

Non-Catalog Model

Frequency Mixer

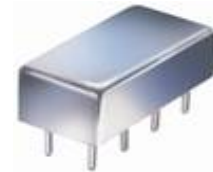
SBL-1-1LH

Level 10 (LO Power +10 dBm)

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.

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CASE STYLE : A06

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	0.2		400	MHz
	RF (fL to fU)	0.2		400	MHz
	IF	0		400	MHz
Conversion Loss	mid band		5.2	7.0	dB
	Total Range			9.0	dB
LO-RF Isolation	Low Range	45	67		dB
	Mid Range	30	64		dB
	Upper Range	25	51		dB
LO-IF Isolation	Low Range	30	62		dB
	Mid Range	25	52		dB
	Upper Range	20	34		dB
1 dB Comp. Input Power			+5		dBm

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

Mid Range = [10fL to fU/2]

Upper Range = [fU/2 to fU]

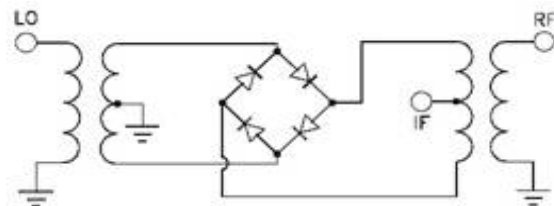
Non-hermetic

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

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

^ - pins must be connected together externally

Electrical Schematics



Frequency Mixer

SBL-1-1LH

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+7	+10	+13
0.2	30.2	5.41	5.14	5.02
0.4	30.4	5.30	5.04	4.93
0.5	30.5	5.29	5.03	4.93
1.0	31.0	5.21	4.96	4.85
2.0	32.0	5.10	4.83	4.73
5.0	35.0	5.14	4.81	4.68
10.0	40.0	5.06	4.75	4.66
45.5	75.5	5.20	4.91	4.78
63.2	93.2	5.13	4.87	4.78
80.9	110.9	5.10	4.89	4.79
98.6	128.6	5.15	4.95	4.82
116.3	146.3	5.19	4.95	4.80
151.6	181.6	5.24	5.00	4.87
169.3	199.3	5.42	5.09	4.85
187.0	217.0	5.55	5.32	5.08
204.7	234.7	5.43	5.26	5.11
222.4	252.4	5.48	5.27	5.17
257.8	287.8	5.50	5.25	5.15
275.5	305.5	5.85	5.44	5.31
293.2	323.2	6.25	5.74	5.46
310.9	340.9	6.49	6.24	5.74
328.6	358.6	6.85	6.57	6.23
363.9	393.9	7.81	7.45	7.05
381.6	411.6	7.90	7.42	6.89
399.3	429.3	7.84	7.20	6.42
417.0	447.0	7.71	6.75	6.01
434.7	464.7	7.32	6.37	5.94
470.1	500.1	6.51	6.13	5.94
487.8	517.8	6.57	6.24	6.12
505.5	535.5	6.82	6.58	6.43
523.2	553.2	7.12	6.85	6.73
540.9	570.9	7.31	7.02	6.84
576.3	606.3	7.48	7.13	7.00
593.9	623.9	7.89	7.55	7.42
611.6	641.6	8.36	8.11	7.96
629.3	659.3	8.88	8.51	8.40
647.0	677.0	9.34	8.91	8.77
664.7	694.7	9.93	9.45	9.22
682.4	712.4	10.62	10.08	9.78
700.1	730.1	11.38	10.69	10.32

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	20.87	24.69	24.09
27.8	57.8	23.73	23.30	28.71
45.5	75.5	23.32	23.10	24.53
63.2	93.2	26.47	25.46	19.87
80.9	110.9	22.55	22.42	17.68
98.6	128.6	23.46	17.75	15.65
116.3	146.3	21.15	19.53	17.14
133.9	163.9	15.46	13.13	12.44
151.6	181.6	15.75	13.85	13.71
169.3	199.3	16.50	17.81	19.85
187.0	217.0	13.73	13.01	14.69
204.7	234.7	15.72	13.93	14.01
222.4	252.4	15.68	14.61	14.58
240.1	270.1	13.19	12.98	16.31
257.8	287.8	14.00	14.86	16.07
275.5	305.5	11.40	15.91	16.83
293.2	323.2	6.11	10.41	15.05
310.9	340.9	4.17	5.39	9.78
328.6	358.6	3.42	3.69	5.27
346.3	376.3	3.31	3.54	4.25
363.9	393.9	3.51	3.87	4.66
381.6	411.6	4.87	5.92	7.49
399.3	429.3	6.48	8.08	10.73
417.0	447.0	8.10	11.26	16.34
434.7	464.7	11.00	17.26	24.93
452.4	482.4	18.02	17.55	32.05
470.1	500.1	16.57	19.97	21.37
487.8	517.8	17.76	20.50	19.51
505.5	535.5	18.03	18.42	19.54
523.2	553.2	16.21	17.33	20.61
540.9	570.9	15.76	19.29	20.05
558.6	588.6	15.55	15.59	14.18
576.3	606.3	13.15	12.27	11.88
593.9	623.9	11.51	11.30	10.60
611.6	641.6	10.76	11.55	10.93
629.3	659.3	11.04	12.74	12.66
647.0	677.0	11.86	13.73	14.50
664.7	694.7	11.94	14.08	14.76
682.4	712.4	12.28	14.52	17.31
700.1	730.1	12.32	15.23	19.27

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	1.20	0.89	0.68
27.8	57.8	1.16	0.83	0.64
45.5	75.5	1.09	0.83	0.62
63.2	93.2	1.03	0.80	0.59
80.9	110.9	1.03	0.73	0.57
98.6	128.6	0.89	0.64	0.50
116.3	146.3	0.90	0.65	0.52
133.9	163.9	0.90	0.68	0.57
151.6	181.6	0.88	0.64	0.54
169.3	199.3	0.71	0.60	0.47
187.0	217.0	0.69	0.54	0.47
204.7	234.7	0.98	0.73	0.63
222.4	252.4	1.18	0.87	0.73
240.1	270.1	1.44	1.02	0.76
257.8	287.8	1.72	1.17	0.93
275.5	305.5	1.88	1.39	1.07
293.2	323.2	2.02	1.66	1.28
310.9	340.9	2.23	1.80	1.52
328.6	358.6	2.24	1.82	1.52
346.3	376.3	1.90	1.56	1.28
363.9	393.9	1.56	1.26	1.05
381.6	411.6	1.42	1.21	1.11
399.3	429.3	1.43	1.31	1.29
417.0	447.0	1.51	1.50	1.42
434.7	464.7	1.75	1.66	1.38
452.4	482.4	2.17	1.80	1.46
470.1	500.1	2.21	1.73	1.42
487.8	517.8	2.09	1.59	1.29
505.5	535.5	1.88	1.33	1.02
523.2	553.2	1.71	1.21	0.91
540.9	570.9	1.75	1.29	1.01
558.6	588.6	1.86	1.45	1.20
576.3	606.3	1.97	1.57	1.39
593.9	623.9	2.03	1.55	1.42
611.6	641.6	2.01	1.47	1.35
629.3	659.3	2.06	1.50	1.35
647.0	677.0	2.08	1.45	1.25
664.7	694.7	2.00	1.31	1.08
682.4	712.4	1.99	1.16	0.89
700.1	730.1	2.00	1.15	0.84

Frequency Mixer

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=200.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=400.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+10			+10			+10
190.0	10.1	5.22	10.0	20.1	4.77	390.0	10.1	6.53
185.4	14.7	5.20	19.7	29.8	4.69	380.3	19.8	6.49
180.8	19.3	5.14	29.5	39.6	4.65	370.5	29.6	6.42
176.2	23.9	5.06	39.2	49.3	4.71	360.8	39.3	6.36
171.5	28.6	5.05	49.0	59.1	4.75	351.0	49.1	6.34
166.9	33.2	4.97	58.7	68.8	4.74	341.3	58.8	6.30
162.3	37.8	4.95	68.5	78.6	4.78	331.5	68.6	6.29
157.7	42.4	4.95	78.2	88.3	4.85	321.8	78.3	6.31
153.1	47.0	4.95	87.9	98.0	4.86	312.1	88.0	6.29
148.5	51.6	4.94	97.7	107.8	4.83	302.3	97.8	6.25
143.8	56.3	4.92	107.4	117.5	4.86	292.6	107.5	6.28
139.2	60.9	4.92	117.2	127.3	4.89	282.8	117.3	6.32
134.6	65.5	4.90	126.9	137.0	4.88	273.1	127.0	6.31
130.0	70.1	4.90	136.7	146.8	4.93	263.3	136.8	6.33
125.4	74.7	4.92	146.4	156.5	5.03	253.6	146.5	6.41
120.8	79.3	4.93	156.2	166.3	5.01	243.8	156.3	6.38
116.2	83.9	4.93	165.9	176.0	4.94	234.1	166.0	6.31
111.5	88.6	4.93	175.6	185.7	4.91	224.4	175.7	6.36
106.9	93.2	4.93	185.4	195.5	4.93	214.6	185.5	6.33
102.3	97.8	4.91	195.1	205.2	5.03	204.9	195.2	6.27
97.7	102.4	4.93	204.9	215.0	5.19	195.1	205.0	6.33
93.1	107.0	4.97	214.6	224.7	5.35	185.4	214.7	6.32
88.5	111.6	4.99	224.4	234.5	5.41	175.6	224.5	6.28
83.8	116.3	4.99	234.1	244.2	5.49	165.9	234.2	6.26
79.2	120.9	4.97	243.8	253.9	5.53	156.2	243.9	6.27
74.6	125.5	4.96	253.6	263.7	5.41	146.4	253.7	6.25
70.0	130.1	4.94	263.3	273.4	5.22	136.7	263.4	6.08
65.4	134.7	4.94	273.1	283.2	5.16	126.9	273.2	5.90
60.8	139.3	4.96	282.8	292.9	5.10	117.2	282.9	5.85
56.2	143.9	5.00	292.6	302.7	5.03	107.4	292.7	5.77
51.5	148.6	5.01	302.3	312.4	5.09	97.7	302.4	5.72
46.9	153.2	5.03	312.1	322.2	5.29	87.9	312.2	5.78
42.3	157.8	5.05	321.8	331.9	5.37	78.2	321.9	6.01
37.7	162.4	5.06	331.5	341.6	5.31	68.5	331.6	6.35
33.1	167.0	5.07	341.3	351.4	5.32	58.7	341.4	6.77
28.5	171.6	5.10	351.0	361.1	5.29	49.0	351.1	7.16
23.8	176.3	5.11	360.8	370.9	5.21	39.2	360.9	7.41
19.2	180.9	5.07	370.5	380.6	5.21	29.5	370.6	7.57
14.6	185.5	5.10	380.3	390.4	5.17	19.7	380.4	7.71
10.0	190.1	5.14	390.0	400.1	5.05	10.0	390.1	7.72

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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
0.2	62.99	63.24	63.23	56.72	56.21	55.79
0.4	63.07	62.65	62.65	56.39	55.99	55.49
0.5	63.12	62.91	62.56	56.36	55.96	55.42
1.0	62.80	62.77	62.50	56.72	55.82	55.32
2.0	62.73	62.68	62.43	56.21	55.70	55.30
5.0	63.11	62.88	62.54	56.73	56.04	55.51
10.0	62.85	63.10	62.85	56.90	56.40	55.89
45.5	68.23	70.28	72.94	59.75	71.68	60.30
63.2	65.48	68.72	71.29	57.32	84.16	57.85
80.9	63.74	67.31	70.29	51.93	69.39	58.11
98.6	62.21	64.14	65.97	51.29	65.50	55.75
116.3	61.88	67.85	71.31	49.18	59.04	54.52
151.6	61.45	63.33	64.14	47.42	53.95	50.18
169.3	64.44	71.15	75.08	44.53	49.07	52.96
187.0	60.73	66.74	72.94	44.90	48.59	53.15
204.7	53.04	56.60	60.77	43.85	53.40	50.80
222.4	51.95	54.45	57.19	39.93	44.16	50.85
257.8	48.66	53.46	62.87	38.93	38.78	39.29
275.5	49.47	58.42	69.01	39.49	37.68	38.57
293.2	54.36	58.62	56.65	37.45	36.78	37.77
310.9	52.00	52.58	52.04	40.53	36.06	37.31
328.6	51.80	53.61	54.87	42.01	40.27	38.25
363.9	48.44	48.30	48.74	33.32	36.48	41.32
381.6	49.01	48.64	48.31	31.30	33.17	35.36
399.3	46.83	46.37	45.86	29.52	30.79	32.10
417.0	48.69	49.00	49.19	27.92	28.68	29.40
434.7	46.84	45.18	42.90	26.96	27.54	27.56
470.1	42.52	39.61	38.44	24.89	24.73	24.29
487.8	39.67	38.42	37.93	23.47	23.60	23.59
505.5	37.30	36.95	36.74	22.86	23.28	23.39
523.2	35.26	34.87	34.24	22.20	22.69	22.68
540.9	34.19	34.03	33.48	21.03	21.72	21.69
576.3	30.77	30.82	30.37	18.63	19.66	19.71
593.9	29.00	29.18	28.92	17.58	18.67	18.70
611.6	27.07	27.34	27.10	16.71	17.83	17.90
629.3	26.03	26.48	26.40	16.04	17.08	17.21
647.0	25.09	25.36	25.24	15.67	16.54	16.61
664.7	24.28	24.55	24.29	15.44	16.23	16.16
682.4	23.53	24.00	23.72	15.22	15.90	15.66
700.1	22.45	23.07	22.78	14.78	15.57	15.34

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	40.22	41.14	44.00
27.8	57.8	35.10	35.63	35.48
45.5	75.5	31.17	31.79	31.72
63.2	93.2	29.52	29.95	30.02
80.9	110.9	28.00	28.26	28.61
98.6	128.6	27.35	27.58	27.72
116.3	146.3	26.88	27.64	28.00
133.9	163.9	26.00	26.63	27.21
151.6	181.6	26.09	26.67	27.41
169.3	199.3	26.16	26.64	27.15
187.0	217.0	27.19	27.69	27.88
204.7	234.7	27.69	28.11	28.74
222.4	252.4	27.22	27.91	28.96
240.1	270.1	25.42	26.31	26.94
257.8	287.8	23.34	23.64	23.72
275.5	305.5	21.55	21.13	20.90
293.2	323.2	20.18	19.44	18.83
310.9	340.9	19.27	19.00	18.54
328.6	358.6	18.33	18.21	18.12
346.3	376.3	18.07	17.82	17.80
363.9	393.9	18.01	17.66	17.51
381.6	411.6	18.57	18.26	18.06
399.3	429.3	18.76	18.45	18.16
417.0	447.0	18.85	18.35	17.67
434.7	464.7	18.28	17.48	16.99
452.4	482.4	17.22	16.55	16.23
470.1	500.1	16.14	15.73	15.50
487.8	517.8	15.43	15.08	14.86
505.5	535.5	14.62	14.30	14.03
523.2	553.2	13.93	13.56	13.31
540.9	570.9	13.23	12.84	12.44
558.6	588.6	12.30	11.85	11.46
576.3	606.3	11.22	10.78	10.42
593.9	623.9	10.36	9.82	9.51
611.6	641.6	9.69	9.16	8.79
629.3	659.3	9.07	8.56	8.23
647.0	677.0	8.50	8.06	7.70
664.7	694.7	7.92	7.56	7.31
682.4	712.4	7.48	7.12	6.91
700.1	730.1	7.00	6.74	6.50

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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)		
		@LO (dBm)		
		+7	+10	+13
0.3	30.3	1.42	1.36	1.33
0.4	30.4	1.34	1.28	1.25
1.0	31.0	1.27	1.19	1.14
2.0	32.0	1.29	1.19	1.11
5.0	35.0	1.30	1.19	1.10
10.0	40.0	1.31	1.20	1.10
27.8	57.8	1.32	1.19	1.12
45.5	75.5	1.31	1.19	1.12
63.2	93.2	1.26	1.15	1.08
80.9	110.9	1.24	1.12	1.06
98.6	128.6	1.20	1.11	1.06
116.3	146.3	1.18	1.07	1.03
133.9	163.9	1.18	1.10	1.05
151.6	181.6	1.17	1.10	1.08
169.3	199.3	1.15	1.06	1.08
187.0	217.0	1.12	1.06	1.06
204.7	234.7	1.06	1.06	1.10
222.4	252.4	1.08	1.12	1.17
240.1	270.1	1.14	1.23	1.28
257.8	287.8	1.20	1.28	1.31
275.5	305.5	1.20	1.27	1.29
293.2	323.2	1.24	1.26	1.26
310.9	340.9	1.32	1.29	1.26
328.6	358.6	1.40	1.35	1.30
346.3	376.3	1.52	1.46	1.39
363.9	393.9	1.67	1.60	1.53
381.6	411.6	1.72	1.64	1.55
399.3	429.3	1.72	1.62	1.51
417.0	447.0	1.78	1.66	1.60
434.7	464.7	1.83	1.75	1.75
452.4	482.4	1.93	1.90	1.90
470.1	500.1	1.98	1.98	1.99
487.8	517.8	2.05	2.05	2.06
505.5	535.5	2.21	2.20	2.21
523.2	553.2	2.38	2.37	2.36
540.9	570.9	2.53	2.49	2.46
558.6	588.6	2.59	2.54	2.51
576.3	606.3	2.64	2.59	2.57
593.9	623.9	2.78	2.71	2.67
611.6	641.6	2.92	2.84	2.81
629.3	659.3	3.02	2.94	2.89
647.0	677.0	3.09	3.01	2.99
664.7	694.7	3.16	3.08	3.08
682.4	712.4	3.27	3.20	3.20
700.1	730.1	3.33	3.26	3.28

LO (MHz)	LO VSWR (:1)		
	@LO (dBm)		
	+7	+10	+13
0.3	1.83	2.66	3.77
0.4	1.79	2.62	3.73
1.0	1.74	2.58	3.68
2.0	1.71	2.53	3.62
5.0	1.67	2.49	3.57
10.0	1.53	2.33	3.37
27.8	1.47	2.26	3.34
45.5	1.42	2.20	3.22
63.2	1.36	2.06	2.96
80.9	1.35	2.00	2.85
98.6	1.38	2.07	2.92
116.3	1.43	2.16	3.08
133.9	1.47	2.21	3.14
151.6	1.46	2.17	3.03
169.3	1.46	2.13	2.97
187.0	1.50	2.16	2.99
204.7	1.59	2.29	3.15
222.4	1.64	2.38	3.27
240.1	1.66	2.36	3.22
257.8	1.66	2.31	3.14
275.5	1.69	2.33	3.17
293.2	1.81	2.46	3.31
310.9	1.96	2.64	3.48
328.6	2.03	2.75	3.58
346.3	2.04	2.77	3.62
363.9	2.06	2.79	3.65
381.6	2.12	2.86	3.75
399.3	2.18	2.95	3.83
417.0	2.21	2.96	3.82
434.7	2.19	2.90	3.75
452.4	2.17	2.86	3.69
470.1	2.16	2.86	3.73
487.8	2.20	2.93	3.84
505.5	2.27	3.01	3.91
523.2	2.38	3.09	3.95
540.9	2.53	3.18	4.01
558.6	2.73	3.32	4.12
576.3	2.96	3.50	4.28
593.9	3.20	3.67	4.40
611.6	3.43	3.82	4.47
629.3	3.62	3.95	4.54
647.0	3.76	4.11	4.64
664.7	3.86	4.27	4.78
682.4	3.89	4.36	4.87
700.1	3.86	4.38	4.89

IF (OUT) (MHz)	IF VSWR @LO=400.1MHz (:1)		
	@LO (dBm)		
	+7	+10	+13
0.3	1.97	1.72	1.47
0.4	1.97	1.72	1.47
1.0	1.98	1.72	1.47
2.0	1.98	1.72	1.47
5.0	1.99	1.73	1.47
10.0	2.01	1.74	1.47
20.0	2.93	2.59	2.36
30.0	3.16	2.85	2.53
40.0	3.27	2.95	2.61
50.0	3.34	3.03	2.65
60.0	3.29	2.98	2.61
70.0	3.25	2.96	2.60
80.0	3.28	3.00	2.61
90.0	3.30	2.98	2.66
100.0	3.29	2.99	2.69
110.0	3.26	2.95	2.68
120.0	3.24	2.92	2.65
130.0	3.24	2.95	2.66
140.0	3.27	2.99	2.68
150.0	3.28	3.02	2.72
160.0	3.31	3.05	2.76
170.0	3.32	3.06	2.77
180.0	3.27	3.02	2.75
190.0	3.16	2.92	2.69
200.0	3.07	2.84	2.63
210.0	3.04	2.81	2.60
220.0	3.10	2.86	2.63
230.0	3.13	2.91	2.68
240.0	3.11	2.90	2.67
250.0	3.04	2.84	2.61
260.0	2.98	2.77	2.54
270.0	2.91	2.70	2.48
280.0	2.84	2.63	2.44
290.0	2.80	2.60	2.41
300.0	2.83	2.61	2.42
310.0	2.86	2.63	2.43
320.0	2.82	2.61	2.41
330.0	2.74	2.54	2.34
340.0	2.71	2.49	2.28
350.0	2.75	2.51	2.28
360.0	2.76	2.53	2.29
370.0	2.72	2.50	2.27
380.0	2.68	2.45	2.21
390.0	2.68	2.43	2.19
400.0	2.76	2.54	2.31

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	27	47	24	52	28	50	55	52	52	72
1	-	24	+0	29	12	35	30	41	38	39	50	54
2	94	54	47	56	51	49	48	54	47	55	60	57
3	>100	47	35	48	41	59	39	59	48	51	50	49
4	>100	62	69	66	59	71	57	75	56	66	64	66
5	>100	77	69	52	51	54	48	58	47	57	60	63
6	>100	80	72	73	72	69	86	68	74	69	74	79
7	>100	73	81	82	69	63	68	66	64	68	62	78
8	>100	80	92	91	79	80	88	85	81	86	81	76
9	>100	81	78	85	85	85	82	71	74	71	73	73
10	>100	>94	88	94	>94	>94	89	89	94	85	92	89
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 200.1 MHz; 0.00 dBm.

LO IN: 230.01 MHz; +10.00 dBm

IF OUT: 29.91 MHz; -5.51 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	16	30	13	42	16	37	40	34	39	51
1	-	22	+0	33	11	34	30	34	33	31	49	45
2	>100	55	51	55	53	53	50	67	53	62	64	62
3	>100	61	54	60	55	65	52	61	59	64	59	64
4	>100	81	78	>84	83	>84	82	>84	80	>84	>84	>84
5	>100	>84	80	>84	82	84	79	>84	78	>84	>84	>84
6	>100	>84	>84	>84	>84	>84	73	>84	>84	>84	>84	>84
7	>100	>84	>84	>84	>84	>84	>84	75	>84	>84	>84	>84
8	>100	>84	>84	>84	>84	>84	>84	>84	65	>84	>84	>84
9	>100	>84	>84	>84	>84	>84	>84	>84	>84	70	>84	>84
10	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	81	>84
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 200.1 MHz; -10.00 dBm.

LO IN: 230.01 MHz; +10.00 dBm

IF OUT: 29.91 MHz; -15.57 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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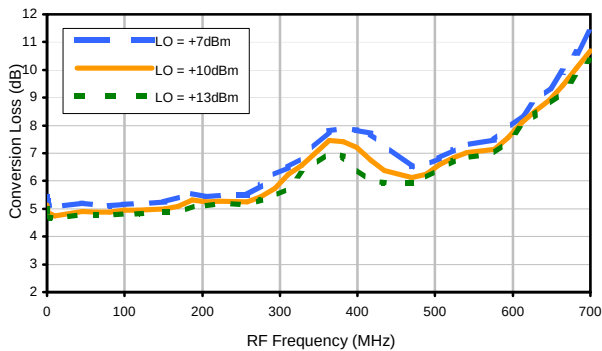


Frequency Mixer

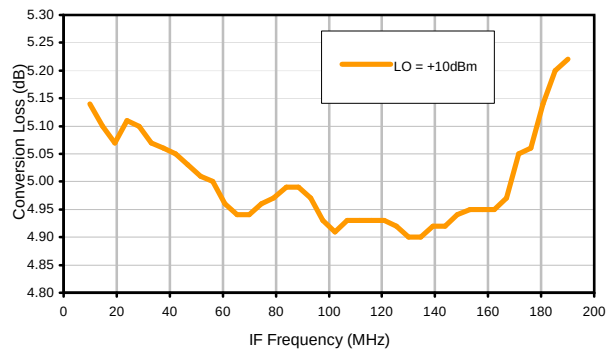
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Typical Performance Curves

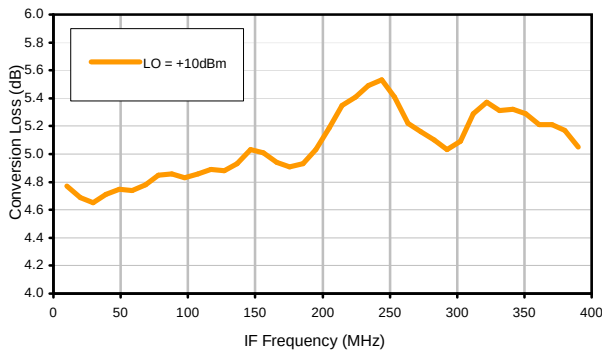
Conversion Loss @ IF=30MHz



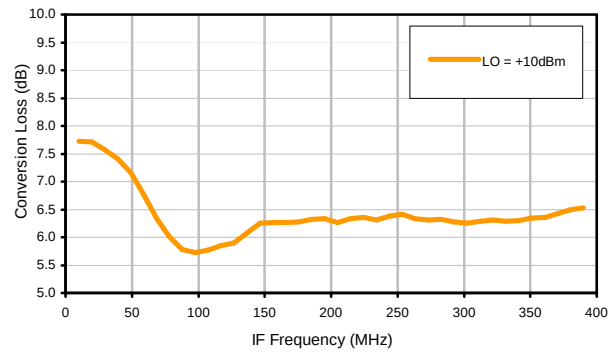
Conversion Loss vs. IF @ RF=200.1MHz



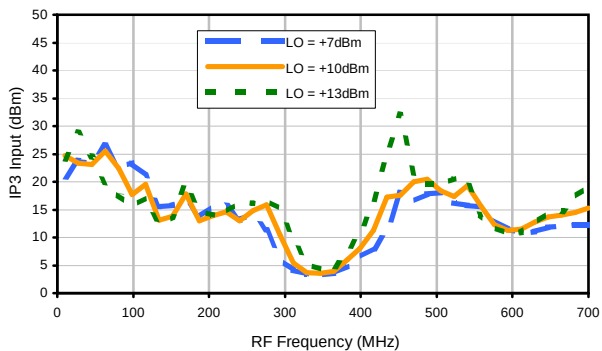
Conversion Loss vs. IF @ RF=10.1MHz



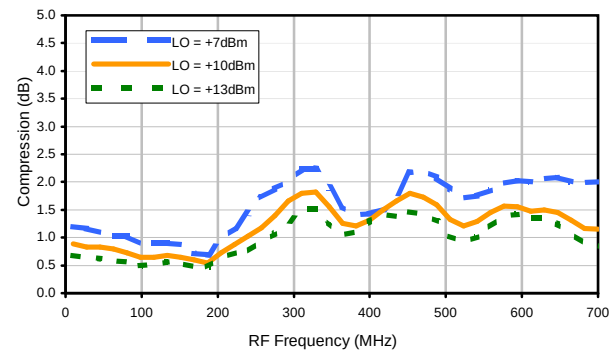
Conversion Loss vs. IF @ RF=400.1MHz



IP3 Input



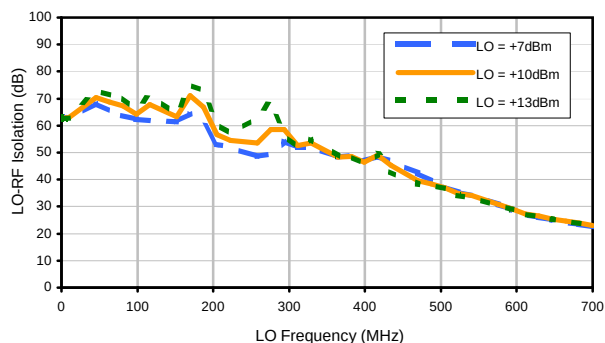
Compression @ RF IN=+5dBm



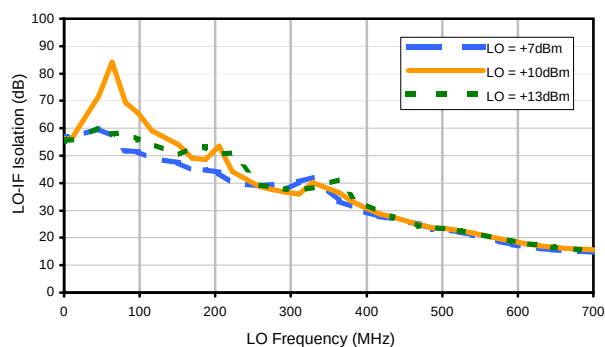
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Typical Performance Curves

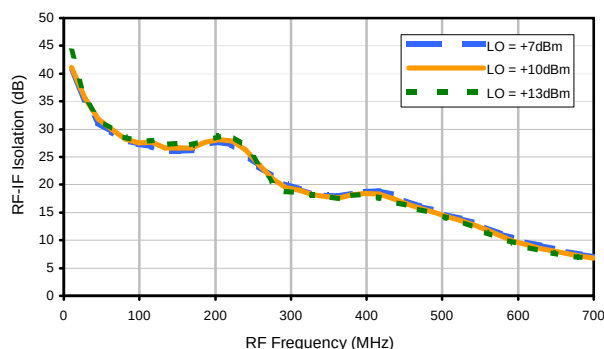
LO-RF Isolation



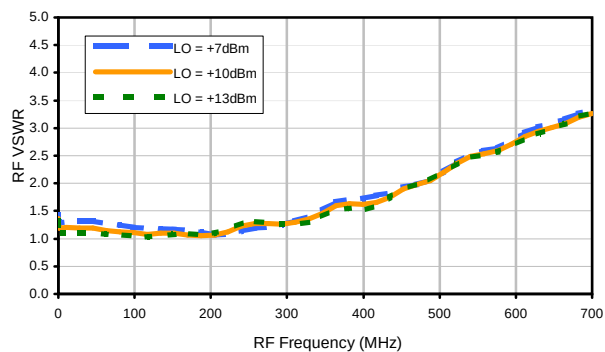
LO-IF Isolation



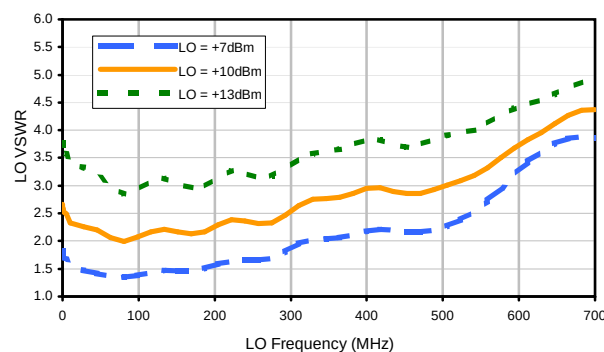
RF-IF Isolation



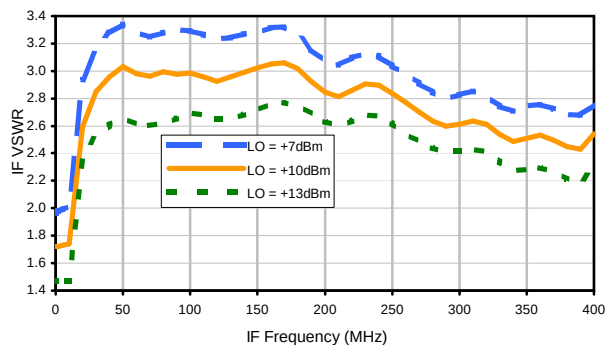
RF VSWR



LO VSWR



IF VSWR



Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	27	47	24	52	28	50	55	52	52	72
1	-	24	+0	29	12	35	30	41	38	39	50	54
2	94	54	47	56	51	49	48	54	47	55	60	57
3	>100	47	35	48	41	59	39	59	48	51	50	49
4	>100	62	69	66	59	71	57	75	56	66	64	66
5	>100	77	69	52	51	54	48	58	47	57	60	63
6	>100	80	72	73	72	69	86	68	74	69	74	79
7	>100	73	81	82	69	63	68	66	64	68	62	78
8	>100	80	92	91	79	80	88	85	81	86	81	76
9	>100	81	78	85	85	85	82	71	74	71	73	73
10	>100	>94	88	94	>94	>94	89	89	94	85	92	89
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions:

RF IN: 200.1 MHz; 0.00 dBm.

LO IN: 230.01 MHz; +10.00 dBm

IF OUT: 29.91 MHz; -5.51 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	16	30	13	42	16	37	40	34	39	51
1	-	22	+0	33	11	34	30	34	33	31	49	45
2	>100	55	51	55	53	53	50	67	53	62	64	62
3	>100	61	54	60	55	65	52	61	59	64	59	64
4	>100	81	78	>84	83	>84	82	>84	80	>84	>84	>84
5	>100	>84	80	>84	82	84	79	>84	78	>84	>84	>84
6	>100	>84	>84	>84	>84	>84	73	>84	>84	>84	>84	>84
7	>100	>84	>84	>84	>84	>84	>84	75	>84	>84	>84	>84
8	>100	>84	>84	>84	>84	>84	>84	>84	65	>84	>84	>84
9	>100	>84	>84	>84	>84	>84	>84	>84	>84	70	>84	>84
10	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	81	>84
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions:

RF IN: 200.1 MHz; -10.00 dBm.

LO IN: 230.01 MHz; +10.00 dBm

IF OUT: 29.91 MHz; -15.57 dBm

Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.

2. + entry denotes harmonics are in (dBc) above IF OUTPUT.

3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

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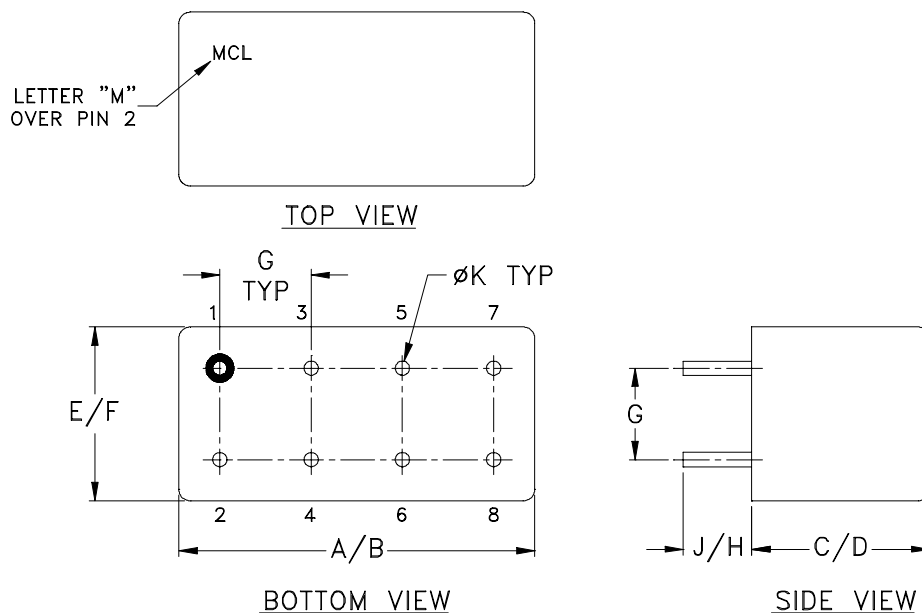


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A01
A04
A05
A06

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	WT, GRAM
A01	.770 (19.56)	.800 (20.32)	.385 (9.78)	.400 (10.16)	.370 (9.40)	.400 (10.16)	.200 (5.08)	.20 (5.08)	.14 (3.56)	.031 (.79)	5.2
A04			.200 (5.08)	.210 (5.33)							3.7
A05			.240 (6.10)	.250 (6.35)							3.7
A06			.285 (7.24)	.310 (7.87)							5.2

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

- Header material: C.R.S.
Pin material: #52 alloy.
Cover material: Cupro-Nickel.
- Pin finish: Electro Tin-Silver.
- Insulated spacer available. Request P/N B14-045-01.
- Tolerance on pin diameter $\pm .005$ inch.
- Glass meniscus 0.015 inch max.
- Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.



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