

Frequency Mixer

SIM-ED12399/11

Level 10 (LO Power + 10 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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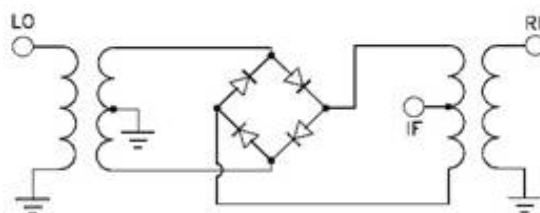
CASE STYLE : HV1195

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (f _L to f _U)	2240		8060	MHz
	RF (f _L to f _U)	2240		8060	MHz
	IF	10		3000	MHz
Conversion Loss	Total Range		6.3		dB
LO-RF Isolation			29		dB
LO-IF Isolation			25		dB
Input IP3			+15		dBm
1 dB Compression			+5		dBm

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

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

Electrical Schematics



Frequency Mixer

SIM-ED12399/11

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
+7	+10	+13	+7	+10	+13	+7	+10	+13	+7	+10	+13			
1700.1	1730.1	17.57	10.76	7.36	1700.1	1730.1	-3.70	2.32	7.48	1700.1	1730.1	-3.00	1.12	1.77
1880.1	1910.1	14.77	9.39	7.25	1880.1	1910.1	-1.55	4.30	12.43	1880.1	1910.1	-1.47	1.16	1.60
2060.1	2090.1	11.48	8.21	7.07	2060.1	2090.1	2.32	9.23	11.52	2060.1	2090.1	-0.12	1.47	1.49
2240.1	2270.1	8.19	6.79	6.15	2240.1	2270.1	8.92	12.64	15.42	2240.1	2270.1	1.89	2.00	1.74
2420.1	2450.1	6.75	6.10	5.77	2420.1	2450.1	12.22	13.93	14.59	2420.1	2450.1	2.28	1.90	1.54
2600.1	2630.1	6.33	5.94	5.78	2600.1	2630.1	13.20	12.38	12.25	2600.1	2630.1	1.75	1.40	1.17
2780.1	2810.1	6.21	5.80	5.62	2780.1	2810.1	13.78	12.66	13.96	2780.1	2810.1	1.29	1.09	0.96
2960.1	2990.1	6.14	5.80	5.61	2960.1	2990.1	21.02	13.65	12.60	2960.1	2990.1	1.15	0.88	0.75
3120.1	3150.1	6.10	5.78	5.59	3120.1	3150.1	26.95	22.11	16.07	3120.1	3150.1	1.00	0.79	0.63
3300.1	3330.1	5.97	5.67	5.53	3300.1	3330.1	18.16	18.18	17.86	3300.1	3330.1	0.95	0.74	0.61
3460.1	3490.1	6.09	5.73	5.57	3460.1	3490.1	16.76	16.84	17.48	3460.1	3490.1	0.91	0.71	0.52
3640.1	3670.1	6.06	5.72	5.65	3640.1	3670.1	11.03	14.51	18.47	3640.1	3670.1	0.94	0.50	0.26
3800.1	3830.1	6.12	5.92	5.85	3800.1	3830.1	13.53	16.25	19.53	3800.1	3830.1	0.71	0.29	0.19
3980.1	4010.1	6.15	5.97	5.89	3980.1	4010.1	18.40	20.16	22.46	3980.1	4010.1	0.63	0.31	0.21
4140.1	4170.1	6.03	5.85	5.77	4140.1	4170.1	19.68	19.55	21.94	4140.1	4170.1	0.67	0.38	0.25
4320.1	4350.1	6.31	6.08	5.98	4320.1	4350.1	15.04	19.12	21.89	4320.1	4350.1	0.79	0.48	0.32
4480.1	4510.1	6.33	6.05	5.96	4480.1	4510.1	18.17	19.06	18.57	4480.1	4510.1	0.67	0.43	0.29
4660.1	4690.1	6.39	6.14	6.05	4660.1	4690.1	16.90	18.75	20.83	4660.1	4690.1	0.81	0.50	0.34
4820.1	4850.1	6.84	6.40	6.21	4820.1	4850.1	17.54	17.29	18.68	4820.1	4850.1	0.90	0.66	0.47
5000.1	5030.1	7.14	6.59	6.29	5000.1	5030.1	17.36	16.11	16.34	5000.1	5030.1	0.97	0.80	0.64
5160.1	5190.1	7.17	6.68	6.38	5160.1	5190.1	14.44	14.27	14.61	5160.1	5190.1	0.99	0.80	0.69
5340.1	5370.1	6.63	6.24	6.02	5340.1	5370.1	13.16	14.06	14.09	5340.1	5370.1	1.15	1.01	0.90
5500.1	5530.1	6.41	5.89	5.70	5500.1	5530.1	11.15	13.53	14.00	5500.1	5530.1	1.23	1.05	0.92
5680.1	5710.1	6.40	5.84	5.64	5680.1	5710.1	9.92	12.76	14.17	5680.1	5710.1	1.25	0.98	0.85
5840.1	5870.1	6.34	5.81	5.65	5840.1	5870.1	9.93	12.47	14.41	5840.1	5870.1	1.20	0.89	0.77
6020.1	6050.1	6.11	5.70	5.64	6020.1	6050.1	13.70	12.06	14.28	6020.1	6050.1	1.15	0.85	0.76
6180.1	6210.1	6.16	5.58	5.46	6180.1	6210.1	15.53	12.89	13.89	6180.1	6210.1	0.80	0.68	0.56
6360.1	6390.1	6.21	5.71	5.53	6360.1	6390.1	14.08	16.02	15.52	6360.1	6390.1	0.90	0.74	0.64
6520.1	6550.1	6.30	5.84	5.63	6520.1	6550.1	13.93	15.10	17.00	6520.1	6550.1	0.82	0.71	0.65
6700.1	6730.1	6.53	6.13	5.87	6700.1	6730.1	12.76	13.89	16.53	6700.1	6730.1	0.78	0.68	0.67
6860.1	6890.1	6.37	6.03	5.92	6860.1	6890.1	13.71	17.69	19.53	6860.1	6890.1	0.95	0.73	0.67
7040.1	7070.1	6.36	6.18	6.12	7040.1	7070.1	16.25	19.34	20.16	7040.1	7070.1	0.82	0.53	0.51
7200.1	7230.1	6.63	6.40	6.34	7200.1	7230.1	13.40	16.85	20.57	7200.1	7230.1	0.58	0.30	0.33
7380.1	7410.1	6.96	6.52	6.40	7380.1	7410.1	16.20	15.43	18.25	7380.1	7410.1	0.83	0.46	0.28
7540.1	7570.1	7.95	7.05	6.74	7540.1	7570.1	17.83	16.57	16.38	7540.1	7570.1	0.76	0.71	0.65
7720.1	7750.1	7.95	6.99	6.62	7720.1	7750.1	16.14	14.10	14.16	7720.1	7750.1	0.91	0.86	0.93
7880.1	7910.1	8.08	7.06	6.73	7880.1	7910.1	12.60	14.08	13.67	7880.1	7910.1	1.18	1.14	1.31
8060.1	8090.1	9.09	7.42	7.16	8060.1	8090.1	8.81	12.75	10.36	8060.1	8090.1	1.07	1.33	1.35
8220.1	8250.1	9.80	8.36	8.10	8220.1	8250.1	6.47	8.49	12.36	8220.1	8250.1	1.96	1.45	1.18
8400.1	8430.1	11.24	10.72	10.18	8400.1	8430.1	2.81	22.00	15.72	8400.1	8430.1	2.79	1.15	0.66

REV. X2

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=5100.1001MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2290.1001MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=7910.1001MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+10			+10			+10
3400.0	1700.1	14.43	10.0	2300.1	6.84	3310.0	4600.1	8.68
3234.6	1865.5	11.08	110.0	2400.1	6.32	3230.0	4680.1	8.57
3069.3	2030.8	9.11	210.0	2500.1	6.34	3150.0	4760.1	8.54
2903.9	2196.2	8.37	310.0	2600.1	6.36	3070.0	4840.1	8.41
2738.5	2361.6	7.64	410.0	2700.1	6.24	2990.0	4920.1	8.30
2573.2	2526.9	6.52	510.0	2800.1	6.16	2910.0	5000.1	8.31
2407.8	2692.3	6.16	610.0	2900.1	6.19	2830.0	5080.1	8.21
2221.8	2878.3	6.64	710.0	3000.1	6.06	2750.0	5160.1	8.00
2056.4	3043.7	7.43	810.0	3100.1	6.03	2670.0	5240.1	8.07
1870.4	3229.7	8.02	910.0	3200.1	6.03	2590.0	5320.1	8.17
1705.0	3395.1	8.76	1010.0	3300.1	6.25	2510.0	5400.1	8.12
1519.0	3581.1	8.30	1110.0	3400.1	6.51	2430.0	5480.1	7.95
1353.6	3746.5	7.97	1210.0	3500.1	6.73	2350.0	5560.1	8.06
1167.6	3932.5	7.30	1310.0	3600.1	6.63	2270.0	5640.1	8.32
1002.2	4097.9	6.83	1410.0	3700.1	6.56	2190.0	5720.1	8.30
816.2	4283.9	6.57	1510.0	3800.1	6.67	2110.0	5800.1	8.25
650.8	4449.3	6.63	1610.0	3900.1	6.64	2030.0	5880.1	8.35
464.8	4635.3	6.55	1710.0	4000.1	6.51	1950.0	5960.1	8.43
299.4	4800.7	6.63	1810.0	4100.1	6.39	1870.0	6040.1	8.31
113.4	4986.7	6.56	1910.0	4200.1	6.57	1790.0	6120.1	8.16
48.9	5149.0	6.66	2010.0	4300.1	6.73	1710.0	6200.1	8.05
224.0	5324.1	6.88	2110.0	4400.1	6.78	1630.0	6280.1	7.85
379.6	5479.7	6.81	2210.0	4500.1	7.15	1550.0	6360.1	7.76
554.6	5654.7	6.80	2310.0	4600.1	7.31	1450.0	6460.1	7.64
710.2	5810.3	6.97	2410.0	4700.1	7.23	1370.0	6540.1	7.65
885.3	5985.4	7.34	2510.0	4800.1	7.17	1270.0	6640.1	7.45
1040.9	6141.0	7.42	2610.0	4900.1	7.27	1190.0	6720.1	7.43
1216.0	6316.1	7.57	2710.0	5000.1	7.26	1090.0	6820.1	7.28
1371.6	6471.7	7.77	2810.0	5100.1	7.41	1010.0	6900.1	7.22
1546.6	6646.7	7.84	2910.0	5200.1	7.25	910.0	7000.1	7.23
1702.3	6802.4	7.83	3010.0	5300.1	7.20	830.0	7080.1	7.23
1877.3	6977.4	7.45	3110.0	5400.1	7.24	730.0	7180.1	7.36
2032.9	7133.0	7.48	3210.0	5500.1	7.28	650.0	7260.1	7.22
2208.0	7308.1	7.59	3310.0	5600.1	7.54	550.0	7360.1	7.24
2363.6	7463.7	7.93	3410.0	5700.1	7.93	470.0	7440.1	7.19
2538.7	7638.8	7.73	3510.0	5800.1	8.05	370.0	7540.1	7.11
2694.3	7794.4	7.68	3610.0	5900.1	8.54	290.0	7620.1	6.91
2869.3	7969.4	7.73	3710.0	6000.1	8.97	190.0	7720.1	6.93
3024.9	8125.0	8.96	3810.0	6100.1	9.58	110.0	7800.1	6.92
3200.0	8300.1	11.19	3910.0	6200.1	10.53	10.0	7900.1	7.25

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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
1730.1	45.64	43.76	38.85	18.69	18.90	20.06
1910.1	41.60	34.85	32.01	17.24	17.90	19.79
2090.1	34.26	31.19	30.82	16.22	17.85	19.94
2270.1	33.66	32.48	32.22	16.47	18.81	21.05
2450.1	34.92	35.02	34.92	17.87	20.81	23.13
2630.1	35.55	36.27	36.69	19.60	22.49	24.28
2810.1	34.39	35.34	35.37	21.34	23.41	23.77
2990.1	32.08	31.72	31.58	21.95	23.77	24.13
3150.1	30.74	30.59	30.22	23.73	24.98	24.41
3330.1	31.44	30.90	30.42	25.34	25.05	24.27
3490.1	31.69	31.36	30.89	26.87	25.61	24.45
3670.1	32.45	32.03	31.68	27.56	25.72	24.67
3830.1	32.91	32.33	31.92	28.94	26.94	25.70
4010.1	34.90	34.08	33.16	31.98	30.09	28.56
4170.1	33.39	32.86	32.10	36.32	34.94	33.70
4350.1	32.45	32.16	32.27	39.17	39.00	39.41
4510.1	33.59	33.21	32.87	31.22	29.94	28.89
4690.1	31.89	31.50	31.59	24.63	23.30	22.73
4850.1	31.95	31.38	31.39	20.98	19.88	19.44
5030.1	32.00	31.19	30.99	19.30	18.28	17.89
5190.1	32.17	30.88	30.34	19.10	18.29	17.94
5370.1	31.09	30.43	29.82	19.26	18.95	18.57
5530.1	31.00	29.77	29.05	20.31	19.94	19.55
5710.1	30.53	28.93	27.95	21.41	21.13	20.74
5870.1	29.92	27.82	26.77	22.29	22.10	21.89
6050.1	29.40	27.33	25.77	23.37	23.53	23.33
6210.1	27.84	26.22	24.79	24.53	25.14	25.17
6390.1	26.84	25.44	23.95	26.72	28.22	28.97
6550.1	26.50	25.48	24.32	29.54	31.96	34.22
6730.1	26.30	25.68	24.91	33.64	36.24	39.11
6890.1	26.40	26.07	25.29	43.97	47.31	45.89
7070.1	25.34	25.12	25.01	37.08	37.01	36.86
7230.1	24.20	24.51	24.52	29.38	29.25	29.61
7410.1	24.32	24.66	24.43	24.06	23.34	23.09
7570.1	24.85	25.07	25.14	20.81	19.96	19.77
7750.1	27.16	27.37	27.38	18.25	17.81	17.71
7910.1	29.18	29.62	29.39	17.16	16.64	16.59
8090.1	29.91	29.80	29.53	13.87	12.89	12.77
8250.1	28.86	27.73	27.54	11.78	10.26	10.70
8430.1	23.82	22.93	23.16	9.31	9.03	9.16

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+7	+10	+13
1700.1	1730.1	20.45	19.22	13.98
1880.1	1910.1	18.60	13.24	10.50
2060.1	2090.1	14.47	11.20	10.40
2240.1	2270.1	13.30	11.36	10.69
2420.1	2450.1	14.23	13.04	12.41
2600.1	2630.1	16.50	15.89	15.50
2780.1	2810.1	18.71	18.18	17.86
2960.1	2990.1	19.76	19.60	19.10
3120.1	3150.1	20.44	20.56	20.08
3300.1	3330.1	20.03	19.78	19.41
3460.1	3490.1	18.99	18.37	17.88
3640.1	3670.1	18.71	18.15	17.66
3800.1	3830.1	18.93	18.56	18.21
3980.1	4010.1	19.43	19.15	18.88
4140.1	4170.1	20.20	19.88	19.59
4320.1	4350.1	23.68	23.15	22.81
4480.1	4510.1	25.97	25.24	24.61
4660.1	4690.1	29.83	29.30	29.00
4820.1	4850.1	37.11	36.72	36.45
5000.1	5030.1	30.93	30.39	30.02
5160.1	5190.1	25.27	24.98	24.77
5340.1	5370.1	22.13	21.81	21.52
5500.1	5530.1	20.88	20.49	20.26
5680.1	5710.1	20.26	19.94	19.79
5840.1	5870.1	19.95	19.61	19.48
6020.1	6050.1	20.15	19.39	19.14
6180.1	6210.1	19.95	19.06	18.51
6360.1	6390.1	19.52	18.75	18.04
6520.1	6550.1	22.44	21.58	20.86
6700.1	6730.1	30.54	29.58	28.70
6860.1	6890.1	53.95	48.75	41.89
7040.1	7070.1	27.46	26.95	26.63
7200.1	7230.1	23.43	22.68	22.19
7380.1	7410.1	23.10	21.12	20.00
7540.1	7570.1	32.57	38.28	33.20
7720.1	7750.1	21.68	22.30	23.27
7880.1	7910.1	19.72	19.81	19.61
8060.1	8090.1	19.14	19.62	18.95
8220.1	8250.1	18.04	18.96	18.19
8400.1	8430.1	17.64	18.32	18.42

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=7900MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+7	+10	+13		+7	+10	+13		+7	+10	+13
1700.1	1730.1	5.59	3.24	2.12	1730.1	24.14	20.70	14.38	10.0	1.45	1.10	1.10
1880.1	1910.1	4.26	2.45	1.78	1910.1	21.20	14.26	8.99	90.0	1.46	1.13	1.14
2060.1	2090.1	3.26	2.22	1.91	2090.1	13.81	7.70	6.46	170.0	1.49	1.18	1.19
2240.1	2270.1	2.60	2.11	1.88	2270.1	7.28	5.30	5.19	270.0	1.59	1.30	1.26
2420.1	2450.1	2.37	2.15	2.02	2450.1	4.22	3.73	4.18	350.0	1.68	1.37	1.32
2600.1	2630.1	2.33	2.20	2.14	2630.1	2.87	2.99	3.64	450.0	1.84	1.50	1.40
2780.1	2810.1	2.36	2.21	2.15	2810.1	2.19	2.53	3.24	530.0	1.97	1.58	1.46
2960.1	2990.1	2.34	2.18	2.10	2990.1	1.95	2.32	2.94	630.0	2.17	1.72	1.56
3120.1	3150.1	2.33	2.16	2.02	3150.1	1.74	2.11	2.67	710.0	2.35	1.84	1.64
3300.1	3330.1	2.42	2.22	2.09	3330.1	1.64	2.00	2.53	810.0	2.62	2.05	1.80
3460.1	3490.1	2.35	2.09	1.95	3490.1	1.73	2.07	2.56	890.0	2.82	2.20	1.93
3640.1	3670.1	2.20	2.00	1.89	3670.1	1.84	2.03	2.50	990.0	3.07	2.41	2.11
3800.1	3830.1	2.23	2.07	1.97	3830.1	1.71	1.97	2.48	1070.0	3.25	2.56	2.24
3980.1	4010.1	2.31	2.16	2.07	4010.1	1.64	2.05	2.65	1170.0	3.43	2.70	2.37
4140.1	4170.1	2.40	2.23	2.12	4170.1	1.64	2.17	2.86	1250.0	3.59	2.83	2.49
4320.1	4350.1	2.80	2.60	2.48	4350.1	1.56	2.21	2.95	1350.0	3.74	2.95	2.59
4480.1	4510.1	2.82	2.53	2.35	4510.1	1.63	2.27	3.00	1430.0	3.83	3.01	2.64
4660.1	4690.1	2.63	2.43	2.30	4690.1	1.73	2.36	3.08	1530.0	3.95	3.10	2.71
4820.1	4850.1	3.13	2.86	2.71	4850.1	1.92	2.50	3.20	1610.0	4.03	3.16	2.76
5000.1	5030.1	3.45	3.16	2.96	5030.1	2.10	2.57	3.20	1710.0	4.09	3.20	2.78
5160.1	5190.1	3.40	3.13	2.92	5190.1	2.39	2.73	3.26	1790.0	4.13	3.23	2.80
5340.1	5370.1	3.06	2.80	2.60	5370.1	2.74	2.90	3.37	1890.0	4.08	3.19	2.76
5500.1	5530.1	2.87	2.57	2.38	5530.1	3.01	2.89	3.17	1970.0	4.06	3.20	2.76
5680.1	5710.1	2.59	2.32	2.17	5710.1	3.27	2.86	2.95	2070.0	3.93	3.10	2.67
5840.1	5870.1	2.40	2.13	2.00	5870.1	3.29	2.69	2.64	2150.0	3.82	3.00	2.59
6020.1	6050.1	2.09	1.78	1.70	6050.1	3.10	2.39	2.21	2250.0	3.70	2.91	2.52
6180.1	6210.1	2.09	1.74	1.57	6210.1	2.77	2.04	1.81	2330.0	3.59	2.82	2.44
6360.1	6390.1	1.98	1.75	1.57	6390.1	2.20	1.57	1.39	2430.0	3.44	2.72	2.38
6520.1	6550.1	1.90	1.71	1.58	6550.1	1.70	1.21	1.23	2510.0	3.33	2.65	2.33
6700.1	6730.1	1.87	1.73	1.62	6730.1	1.31	1.09	1.42	2610.0	3.18	2.59	2.31
6860.1	6890.1	1.81	1.70	1.64	6890.1	1.12	1.27	1.61	2690.0	3.10	2.58	2.35
7040.1	7070.1	1.82	1.78	1.75	7070.1	1.14	1.40	1.76	2790.0	2.95	2.55	2.38
7200.1	7230.1	1.90	1.85	1.82	7230.1	1.51	1.67	2.01	2870.0	2.90	2.58	2.45
7380.1	7410.1	1.98	1.81	1.72	7410.1	1.96	2.04	2.33	2970.0	2.79	2.59	2.54
7540.1	7570.1	2.69	2.40	2.25	7570.1	2.36	2.38	2.64	3050.0	2.78	2.68	2.69
7720.1	7750.1	2.92	2.61	2.44	7750.1	2.85	2.77	2.99	3150.0	2.77	2.77	2.84
7880.1	7910.1	3.11	2.79	2.60	7910.1	3.50	3.22	3.39	3230.0	2.88	2.97	3.11
8060.1	8090.1	3.48	2.92	2.68	8090.1	4.46	3.77	3.73	3330.0	2.95	3.15	3.37
8220.1	8250.1	3.63	2.90	2.46	8250.1	4.80	3.99	3.86	3410.0	3.00	3.28	3.58
8400.1	8430.1	3.41	2.68	2.54	8430.1	4.17	3.83	3.82	3510.0	3.12	3.52	3.92

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+10	16	15	31	---	---	---	---	---	---
1	-	21	+0	34	19	46	47	---	---	---	---	---
2	84	61	56	54	55	56	59	67	---	---	---	---
3	>90	>73	62	>73	60	>73	67	>73	>73	---	---	---
4	>90	>73	>73	>73	>73	>73	>73	>73	>73	>73	---	---
5	---	---	>73	>73	>73	>73	>73	>73	>73	>73	>73	---
6	---	---	---	>73	>73	>73	>73	>73	>73	>73	>73	>73
7	---	---	---	---	>73	>73	>73	>73	>73	>73	>73	>73
8	---	---	---	---	---	>73	>73	>73	>73	>73	>73	>73
9	---	---	---	---	---	---	>73	>73	>73	>73	>73	>73
10	---	---	---	---	---	---	---	>73	>73	>73	>73	>73
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions:

RF IN: 5100 MHz; -10.00 dBm.

LO IN: 5130 MHz; +10.00 dBm

IF OUT: 30 MHz; -16.61 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+0	26	26	41	---	---	---	---	---	---
1	-	20	+0	35	19	48	48	---	---	---	---	---
2	64	46	46	38	45	47	51	63	---	---	---	---
3	89	54	39	63	38	61	47	61	78	---	---	---
4	>90	76	75	60	72	54	71	57	71	72	---	---
5	---	---	79	80	65	>83	58	80	62	>83	75	---
6	---	---	---	>83	>83	70	>83	63	>83	67	>83	>83
7	---	---	---	---	>83	>83	77	>83	69	>83	73	>83
8	---	---	---	---	---	>83	>83	81	>83	75	>83	79
9	---	---	---	---	---	---	>83	>83	>83	>83	81	>83
10	---	---	---	---	---	---	---	>83	>83	>83	>83	>83
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 5100 MHz; 0.00 dBm.

LO IN: 5130 MHz; +10.00 dBm

IF OUT: 30 MHz; -6.65 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

SIM-ED12399/11

101028

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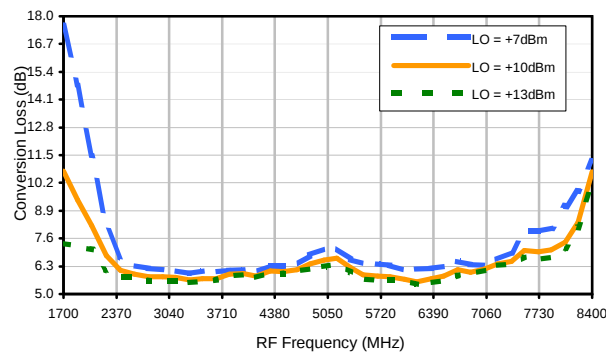


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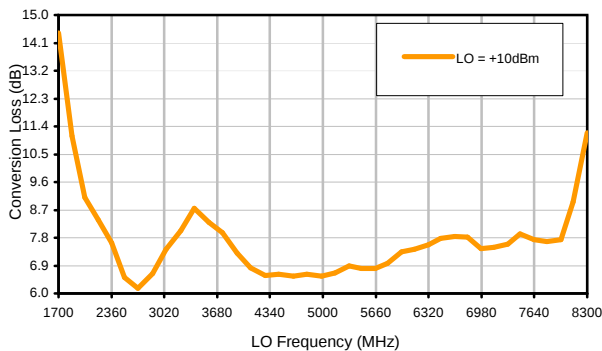


Typical Performance Curves

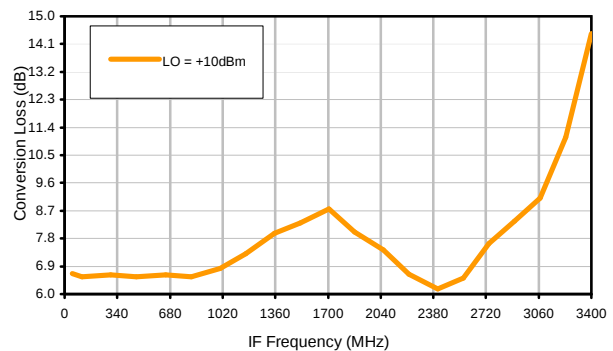
Conversion Loss @ IF=30MHz



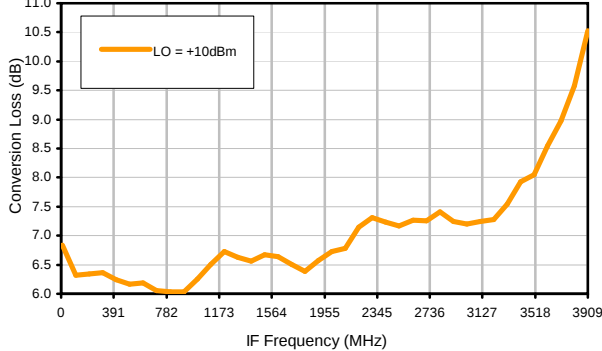
Conversion Loss vs. LO @ RF=5100.1001MHz



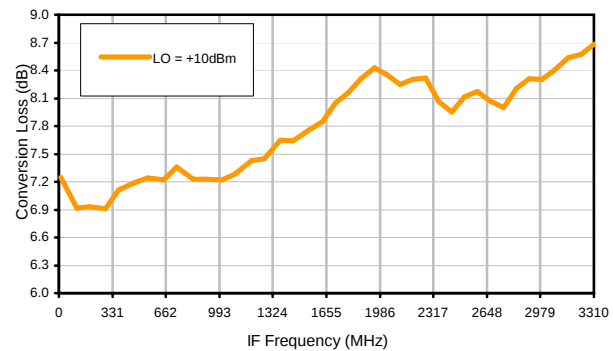
Conversion Loss vs. IF @ RF=5100.1001MHz



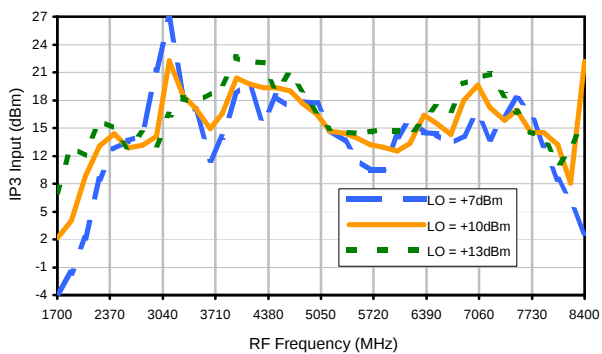
Conversion Loss vs. IF @ RF=2290.1001MHz



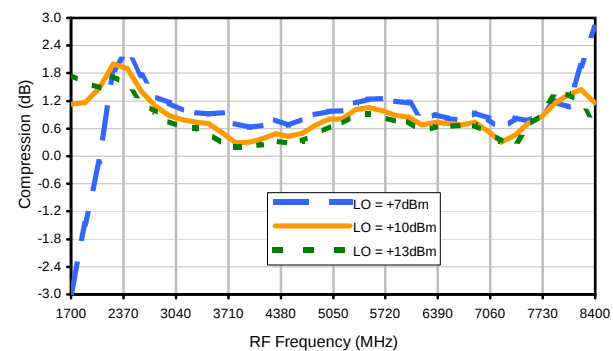
Conversion Loss vs. IF @ RF=7910.1001MHz



IP3 Input

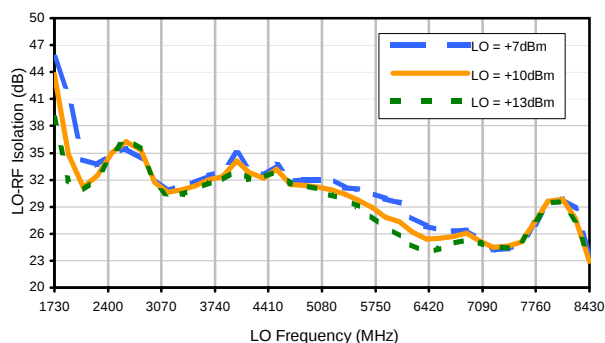


Compression @ RF IN=+5dBm

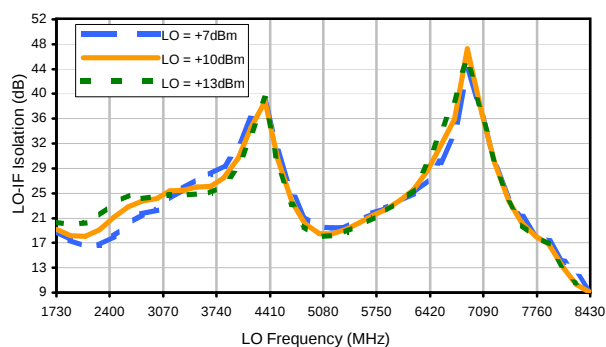


Typical Performance Curves

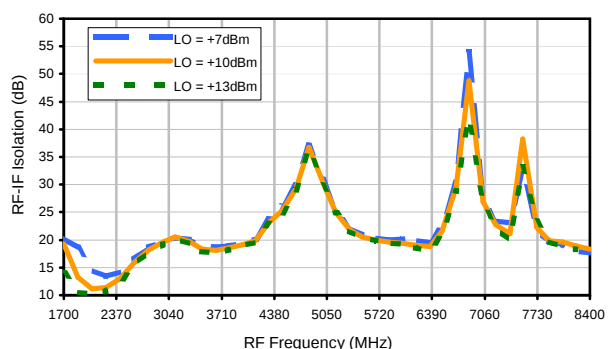
LO-RF Isolation



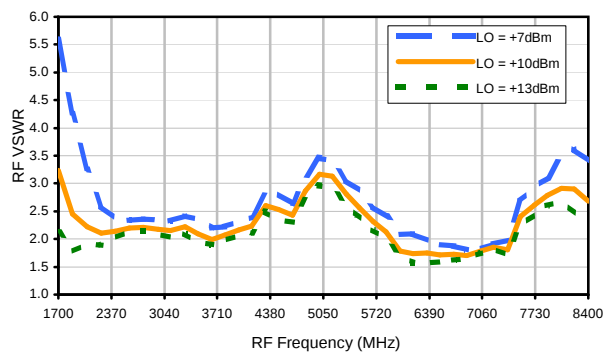
LO-IF Isolation



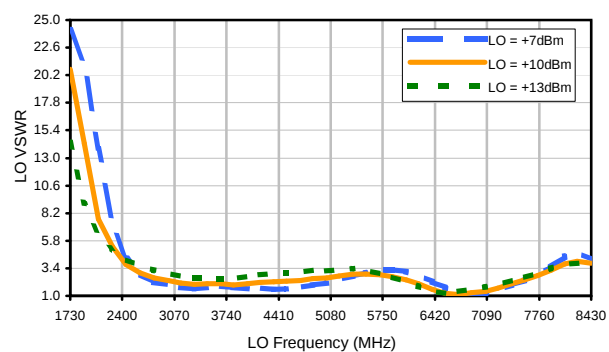
RF-IF Isolation



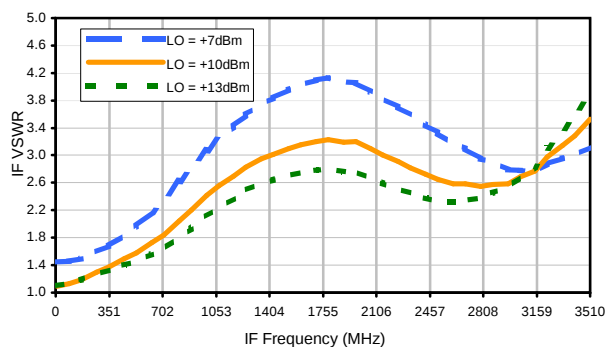
RF VSWR



LO VSWR



IF VSWR



Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+10	16	15	31	---	---	---	---	---	---
1	-	21	+0	34	19	46	47	---	---	---	---	---
2	84	61	56	54	55	56	59	67	---	---	---	---
3	>90	>73	62	>73	60	>73	67	>73	>73	---	---	---
4	>90	>73	>73	>73	>73	>73	>73	>73	>73	>73	---	---
5	---	---	>73	>73	>73	>73	>73	>73	>73	>73	>73	---
6	---	---	---	>73	>73	>73	>73	>73	>73	>73	>73	>73
7	---	---	---	---	>73	>73	>73	>73	>73	>73	>73	>73
8	---	---	---	---	---	>73	>73	>73	>73	>73	>73	>73
9	---	---	---	---	---	---	>73	>73	>73	>73	>73	>73
10	---	---	---	---	---	---	---	>73	>73	>73	>73	>73
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

Test conditions: RF IN: 5100 MHz; -10.00 dBm.
LO IN: 5130 MHz; +10.00 dBm
IF OUT: 30 MHz; -16.61 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+0	26	26	41	---	---	---	---	---	---
1	-	20	+0	35	19	48	48	---	---	---	---	---
2	64	46	46	38	45	47	51	63	---	---	---	---
3	89	54	39	63	38	61	47	61	78	---	---	---
4	>90	76	75	60	72	54	71	57	71	72	---	---
5	---	---	79	80	65	>83	58	80	62	>83	75	---
6	---	---	---	>83	>83	70	>83	63	>83	67	>83	>83
7	---	---	---	---	>83	>83	77	>83	69	>83	73	>83
8	---	---	---	---	---	>83	>83	81	>83	75	>83	79
9	---	---	---	---	---	---	>83	>83	>83	>83	81	>83
10	---	---	---	---	---	---	---	>83	>83	>83	>83	>83
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

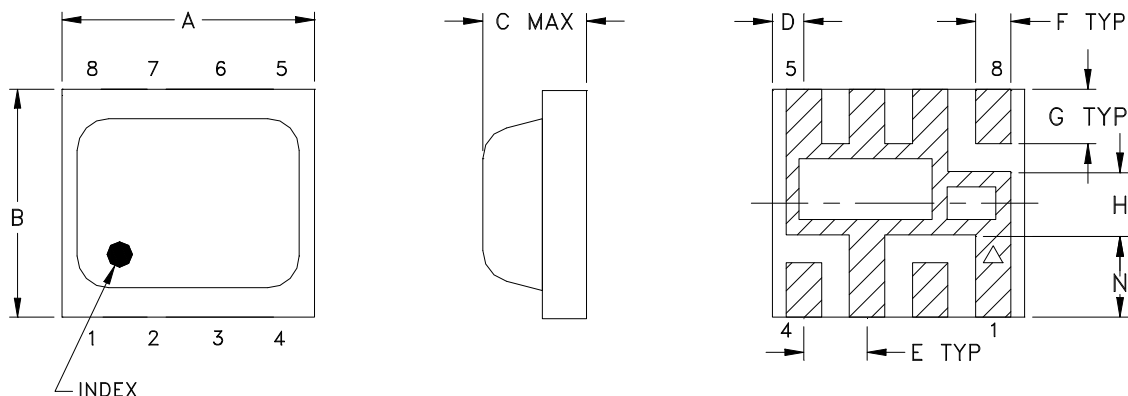
LO HARMONICS ORDER

Test conditions: RF IN: 5100 MHz; 0.00 dBm.
LO IN: 5130 MHz; +10.00 dBm
IF OUT: 30 MHz; -6.65 dBm

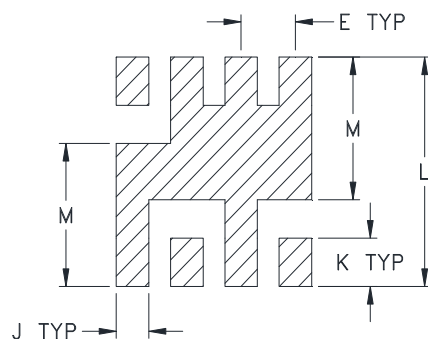
- Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Outline Dimensions

HV1195



PCB Metal Land Pattern



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

CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
HV1195	0.200 (5.08)	0.180 (4.57)	0.087 (2.21)	0.025 (0.64)	0.050 (1.27)	0.028 (0.71)	0.043 (1.09)	0.050 (1.27)	0.030 (0.76)	0.043 (1.09)	0.204 (5.18)	0.127 (3.23)	0.065 (1.65)

CASE#	WT, GRAM
HV1195	.08

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

Notes:

1. Case material: Plastic encapsulation on Ceramic base.
2. Termination finish: Palladium Silver.



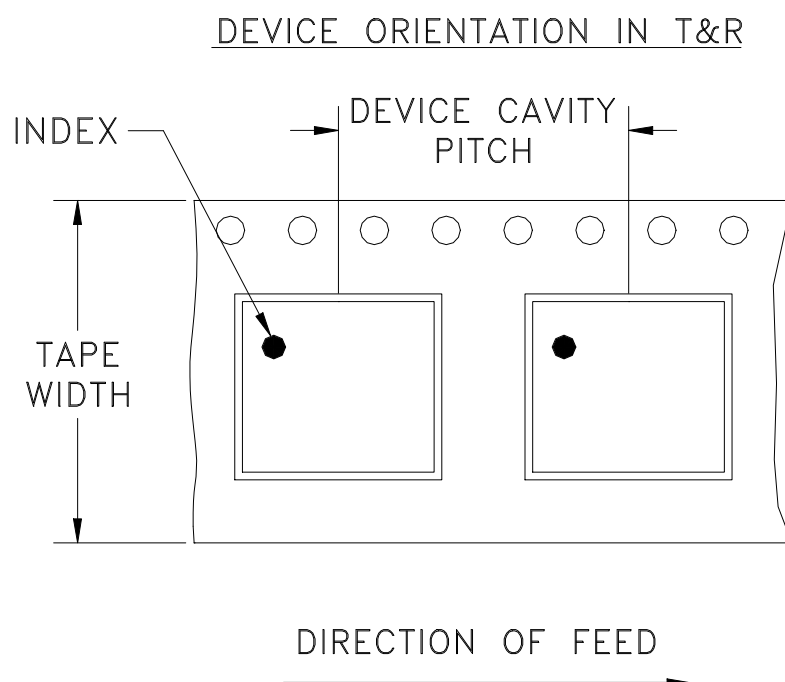
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RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F82



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
12	8	7	500

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Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85° C Case Temperature	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102-C, Condition C
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutectic Process: 225°C peak Pb-Free Process: 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 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