

Non-Catalog Model

Frequency Mixer

Level 7 (LO Power +7 dBm)

GRA-1

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 : D09

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	5		500	MHz
	RF (fL to fU)	5		500	MHz
	IF	0		500	MHz
Conversion Loss	mid band		6.0	7.0	dB
	Total Range			8.5	dB
LO-RF Isolation	Low Range	45	50		dB
	Mid Range	30	45		dB
	Upper Range	25	35		dB
LO-IF Isolation	Low Range	35	45		dB
	Mid Range	25	40		dB
	Upper Range	20	30		dB
1 dB Comp. Input Power			+1		dBm

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

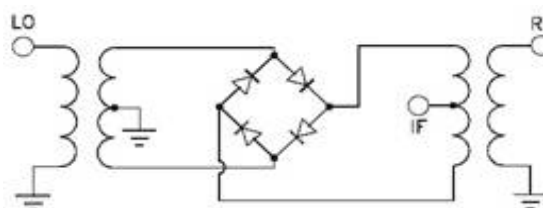
Mid Range = [10fL to fU/2]

Upper Range = [fU/2 to fU]

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	1
RF	6
IF	4
GROUND	2, 3, 5

Electrical Schematics



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Typical Performance Data

RF (MHz)	LO (MHz)	CONVERSION LOSS (dB)			LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
		@LO (dBm)				@LO (dBm)			@LO (dBm)		
		+4	+7	+10		+4	+7	+10	+4	+7	+10
0.5	30.5	7.78	7.29	7.01	0.5	64.0	67.0	64.9	64.0	67.0	56.9
1.0	31.0	7.34	6.89	6.61	1.0	64.0	67.0	63.2	64.0	62.7	56.3
2.0	32.0	6.97	6.49	6.20	2.0	64.0	67.0	61.1	64.0	61.3	55.7
5.0	35.0	6.39	6.01	5.80	5.0	64.0	67.0	60.3	64.0	60.6	55.5
10.0	40.0	6.40	5.99	5.75	10.0	64.0	67.0	59.6	64.0	59.4	55.3
20.0	50.0	6.46	6.02	5.75	20.0	64.0	67.0	58.9	64.0	59.1	55.1
32.7	62.7	6.37	5.96	5.74	32.7	64.0	59.3	56.9	64.0	57.9	54.2
50.0	80.0	6.28	5.91	5.71	50.0	58.1	56.0	54.5	64.0	56.1	53.1
65.0	95.0	6.22	5.87	5.64	65.0	54.5	53.8	52.9	57.3	54.1	51.7
100.0	70.0	6.13	5.81	5.66	100.0	50.4	49.9	48.9	51.3	49.5	48.0
161.6	131.6	6.13	5.84	5.70	161.6	45.3	44.6	44.0	44.2	43.6	43.3
200.0	170.0	6.27	5.99	5.82	200.0	42.2	41.5	41.3	41.3	40.8	40.9
226.1	196.1	6.26	5.95	5.75	226.1	41.0	40.6	40.7	40.0	40.0	40.2
258.3	228.3	6.19	5.89	5.72	258.3	39.9	39.4	39.6	38.3	37.8	38.7
306.7	276.7	6.26	5.99	5.84	306.7	36.8	37.3	37.7	35.8	36.4	36.9
355.0	325.0	6.57	6.23	6.05	355.0	34.2	34.9	35.7	33.8	34.3	35.1
403.3	373.3	6.74	6.32	6.07	403.3	33.6	33.7	34.3	33.7	33.8	34.2
451.7	421.7	7.29	6.68	6.25	451.7	33.9	33.7	34.1	34.4	33.2	33.2
483.9	453.9	7.77	7.17	6.69	483.9	34.0	34.2	34.7	35.0	34.5	34.4
500.0	470.0	7.86	7.25	6.77	500.0	34.2	34.5	35.1	34.6	34.4	34.4

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Typical Performance Data

RF/LO (MHz)	RF VSWR (:1)			LO VSWR (:1)			IF (MHz)	IF VSWR (:1)			LO/RF (MHz)	max. DC output (mV)	DC Offset (mV)
	@LO (dBm)			@LO (dBm)				@LO (dBm)			@LO (dBm)		
	+4	+7	+10	+4	+7	+10		+4	+7	+10	+7		
5.0	1.22	1.21	1.25	1.36	1.98	2.99	5.0	1.47	1.28	1.16	10.0	-270.8	-0.24
17.7	1.12	1.03	1.09	1.29	1.93	2.84	17.7	1.48	1.29	1.17	20.0	-267.8	-0.23
30.4	1.10	1.02	1.09	1.30	1.96	2.82	30.4	1.48	1.30	1.18	24.0	-265.0	-0.21
55.8	1.11	1.06	1.12	1.27	1.86	2.69	55.8	1.50	1.32	1.21	50.0	-261.2	-0.19
81.2	1.12	1.10	1.14	1.25	1.83	2.61	81.2	1.53	1.35	1.25	80.0	-263.8	-0.16
106.5	1.14	1.13	1.17	1.28	1.87	2.68	106.5	1.58	1.40	1.30	100.0	-264.4	-0.15
119.2	1.16	1.15	1.19	1.29	1.88	2.67	119.2	1.60	1.43	1.33	122.0	-267.7	-0.12
144.6	1.19	1.19	1.23	1.31	1.91	2.63	144.6	1.69	1.52	1.42	150.0	-263.5	-0.11
170.0	1.22	1.23	1.26	1.32	1.91	2.59	170.0	1.73	1.54	1.43	178.0	-262.1	-0.07
208.1	1.28	1.29	1.33	1.35	1.92	2.62	208.1	1.86	1.66	1.54	200.0	-261.2	-0.13
233.5	1.33	1.35	1.38	1.39	1.91	2.59	233.5	1.96	1.74	1.62	248.0	-265.8	-0.10
271.5	1.41	1.42	1.46	1.43	1.99	2.65	271.5	2.10	1.88	1.73	276.0	-270.4	-0.18
296.9	1.47	1.49	1.52	1.48	1.99	2.63	296.9	2.18	1.97	1.80	304.0	-266.9	-0.26
322.3	1.53	1.56	1.58	1.52	1.99	2.66	322.3	2.29	2.07	1.90	332.0	-250.0	-0.23
360.4	1.62	1.65	1.68	1.62	2.03	2.64	360.4	2.45	2.19	2.03	360.0	-231.2	-0.47
398.5	1.73	1.74	1.77	1.73	2.16	2.72	398.5	2.59	2.33	2.13	388.0	-211.9	-0.18
423.8	1.80	1.81	1.83	1.77	2.20	2.83	423.8	2.65	2.40	2.20	430.0	-189.5	-0.45
461.9	1.92	1.93	1.94	1.80	2.27	2.90	461.9	2.76	2.49	2.29	458.0	-184.4	-0.03
487.3	1.99	2.00	2.00	1.82	2.25	2.87	487.3	2.81	2.53	2.32	486.0	-184.5	-0.13
500.0	2.03	2.03	2.02	1.83	2.26	2.86	500.0	2.79	2.55	2.33	500.0	-181.3	-0.33

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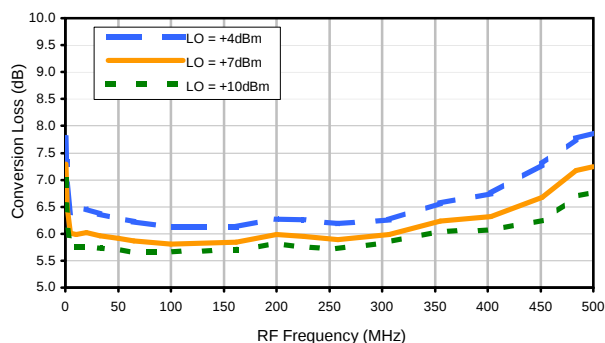


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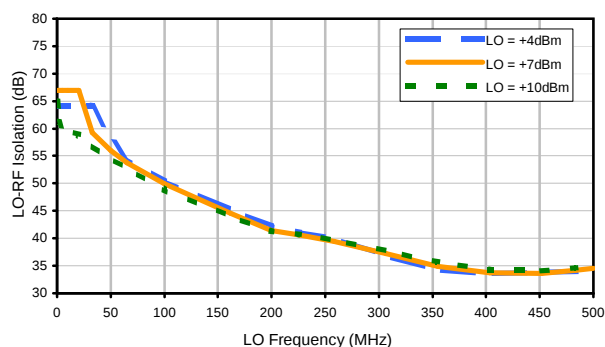


Typical Performance Curves

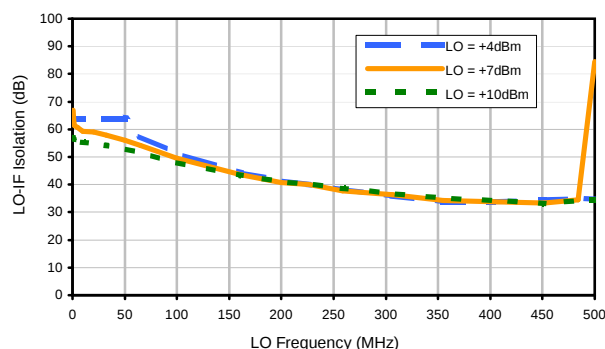
Conversion Loss



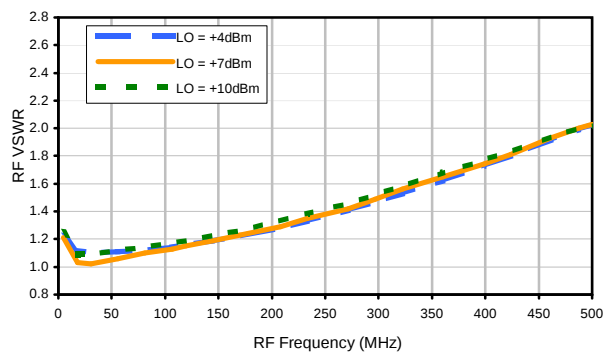
LO-RF Isolation



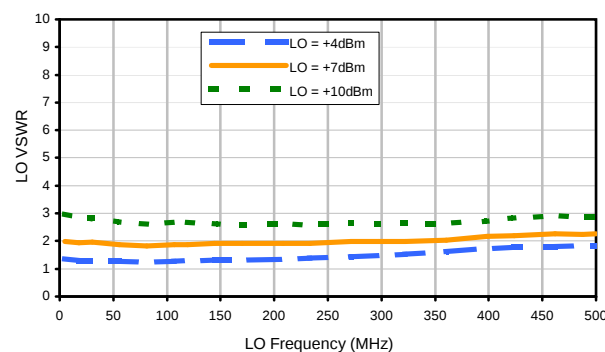
LO-IF Isolation



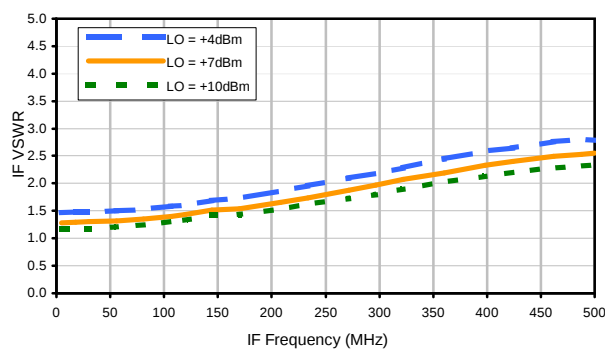
RF VSWR



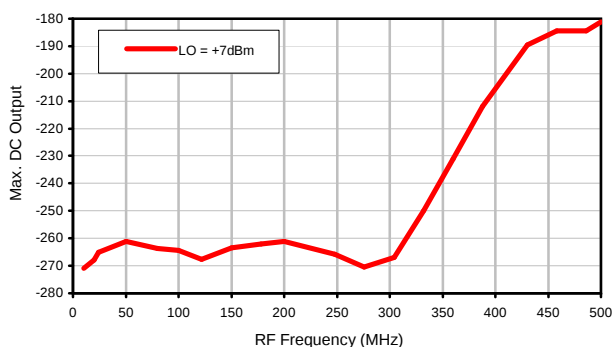
LO VSWR



IF VSWR



Max. DC Output



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