

Non-Catalog Model

Frequency Mixer

ASK-2

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.



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CASE STYLE : W38

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	1		1000	MHz
	RF (fL to fU)	1		1000	MHz
	IF	0		1000	MHz
Conversion Loss	mid band		6.8	8.0	dB
	Total Range			9.8	dB
LO-RF Isolation	Low Range	40	60		dB
	Mid Range	18	35		dB
	Upper Range	16	26		dB
LO-IF Isolation	Low Range	30	50		dB
	Mid Range	17	25		dB
	Upper Range	10	15		dB
1 dB Comp. Input Power			+1		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]

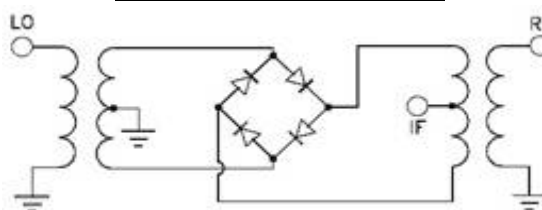
Non-hermetic

ASK plug-in mounting case X65

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	1
RF	4
IF	5
GROUND	2, 3, 6

Electrical Schematics



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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	6.01	5.74	5.57
40.1	70.1	6.47	6.18	5.94
80.1	110.1	6.45	6.14	6.01
110.1	140.1	6.52	6.22	6.07
150.1	180.1	6.66	6.38	6.17
180.1	210.1	6.64	6.34	6.18
220.1	250.1	6.64	6.33	6.16
250.1	280.1	6.80	6.47	6.26
290.1	320.1	6.85	6.51	6.30
320.1	350.1	6.86	6.51	6.35
360.1	390.1	6.87	6.50	6.29
390.1	420.1	7.00	6.60	6.36
430.1	460.1	7.04	6.62	6.37
460.1	490.1	6.98	6.61	6.43
500.1	530.1	7.09	6.68	6.53
530.1	560.1	7.26	6.81	6.63
570.1	600.1	7.37	6.90	6.73
600.1	630.1	7.36	6.86	6.65
640.1	670.1	7.45	6.93	6.75
670.1	700.1	7.51	6.95	6.79
710.1	740.1	7.53	6.95	6.80
740.1	770.1	7.46	6.94	6.91
780.1	810.1	7.56	7.03	7.00
810.1	840.1	7.70	7.19	7.10
850.1	880.1	7.91	7.48	7.43
880.1	910.1	8.04	7.68	7.65
920.1	950.1	8.41	8.10	8.09
950.1	980.1	8.69	8.42	8.38
990.1	1020.1	9.06	8.88	8.86
1000.1	1030.1	9.17	9.00	9.01
1060.1	1090.1	9.74	9.68	9.74
1090.1	1120.1	9.96	9.90	9.97
1130.1	1160.1	10.22	10.14	10.18
1160.1	1190.1	10.45	10.33	10.35
1200.1	1230.1	10.67	10.48	10.44
1230.1	1260.1	10.81	10.54	10.46
1270.1	1300.1	11.24	10.86	10.73
1300.1	1330.1	11.40	10.96	10.81
1340.1	1370.1	11.73	11.18	10.99
1370.1	1400.1	12.16	11.47	11.26

RF (IN) (MHz)	LO (MHz)	IP-3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	21.00	21.13	20.92
40.1	70.1	17.03	16.23	17.03
80.1	110.1	14.41	16.49	21.00
110.1	140.1	16.02	20.89	20.97
150.1	180.1	16.78	20.49	20.91
180.1	210.1	17.82	20.83	20.91
220.1	250.1	20.68	19.17	14.58
250.1	280.1	20.36	19.27	13.67
290.1	320.1	16.20	17.72	13.96
320.1	350.1	14.46	15.95	12.69
360.1	390.1	13.38	13.99	11.24
390.1	420.1	11.59	12.09	10.25
430.1	460.1	10.56	10.83	9.30
460.1	490.1	10.31	10.04	8.28
500.1	530.1	8.29	7.74	6.22
530.1	560.1	8.07	7.42	5.61
570.1	600.1	7.10	5.98	4.45
600.1	630.1	7.18	5.72	4.21
640.1	670.1	5.97	4.90	4.30
670.1	700.1	5.07	4.72	4.29
710.1	740.1	4.84	5.09	4.66
740.1	770.1	4.99	5.42	4.92
780.1	810.1	5.57	6.20	5.25
810.1	840.1	6.42	6.89	5.93
850.1	880.1	7.52	8.06	7.46
880.1	910.1	7.49	8.64	8.69
920.1	950.1	7.36	8.99	9.05
950.1	980.1	8.30	10.42	10.09
990.1	1020.1	9.66	11.81	11.51
1000.1	1030.1	10.34	12.45	11.78
1060.1	1090.1	13.05	16.30	15.79
1090.1	1120.1	11.34	14.98	16.06
1130.1	1160.1	9.40	12.26	15.04
1160.1	1190.1	8.64	10.78	13.67
1200.1	1230.1	7.98	9.59	12.59
1230.1	1260.1	8.25	9.15	11.49
1270.1	1300.1	8.28	9.02	10.81
1300.1	1330.1	8.25	9.31	11.08
1340.1	1370.1	8.12	9.99	11.07
1370.1	1400.1	7.39	10.18	11.93

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	0.82	0.31	0.21
40.1	70.1	0.77	0.47	0.40
80.1	110.1	0.96	0.67	0.50
110.1	140.1	0.78	0.54	0.43
150.1	180.1	0.79	0.60	0.48
180.1	210.1	0.97	0.76	0.63
220.1	250.1	0.89	0.73	0.64
250.1	280.1	0.93	0.76	0.69
290.1	320.1	1.03	0.86	0.81
320.1	350.1	1.06	0.91	0.96
360.1	390.1	1.28	1.14	1.11
390.1	420.1	1.28	1.15	1.12
430.1	460.1	1.47	1.34	1.31
460.1	490.1	1.65	1.50	1.47
500.1	530.1	1.81	1.67	1.59
530.1	560.1	1.85	1.73	1.68
570.1	600.1	1.90	1.84	1.81
600.1	630.1	2.02	1.95	1.94
640.1	670.1	2.11	2.06	2.06
670.1	700.1	2.11	2.09	2.09
710.1	740.1	2.18	2.12	2.11
740.1	770.1	2.27	2.16	2.04
780.1	810.1	2.26	2.13	2.01
810.1	840.1	2.17	2.05	1.97
850.1	880.1	2.01	1.87	1.78
880.1	910.1	1.93	1.76	1.65
920.1	950.1	1.73	1.55	1.48
950.1	980.1	1.51	1.35	1.36
990.1	1020.1	1.33	1.12	1.19
1000.1	1030.1	1.27	1.07	1.15
1060.1	1090.1	1.07	0.78	0.87
1090.1	1120.1	1.06	0.73	0.80
1130.1	1160.1	1.05	0.68	0.72
1160.1	1190.1	1.06	0.65	0.64
1200.1	1230.1	1.06	0.64	0.59
1230.1	1260.1	1.14	0.68	0.56
1270.1	1300.1	1.18	0.69	0.50
1300.1	1330.1	1.26	0.72	0.49
1340.1	1370.1	1.43	0.84	0.52
1370.1	1400.1	1.57	0.95	0.57

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (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)=1000.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+7			+7			+7
490.0	10.1	6.60	10.0	20.1	6.24	990.0	10.1	8.45
479.8	20.3	6.57	30.0	40.1	5.88	970.0	30.1	8.55
469.6	30.5	6.56	50.0	60.1	5.52	950.0	50.1	8.43
459.4	40.7	6.50	70.0	80.1	5.70	930.0	70.1	8.58
449.1	51.0	6.56	90.0	100.1	5.53	910.0	90.1	8.37
438.9	61.2	6.56	110.0	120.1	5.46	890.0	110.1	8.30
428.7	71.4	6.56	130.0	140.1	5.85	870.0	130.1	8.26
418.5	81.6	6.55	150.0	160.1	5.74	850.0	150.1	8.08
408.3	91.8	6.47	170.0	180.1	5.81	830.0	170.1	8.19
398.1	102.0	6.50	190.0	200.1	5.92	810.0	190.1	8.03
387.9	112.2	6.49	210.0	220.1	5.84	790.0	210.1	8.09
377.7	122.4	6.52	230.0	240.1	5.72	770.0	230.1	7.99
367.4	132.7	6.44	250.0	260.1	5.96	750.0	250.1	7.78
357.2	142.9	6.46	270.0	280.1	6.02	730.0	270.1	7.92
347.0	153.1	6.44	310.0	320.1	6.18	710.0	290.1	7.74
336.8	163.3	6.47	330.0	340.1	6.04	690.0	310.1	7.82
326.6	173.5	6.46	370.0	380.1	6.08	670.0	330.1	7.68
316.4	183.7	6.37	390.0	400.1	6.29	650.0	350.1	7.70
306.2	193.9	6.41	430.0	440.1	6.29	630.0	370.1	7.66
296.0	204.1	6.38	450.0	460.1	6.17	610.0	390.1	7.50
285.7	214.4	6.45	490.0	500.1	6.39	570.0	430.1	7.36
275.5	224.6	6.40	510.0	520.1	6.23	550.0	450.1	7.35
265.3	234.8	6.37	550.0	560.1	6.35	510.0	490.1	7.30
255.1	245.0	6.36	570.0	580.1	6.50	490.0	510.1	7.21
234.7	265.4	6.28	610.0	620.1	6.40	450.0	550.1	7.30
224.5	275.6	6.19	630.0	640.1	6.73	430.0	570.1	7.33
204.0	296.1	6.31	670.0	680.1	6.73	390.0	610.1	7.45
193.8	306.3	6.40	690.0	700.1	6.91	370.0	630.1	7.43
173.4	326.7	6.33	730.0	740.1	7.14	330.0	670.1	7.35
163.2	336.9	6.20	750.0	760.1	7.08	310.0	690.1	7.35
142.8	357.3	6.33	790.0	800.1	7.40	270.0	730.1	7.49
132.6	367.5	6.28	810.0	820.1	7.67	250.0	750.1	7.58
112.1	388.0	6.31	850.0	860.1	7.82	210.0	790.1	7.72
101.9	398.2	6.37	870.0	880.1	7.95	190.0	810.1	7.75
81.5	418.6	6.41	910.0	920.1	8.32	150.0	850.1	7.93
71.3	428.8	6.37	930.0	940.1	9.11	130.0	870.1	8.05
50.9	449.2	6.47	970.0	980.1	9.25	90.0	910.1	8.27
40.6	459.5	6.49	990.0	1000.1	9.15	70.0	930.1	8.38
20.2	479.9	6.56	1030.0	1040.1	10.15	30.0	970.1	8.65
10.0	490.1	6.98	1050.0	1060.1	9.71	10.0	990.1	9.13

Frequency Mixer

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+4	+7	+10	+4	+7	+10
40.1	48.87	47.37	46.89	50.24	43.99	41.13
70.1	44.57	43.71	43.06	46.15	39.99	37.17
110.1	41.30	40.39	39.66	42.99	37.07	34.24
140.1	39.53	38.54	37.68	40.12	34.44	31.65
180.1	38.30	37.23	36.36	40.27	33.80	30.64
210.1	37.22	36.23	35.42	39.75	32.86	29.58
250.1	35.62	34.62	33.84	38.69	31.51	28.17
280.1	34.92	34.00	33.18	37.81	30.62	27.21
320.1	33.28	32.51	31.81	36.59	30.14	26.73
350.1	32.04	31.38	30.83	33.95	28.38	25.24
390.1	30.84	30.32	29.88	32.45	27.58	24.49
420.1	30.13	29.65	29.21	31.49	26.88	23.78
460.1	29.15	28.73	28.27	29.57	25.84	23.01
490.1	28.02	27.57	27.06	27.16	23.72	21.29
530.1	26.59	26.10	25.55	25.71	22.58	20.31
560.1	25.49	25.02	24.49	24.71	21.77	19.47
600.1	24.09	23.76	23.25	22.97	20.55	18.42
630.1	23.30	22.94	22.51	21.79	19.67	17.69
670.1	22.39	22.11	21.82	20.36	18.58	16.87
700.1	21.74	21.53	21.44	18.97	17.35	15.87
740.1	21.30	21.21	21.36	17.86	16.24	14.88
770.1	21.02	21.06	21.40	16.89	15.34	13.93
810.1	21.07	21.16	21.67	15.83	14.13	12.86
840.1	21.16	21.41	21.93	15.21	13.57	12.27
880.1	21.52	21.99	22.59	14.23	12.69	11.30
910.1	21.84	22.44	23.13	13.62	12.21	10.90
950.1	22.36	23.04	23.74	12.56	11.30	10.07
980.1	22.82	23.54	24.23	11.87	10.77	9.70
1020.1	23.28	23.99	24.58	10.94	10.54	9.11
1030.1	23.32	24.04	24.60	10.67	10.54	8.93
1090.1	23.30	23.83	24.16	9.52	8.85	8.13
1120.1	22.82	23.22	23.49	8.85	8.29	7.63
1160.1	22.00	22.32	22.54	8.23	7.76	7.22
1190.1	21.31	21.58	21.78	7.86	7.46	7.00
1230.1	20.18	20.42	20.62	7.22	6.91	6.52
1260.1	19.33	19.57	19.80	6.88	6.63	6.29
1300.1	18.36	18.56	18.90	6.39	6.19	5.99
1330.1	17.53	17.78	18.09	6.04	5.86	5.69
1370.1	16.63	16.93	17.23	5.83	5.70	5.51
1400.1	15.90	16.20	16.46	5.50	5.34	5.18

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	48.05	47.14	46.42
40.1	70.1	39.09	38.47	38.01
80.1	110.1	34.02	33.37	33.11
110.1	140.1	32.05	31.55	31.27
150.1	180.1	30.50	29.99	29.72
180.1	210.1	30.24	29.73	29.37
220.1	250.1	29.90	29.26	28.85
250.1	280.1	30.24	29.64	29.27
290.1	320.1	31.30	30.33	29.50
320.1	350.1	32.08	30.70	29.62
360.1	390.1	32.69	31.39	30.12
390.1	420.1	34.58	33.66	32.19
430.1	460.1	32.51	31.22	28.48
460.1	490.1	28.92	27.35	24.49
500.1	530.1	23.49	22.23	20.15
530.1	560.1	21.29	20.19	18.66
570.1	600.1	18.44	17.62	16.80
600.1	630.1	17.02	16.58	16.43
640.1	670.1	15.63	15.53	16.26
670.1	700.1	14.92	15.13	16.32
710.1	740.1	14.52	15.20	16.81
740.1	770.1	15.07	16.15	18.35
780.1	810.1	15.38	16.70	18.82
810.1	840.1	15.88	17.33	19.27
850.1	880.1	17.23	18.65	20.48
880.1	910.1	18.27	19.59	21.17
920.1	950.1	19.55	20.59	21.57
950.1	980.1	20.44	21.11	21.61
990.1	1020.1	21.43	21.93	21.72
1000.1	1030.1	21.29	21.68	21.49
1060.1	1090.1	20.49	20.62	20.31
1090.1	1120.1	19.37	19.26	18.96
1130.1	1160.1	17.84	17.64	17.28
1160.1	1190.1	16.52	16.32	16.09
1200.1	1230.1	15.05	14.80	14.58
1230.1	1260.1	14.22	13.88	13.62
1270.1	1300.1	13.10	12.85	12.64
1300.1	1330.1	12.15	11.84	11.69
1340.1	1370.1	11.21	10.87	10.70
1370.1	1400.1	11.05	10.70	10.51



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IF/RF MICROWAVE COMPONENTS

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12/10/2012
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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+4	+7	+10		+4	+7	+10		+4	+7	+10
10.1	40.1	1.08	1.31	1.28	40.1	1.79	2.71	3.97	10.1	1.42	1.13	1.07
40.1	70.1	1.10	1.11	1.16	70.1	1.68	2.41	3.36	40.1	1.46	1.16	1.05
80.1	110.1	1.07	1.11	1.15	110.1	1.71	2.44	3.38	60.1	1.43	1.14	1.08
110.1	140.1	1.11	1.12	1.15	140.1	1.81	2.65	3.69	90.1	1.44	1.15	1.06
150.1	180.1	1.08	1.10	1.14	180.1	1.78	2.51	3.44	110.1	1.39	1.11	1.10
180.1	210.1	1.10	1.11	1.13	210.1	1.76	2.47	3.34	140.1	1.43	1.14	1.07
220.1	250.1	1.13	1.15	1.18	250.1	1.89	2.68	3.64	160.1	1.38	1.10	1.11
250.1	280.1	1.11	1.13	1.16	280.1	1.88	2.63	3.55	190.1	1.38	1.11	1.11
290.1	320.1	1.14	1.14	1.17	320.1	1.90	2.60	3.45	210.1	1.33	1.07	1.14
320.1	350.1	1.13	1.14	1.18	350.1	2.01	2.77	3.68	240.1	1.34	1.09	1.13
360.1	390.1	1.09	1.12	1.17	390.1	2.07	2.84	3.76	260.1	1.29	1.06	1.18
390.1	420.1	1.10	1.13	1.18	420.1	2.06	2.78	3.65	290.1	1.27	1.07	1.20
430.1	460.1	1.08	1.14	1.21	460.1	2.12	2.83	3.67	310.1	1.25	1.04	1.20
460.1	490.1	1.09	1.16	1.25	490.1	2.29	3.06	3.95	340.1	1.22	1.08	1.24
500.1	530.1	1.10	1.19	1.31	530.1	2.36	3.15	4.06	360.1	1.20	1.07	1.25
530.1	560.1	1.09	1.19	1.31	560.1	2.40	3.17	4.05	390.1	1.15	1.13	1.32
570.1	600.1	1.09	1.20	1.33	600.1	2.53	3.32	4.21	410.1	1.15	1.10	1.30
600.1	630.1	1.15	1.25	1.40	630.1	2.59	3.37	4.24	440.1	1.11	1.18	1.38
640.1	670.1	1.22	1.32	1.49	670.1	2.67	3.42	4.27	460.1	1.10	1.19	1.40
670.1	700.1	1.30	1.41	1.62	700.1	2.78	3.53	4.35	490.1	1.07	1.24	1.46
710.1	740.1	1.47	1.60	1.84	740.1	2.84	3.56	4.34	510.1	1.08	1.24	1.45
740.1	770.1	1.60	1.73	2.01	770.1	2.92	3.61	4.37	540.1	1.10	1.31	1.53
780.1	810.1	1.81	1.96	2.27	810.1	3.03	3.72	4.42	560.1	1.13	1.35	1.58
810.1	840.1	1.99	2.14	2.41	840.1	3.08	3.73	4.40	590.1	1.14	1.38	1.62
850.1	880.1	2.20	2.31	2.53	880.1	3.16	3.79	4.42	610.1	1.18	1.41	1.65
880.1	910.1	2.41	2.51	2.68	910.1	3.21	3.82	4.42	640.1	1.22	1.48	1.73
920.1	950.1	2.72	2.80	2.91	950.1	3.25	3.82	4.38	660.1	1.27	1.54	1.80
950.1	980.1	2.87	2.95	3.03	980.1	3.29	3.82	4.34	690.1	1.28	1.55	1.81
990.1	1020.1	3.25	3.35	3.42	1020.1	3.31	3.80	4.29	710.1	1.35	1.64	1.91
1000.1	1030.1	3.34	3.45	3.50	1030.1	3.31	3.79	4.26	740.1	1.37	1.66	1.92
1060.1	1090.1	3.60	3.79	3.88	1090.1	3.32	3.70	4.11	760.1	1.45	1.77	2.05
1090.1	1120.1	3.84	4.05	4.18	1120.1	3.30	3.67	4.03	790.1	1.46	1.77	2.04
1130.1	1160.1	3.82	4.03	4.16	1160.1	3.28	3.58	3.90	810.1	1.53	1.86	2.14
1160.1	1190.1	3.98	4.21	4.36	1190.1	3.29	3.52	3.81	840.1	1.55	1.88	2.16
1200.1	1230.1	4.14	4.36	4.51	1230.1	3.28	3.47	3.73	860.1	1.64	1.99	2.28
1230.1	1260.1	4.13	4.33	4.47	1260.1	3.22	3.41	3.67	890.1	1.65	1.99	2.27
1270.1	1300.1	4.27	4.43	4.57	1300.1	3.23	3.38	3.56	910.1	1.71	2.05	2.34
1300.1	1330.1	4.40	4.55	4.69	1330.1	3.22	3.31	3.45	940.1	1.76	2.12	2.42
1340.1	1370.1	4.34	4.44	4.57	1370.1	3.19	3.25	3.42	960.1	1.83	2.19	2.48
1370.1	1400.1	4.57	4.67	4.80	1400.1	3.27	3.26	3.31	990.1	1.86	2.23	2.52

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+8	15	10	21	15	27	21	34	34	44
1	-	9	+0	20	18	34	36	36	40	47	50	50
2	>90	41	34	39	33	48	49	46	59	51	50	56
3	>90	>69	61	60	53	55	>69	60	67	62	64	66
4	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
5	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
6	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
7	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
8	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
9	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
10	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 550.1 MHz; -14.00 dBm.
LO IN: 580.1 MHz; +7.00 dBm
IF OUT: 30 MHz; -20.82 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+0	24	19	37	25	41	33	48	52	58
1	-	9	+0	22	21	40	38	44	39	55	51	68
2	73	39	20	36	26	46	51	45	48	54	45	61
3	>90	45	38	41	30	39	58	49	55	55	62	65
4	>90	60	58	47	39	45	43	56	62	55	64	63
5	>90	66	57	63	60	54	50	55	61	62	65	71
6	>90	72	71	66	67	78	50	60	65	62	66	68
7	>90	77	>79	>79	67	74	64	76	57	68	72	68
8	>90	>79	>79	>79	>79	77	>79	75	64	66	73	75
9	>90	>79	>79	>79	>79	>79	>79	>79	67	>79	68	73
10	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	72	>79
		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

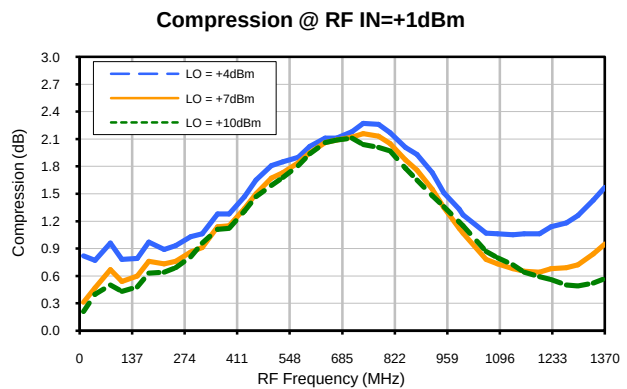
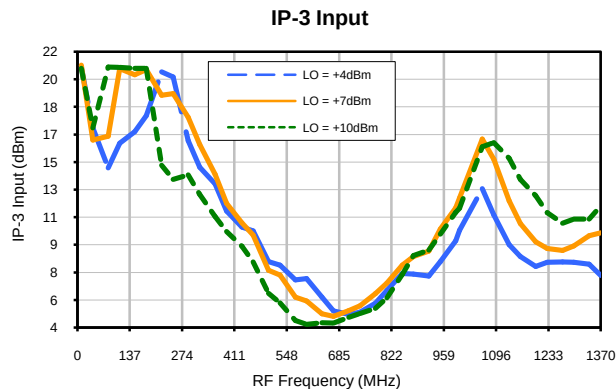
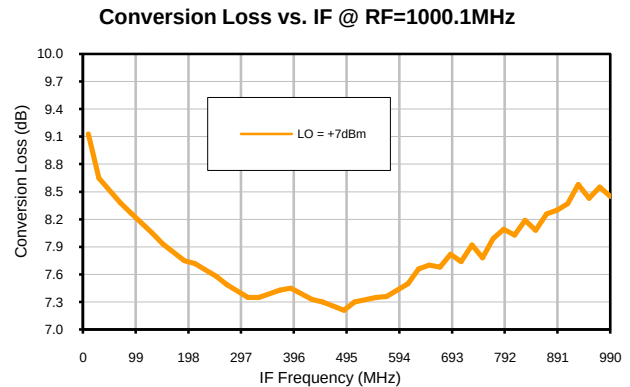
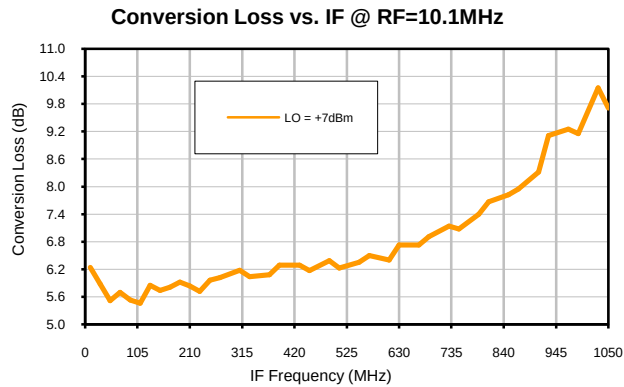
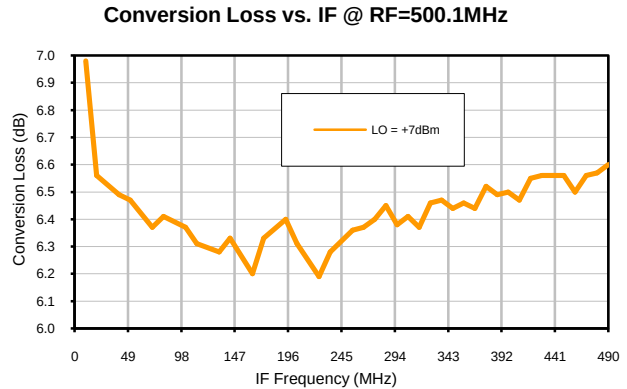
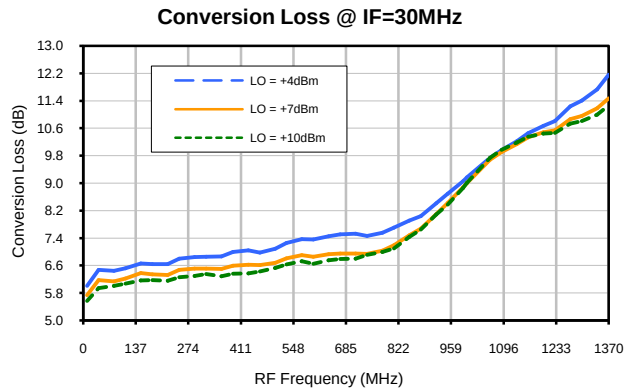
Test conditions: RF IN: 550.1 MHz; -4.00 dBm.
LO IN: 580.1 MHz; +7.00 dBm
IF OUT: 30 MHz; -11.4 dBm

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

Frequency Mixer

Typical Performance Curves

ASK-2



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IF/RF MICROWAVE COMPONENTS

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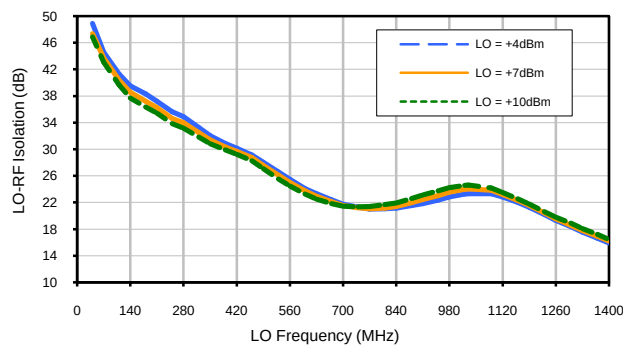
REV. OR
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Frequency Mixer

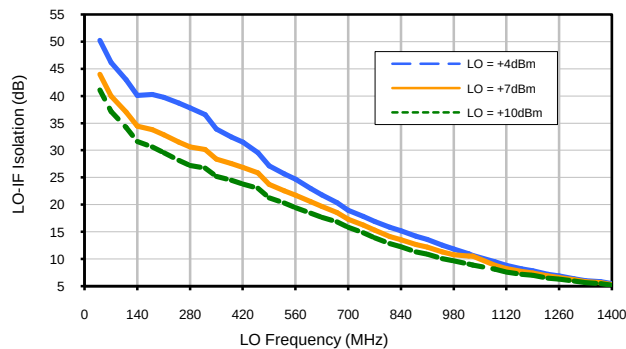
Typical Performance Curves

ASK-2

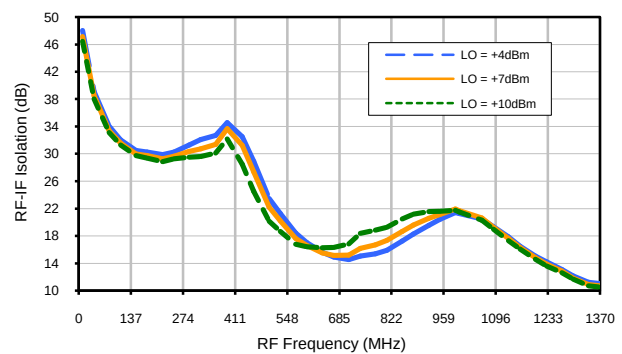
LO-RF Isolation



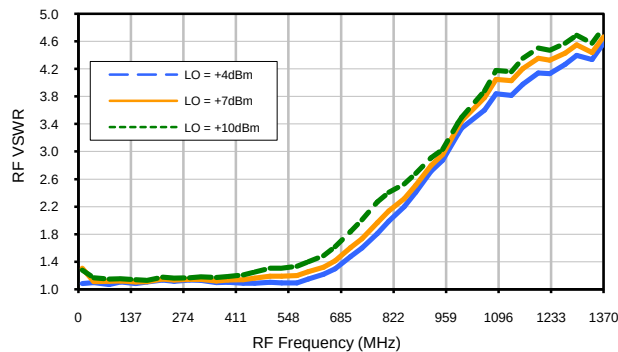
LO-IF Isolation



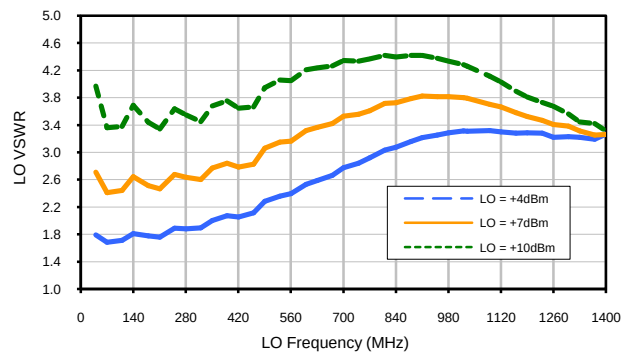
RF-IF Isolation



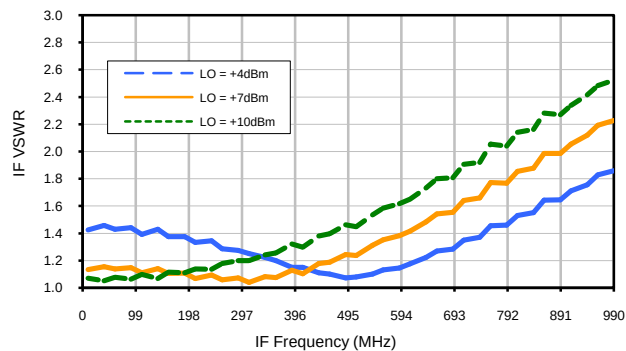
RF VSWR



LO VSWR



IF VSWR



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IF/RF MICROWAVE COMPONENTS

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+8	15	10	21	15	27	21	34	34	44
1	-	9	+0	20	18	34	36	36	40	47	50	50
2	>90	41	34	39	33	48	49	46	59	51	50	56
3	>90	>69	61	60	53	55	>69	60	67	62	64	66
4	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
5	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
6	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
7	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
8	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
9	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
10	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 550.1 MHz; -14.00 dBm.
LO IN: 580.1 MHz; +7.00 dBm
IF OUT: 30 MHz; -20.82 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+0	24	19	37	25	41	33	48	52	58
1	-	9	+0	22	21	40	38	44	39	55	51	68
2	73	39	20	36	26	46	51	45	48	54	45	61
3	>90	45	38	41	30	39	58	49	55	55	62	65
4	>90	60	58	47	39	45	43	56	62	55	64	63
5	>90	66	57	63	60	54	50	55	61	62	65	71
6	>90	72	71	66	67	78	50	60	65	62	66	68
7	>90	77	>79	>79	67	74	64	76	57	68	72	68
8	>90	>79	>79	>79	>79	77	>79	75	64	66	73	75
9	>90	>79	>79	>79	>79	>79	>79	>79	67	>79	68	73
10	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	72	>79
		0	1	2	3	4	5	6	7	8	9	10

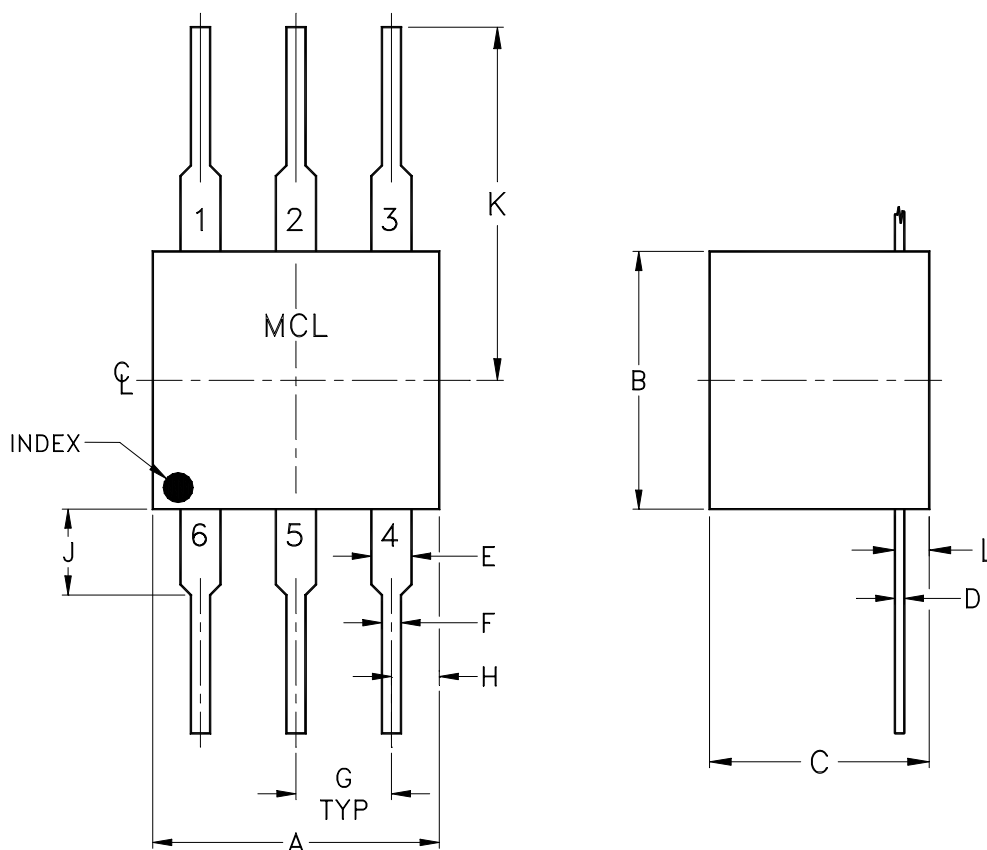
LO HARMONICS ORDER

Test conditions: RF IN: 550.1 MHz; -4.00 dBm.
LO IN: 580.1 MHz; +7.00 dBm
IF OUT: 30 MHz; -11.4 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 represents the Harmonics level of the RF Input Signal to the mixer

Outline Dimensions

W38



CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
W38	.30 (7.62)	.27 (6.86)	.23 (5.84)	.010 (0.25)	.042 (1.07)	.020 (0.51)	.100 (2.54)	.05 (1.27)	.09 (2.29)	.31 (7.87)	.036 (0.91)	.50

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

Notes:

- Case material: Plastic.
Termination finish: For RoHS Case Styles: Tin Plate over Nickel Plate.
For RoHS-5 Case Styles: Tin-Lead Plate.



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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
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, 245°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
Lead Integrity	2 Pound Pull, perpendicular to edge of unit	MIL-STD-202, Method 211, 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