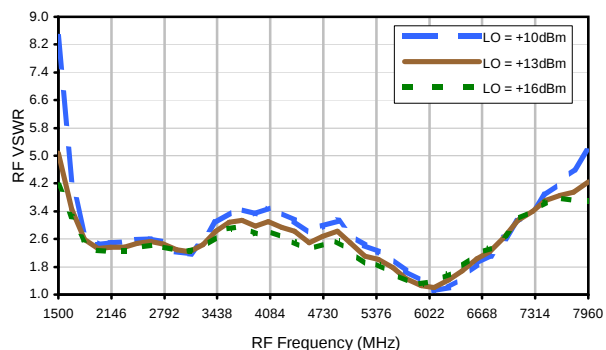
LO-IF Isolation



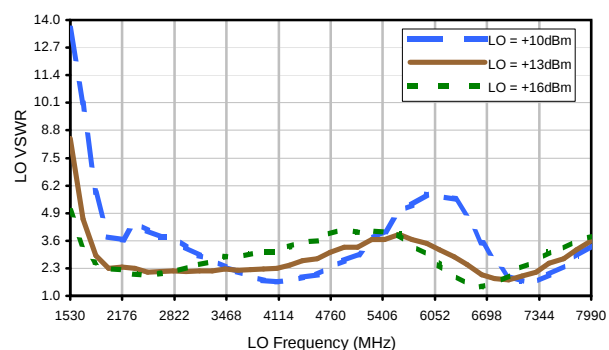
RF-IF Isolation



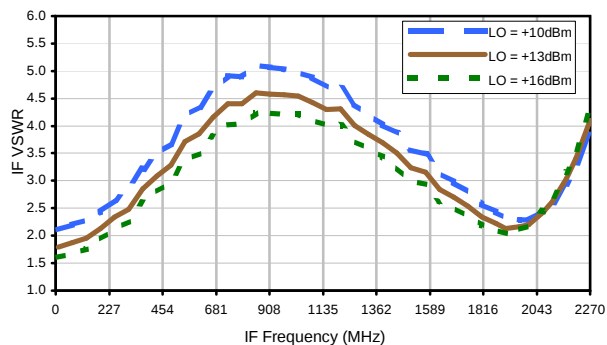
RF VSWR



LO VSWR



IF VSWR



Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+11	20	7	40	---	---	---	---	---	---
1	-	26	+0	37	23	52	59	---	---	---	---	---
2	76	52	49	44	50	54	45	55	---	---	---	---
3	>90	77	63	>78	64	75	70	76	>78	---	---	---
4	>90	>78	>78	>78	>78	>78	>78	>78	>78	>78	---	---
5	---	---	>78	>78	>78	>78	>78	>78	>78	>78	>78	---
6	---	---	---	>78	>78	>78	>78	>78	>78	>78	>78	>78
7	---	---	---	---	>78	>78	>78	>78	>78	>78	>78	>78
8	---	---	---	---	---	>78	>78	>78	>78	>78	>78	>78
9	---	---	---	---	---	---	>78	>78	>78	>78	>78	>78
10	---	---	---	---	---	---	---	>78	>78	>78	>78	>78
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 5100 MHz; -6.00 dBm.
LO IN: 5130 MHz; +13.00 dBm
IF OUT: 30 MHz; -11.95 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+1	29	19	51	---	---	---	---	---	---
1	-	26	+0	39	23	50	60	---	---	---	---	---
2	56	44	40	32	42	51	40	54	---	---	---	---
3	80	58	43	60	39	56	51	63	63	---	---	---
4	>90	65	63	56	72	59	69	59	64	66	---	---
5	---	---	77	81	79	85	62	78	67	75	66	---
6	---	---	---	81	78	71	77	80	72	82	66	85
7	---	---	---	---	>88	>88	82	>88	80	87	76	75
8	---	---	---	---	---	>88	>88	>88	>88	82	84	86
9	---	---	---	---	---	---	>88	>88	>88	>88	84	>88
10	---	---	---	---	---	---	---	>88	>88	>88	>88	>88
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

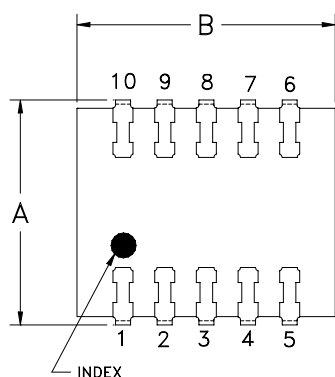
Test conditions: RF IN: 5100 MHz; 4.00 dBm.
LO IN: 5130 MHz; +13.00 dBm
IF OUT: 30 MHz; -2.04 dBm

- 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.

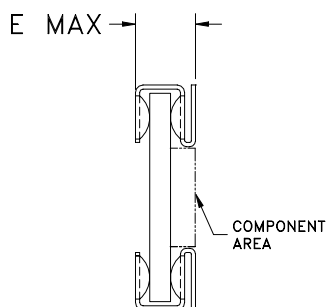
REV. X2
ALY-ED5505/1
101013
Page 3 of 3

CB518
CB539

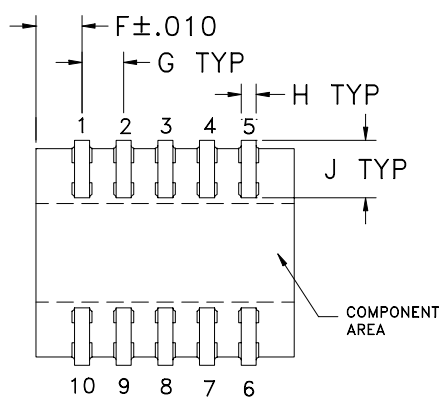
Outline Dimensions



TOP VIEW

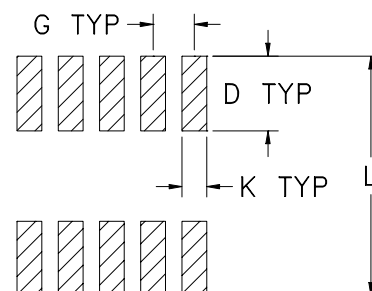


SIDE VIEW



BOTTOM VIEW

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
CB518	.27 (6.86)	.31 (7.87)	-	.090 (2.29)	.080 (2.03)	.055 (1.40)	.050 (1.27)	.018 (0.46)	.074 (1.88)	.030 (0.76)	.290 (7.37)	.3
CB539	.29 (7.36)	.30 (7.62)	-		.085 (2.16)	.050 (1.27)			.067 (1.70)		.315 (8.00)	.3

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

Notes:

- Open style, ceramic base.
- 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.



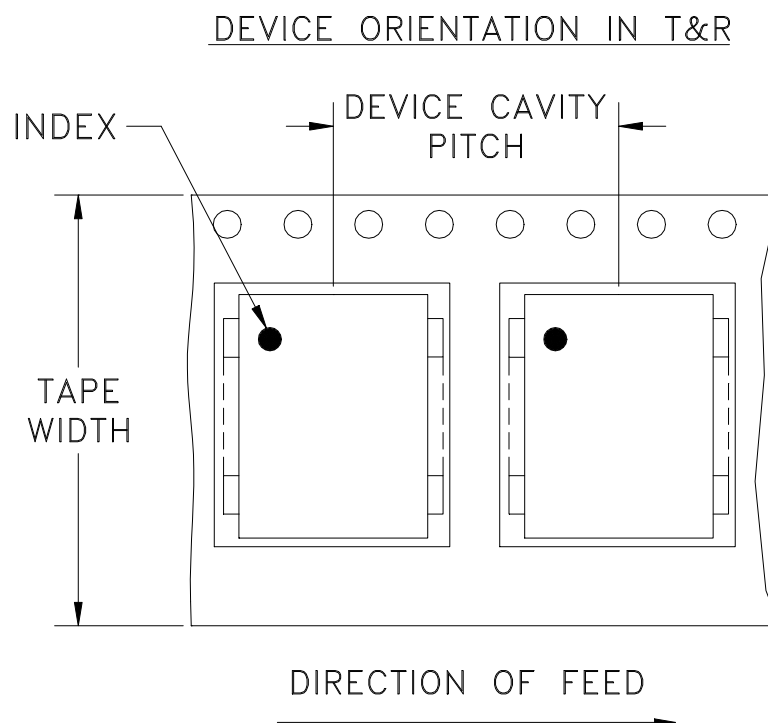
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Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
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Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

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REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M88235	NEW RELEASE	08/06/03	AV	WL
A	M102713	ADDED"...WITH SMOBC"	01/16/06	GF	IL

.044
TRACE WIDTH, 3 PL.
(SEE NOTE BELOW)

.013 REF

.040

.050 TYP

.020 TYP

27X ϕ .015 PTH
FOR GROUND

.020 TYP

PIN 1

.040

.050, 6 PL.

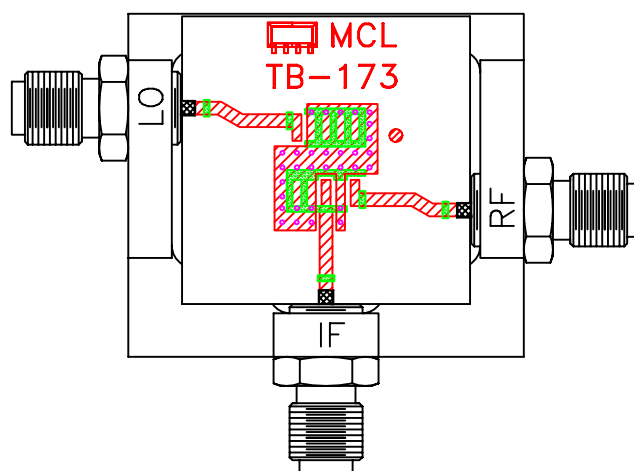
PACKAGE OUTLINE

 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

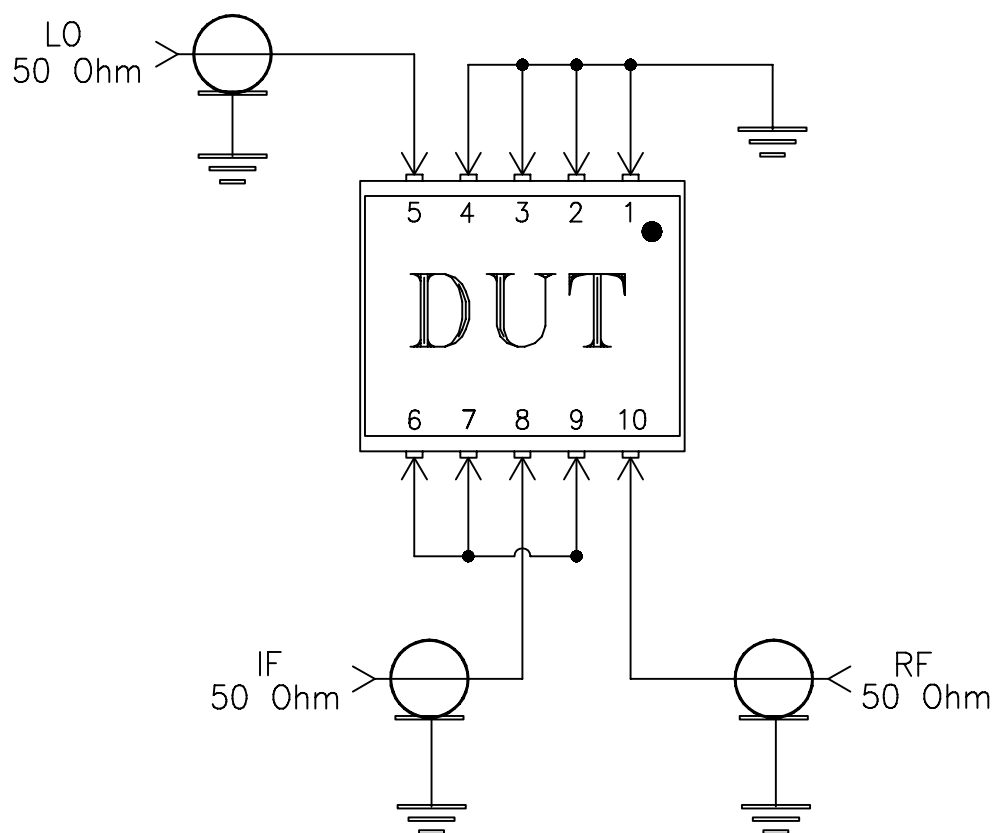
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

SHEET:	1 OF 1
--------	--------

Evaluation Board and Circuit



TB-173



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 inch.

 Mini-Circuits®



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215