

Non-Catalog Model

Frequency Mixer

LMX-123

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.



Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : BB48

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency	LO (fL to fU)	10		3000	MHz
	RF (fL to fU)	10		3000	MHz
	IF	10		1000	MHz
Conversion Loss	mid band			8.0	dB
	Total Range			8.5	dB
LO-RF Isolation	Low Range	25	35		dB
	Mid Range	20	35		dB
	Upper Range	15	30		dB
LO-IF Isolation	Low Range	25	35		dB
	Mid Range	25	30		dB
	Upper Range	20	30		dB
1 dB Comp. Input Power			+5		dBm

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

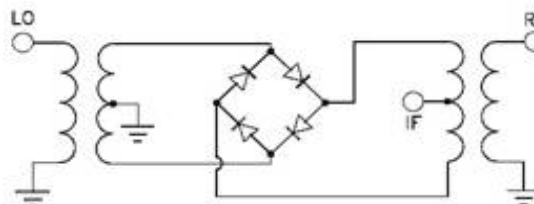
Mid Range = [10fL to fU/2]

Upper Range = [fU/2 to fU]

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	5
IF	4
GROUND	1, 2, 3, 6, 7

Electrical Schematics



Frequency Mixer

LMX-123

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				
10.1	40.1	7.37	6.76	6.47	10.1	40.1	27.05	22.93	21.59	10.1	40.1	0.43	0.19	0.09				
110.4	140.4	7.44	6.87	6.53	110.4	140.4	19.58	20.58	20.15	110.4	140.4	0.34	0.10	0.06				
210.7	240.7	7.47	6.90	6.57	210.7	240.7	18.06	18.57	20.72	210.7	240.7	0.33	0.12	0.05				
310.9	340.9	7.62	6.98	6.61	310.9	340.9	17.21	18.43	20.93	310.9	340.9	0.26	0.09	0.04				
411.2	441.2	7.67	7.01	6.63	411.2	441.2	16.92	19.61	21.16	411.2	441.2	0.27	0.10	0.06				
511.5	541.5	7.71	7.02	6.64	511.5	541.5	17.74	19.56	25.08	511.5	541.5	0.31	0.13	0.06				
611.8	641.8	7.72	7.04	6.64	611.8	641.8	16.93	19.86	23.78	611.8	641.8	0.26	0.13	0.07				
712.1	742.1	7.62	6.97	6.61	712.1	742.1	17.76	20.28	20.89	712.1	742.1	0.32	0.15	0.08				
792.3	822.3	7.63	6.98	6.61	792.3	822.3	17.39	19.35	19.81	792.3	822.3	0.32	0.16	0.08				
892.6	922.6	7.55	6.94	6.61	892.6	922.6	19.17	22.43	20.08	892.6	922.6	0.38	0.17	0.09				
972.8	1002.8	7.53	6.91	6.60	972.8	1002.8	20.60	21.38	19.74	972.8	1002.8	0.36	0.17	0.11				
1073.1	1103.1	7.42	6.85	6.54	1073.1	1103.1	20.63	18.31	17.87	1073.1	1103.1	0.39	0.18	0.11				
1153.3	1183.3	7.41	6.84	6.54	1153.3	1183.3	18.63	18.05	18.60	1153.3	1183.3	0.37	0.17	0.11				
1253.6	1283.6	7.42	6.83	6.55	1253.6	1283.6	18.67	17.71	18.41	1253.6	1283.6	0.40	0.18	0.11				
1333.8	1363.8	7.43	6.84	6.57	1333.8	1363.8	19.48	19.05	19.21	1333.8	1363.8	0.42	0.20	0.12				
1434.1	1464.1	7.58	6.96	6.68	1434.1	1464.1	25.34	21.81	21.40	1434.1	1464.1	0.42	0.20	0.11				
1514.3	1544.3	7.77	7.09	6.79	1514.3	1544.3	25.65	27.57	28.29	1514.3	1544.3	0.39	0.19	0.09				
1614.6	1644.6	7.97	7.21	6.88	1614.6	1644.6	19.86	27.91	30.89	1614.6	1644.6	0.38	0.19	0.11				
1694.8	1724.8	8.22	7.43	7.03	1694.8	1724.8	17.42	22.99	29.11	1694.8	1724.8	0.29	0.16	0.09				
1795.1	1825.1	8.49	7.58	7.12	1795.1	1825.1	16.70	21.94	24.54	1795.1	1825.1	0.19	0.11	0.08				
1875.3	1905.3	8.75	7.79	7.28	1875.3	1905.3	15.79	21.08	22.53	1875.3	1905.3	0.20	0.13	0.08				
1975.6	2005.6	8.85	7.83	7.30	1975.6	2005.6	16.06	18.60	18.86	1975.6	2005.6	0.18	0.13	0.10				
2055.8	2085.8	8.81	7.83	7.30	2055.8	2085.8	15.40	17.11	17.69	2055.8	2085.8	0.18	0.17	0.13				
2156.1	2186.1	8.79	7.79	7.26	2156.1	2186.1	14.76	16.01	16.61	2156.1	2186.1	0.24	0.19	0.16				
2236.3	2266.3	8.75	7.83	7.30	2236.3	2266.3	13.56	15.25	15.90	2236.3	2266.3	0.28	0.22	0.20				
2336.6	2366.6	8.63	7.73	7.25	2336.6	2366.6	12.86	13.73	15.17	2336.6	2366.6	0.38	0.25	0.22				
2416.8	2446.8	8.48	7.65	7.21	2416.8	2446.8	12.75	14.14	14.85	2416.8	2446.8	0.42	0.30	0.24				
2517.1	2547.1	8.46	7.62	7.19	2517.1	2547.1	12.55	13.50	14.52	2517.1	2547.1	0.50	0.34	0.28				
2597.3	2627.3	8.39	7.63	7.21	2597.3	2627.3	12.54	13.67	14.33	2597.3	2627.3	0.52	0.36	0.31				
2697.6	2727.6	8.40	7.66	7.29	2697.6	2727.6	11.83	13.04	14.07	2697.6	2727.6	0.57	0.38	0.32				
2777.8	2807.8	8.40	7.71	7.35	2777.8	2807.8	11.18	12.80	13.26	2777.8	2807.8	0.62	0.41	0.32				
2878.1	2908.1	8.46	7.78	7.46	2878.1	2908.1	11.24	12.64	13.51	2878.1	2908.1	0.58	0.41	0.30				
2958.3	2988.3	8.47	7.84	7.54	2958.3	2988.3	11.16	12.76	13.94	2958.3	2988.3	0.66	0.41	0.30				
3058.6	3088.6	8.59	8.03	7.76	3058.6	3088.6	11.44	13.20	14.23	3058.6	3088.6	0.59	0.36	0.27				
3138.8	3168.8	8.80	8.24	8.01	3138.8	3168.8	12.11	13.81	15.44	3138.8	3168.8	0.54	0.31	0.24				
3239.1	3269.1	9.10	8.57	8.34	3239.1	3269.1	12.70	14.22	15.67	3239.1	3269.1	0.49	0.28	0.20				
3319.3	3349.3	9.47	8.95	8.72	3319.3	3349.3	13.41	15.24	17.07	3319.3	3349.3	0.38	0.22	0.15				
3419.6	3449.6	9.96	9.45	9.19	3419.6	3449.6	15.70	16.18	17.71	3419.6	3449.6	0.31	0.19	0.13				
3499.8	3529.8	10.40	9.83	9.50	3499.8	3529.8	17.86	17.45	18.70	3499.8	3529.8	0.26	0.17	0.14				
3600.1	3630.1	11.04	10.45	10.01	3600.1	3630.1	17.18	17.26	18.46	3600.1	3630.1	0.20	0.14	0.15				

REV. X2

LMX-123

100817

Page 1 of 5



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0006 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see



Frequency Mixer

LMX-123

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1500.1MHz (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)=3000.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+10			+10			+10
1000.0	500.1	7.06	10.0	20.1	6.71	1000.0	2000.1	7.67
979.8	520.3	7.08	30.2	40.3	6.57	979.8	2020.3	7.64
959.6	540.5	7.10	50.4	60.5	6.60	959.6	2040.5	7.69
939.4	560.7	7.05	70.6	80.7	6.64	939.4	2060.7	7.60
919.2	580.9	7.05	90.8	100.9	6.64	919.2	2080.9	7.66
899.0	601.1	7.01	111.0	121.1	6.63	899.0	2101.1	7.63
878.8	621.3	7.02	131.2	141.3	6.59	878.8	2121.3	7.60
858.6	641.5	7.04	151.4	161.5	6.61	858.6	2141.5	7.62
838.4	661.7	7.03	171.6	181.7	6.65	838.4	2161.7	7.61
818.2	681.9	6.97	191.8	201.9	6.67	818.2	2181.9	7.63
798.0	702.1	6.99	212.0	222.1	6.64	798.0	2202.1	7.58
777.8	722.3	6.90	232.2	242.3	6.66	777.8	2222.4	7.57
757.6	742.6	6.96	252.5	262.6	6.69	757.6	2242.6	7.55
737.4	762.8	6.99	272.7	282.8	6.69	737.4	2262.8	7.54
717.1	783.0	6.95	292.9	303.0	6.70	717.1	2283.0	7.54
696.9	803.2	6.91	313.1	323.2	6.72	696.9	2303.2	7.46
676.7	823.4	6.90	333.3	343.4	6.72	676.7	2323.4	7.47
656.5	843.6	6.89	353.5	363.6	6.72	656.5	2343.6	7.46
636.3	863.8	6.91	373.7	383.8	6.77	636.3	2363.8	7.46
616.1	884.0	6.90	393.9	404.0	6.76	616.1	2384.0	7.45
575.7	924.4	6.86	434.3	444.4	6.79	575.7	2424.4	7.43
555.5	944.6	6.90	454.5	464.6	6.78	555.5	2444.6	7.43
515.1	985.0	6.86	494.9	505.0	6.78	515.1	2485.0	7.43
494.9	1005.2	6.87	515.1	525.2	6.75	494.9	2505.2	7.43
454.5	1045.6	6.87	555.5	565.6	6.80	454.5	2545.6	7.46
434.3	1065.8	6.89	575.7	585.8	6.83	434.3	2565.8	7.49
393.9	1106.2	6.86	616.1	626.2	6.80	393.9	2606.2	7.47
373.7	1126.4	6.90	636.3	646.4	6.84	373.7	2626.4	7.51
333.3	1166.8	6.88	676.7	686.8	6.87	333.3	2666.8	7.55
313.1	1187.0	6.92	696.9	707.0	6.82	313.1	2687.0	7.55
272.7	1227.5	6.94	737.4	747.5	6.89	272.7	2727.5	7.56
252.5	1247.7	6.98	757.6	767.7	6.87	252.5	2747.7	7.56
212.0	1288.1	6.96	798.0	808.1	6.89	212.0	2788.1	7.57
191.8	1308.3	6.96	818.2	828.3	6.90	191.8	2808.3	7.56
151.4	1348.7	7.01	858.6	868.7	6.95	151.4	2848.7	7.63
131.2	1368.9	7.01	878.8	888.9	6.94	131.2	2868.9	7.66
90.8	1409.3	7.01	919.2	929.3	6.99	90.8	2909.3	7.69
70.6	1429.5	7.07	939.4	949.5	6.97	70.6	2929.5	7.72
30.2	1469.9	7.00	979.8	989.9	7.00	30.2	2969.9	7.80
10.0	1490.1	7.08	1000.0	1010.1	6.95	10.0	2990.1	7.92

REV. X2

LMX-123

100817

Page 2 of 5



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)					@LO (dBm)		
	+7	+10	+13	+7	+10	+13			+7	+10	+13
40.1	32.66	35.30	37.90	37.38	40.83	43.65	10.1	40.1	31.58	32.12	30.42
140.4	32.47	35.13	37.82	38.82	42.43	45.42	110.4	140.4	31.85	32.07	31.98
240.7	32.91	35.67	38.38	39.36	42.79	44.95	210.7	240.7	32.77	33.00	33.22
340.9	33.32	36.22	38.95	39.95	42.98	44.03	310.9	340.9	33.68	33.98	34.11
441.2	34.12	37.24	40.00	41.00	43.48	43.35	411.2	441.2	35.62	35.89	35.93
541.5	35.10	38.63	41.41	42.08	43.75	42.54	511.5	541.5	38.28	37.87	37.60
641.8	36.49	40.92	43.50	43.44	44.05	41.79	611.8	641.8	43.54	42.00	40.85
742.1	38.14	44.37	45.83	45.52	44.83	41.29	712.1	742.1	59.33	50.64	47.79
822.3	39.29	49.14	45.99	47.34	44.48	40.35	792.3	822.3	45.96	48.13	51.65
922.6	40.35	59.91	44.79	49.95	44.39	40.03	892.6	922.6	39.28	39.91	40.30
1002.8	39.77	53.00	43.28	52.29	44.84	39.70	972.8	1002.8	36.31	37.02	37.30
1103.1	37.93	45.80	42.23	56.19	46.43	40.28	1073.1	1103.1	34.33	34.77	34.86
1183.3	36.03	41.65	41.14	51.95	48.12	40.74	1153.3	1183.3	33.11	33.59	33.96
1283.6	34.29	38.31	39.47	54.96	47.07	40.70	1253.6	1283.6	32.54	33.03	33.57
1363.8	32.70	36.18	38.42	49.88	48.36	41.41	1333.8	1363.8	31.70	32.55	33.35
1464.1	31.25	34.42	37.16	46.38	50.77	42.76	1434.1	1464.1	31.05	32.20	33.04
1544.3	30.32	33.22	36.03	44.52	51.21	44.21	1514.3	1544.3	30.31	31.66	32.38
1644.6	29.21	31.68	34.28	41.98	47.96	45.84	1614.6	1644.6	29.39	30.50	31.18
1724.8	28.47	30.65	33.07	40.79	45.62	47.09	1694.8	1724.8	28.55	29.55	30.15
1825.1	27.86	29.71	31.86	40.11	43.89	46.32	1795.1	1825.1	28.11	28.99	29.61
1905.3	27.50	29.08	30.91	39.69	42.85	45.25	1875.3	1905.3	28.89	29.58	30.03
2005.6	27.17	28.66	30.41	39.79	42.75	44.94	1975.6	2005.6	28.83	29.35	29.65
2085.8	27.16	28.53	30.31	40.28	43.36	45.94	2055.8	2085.8	29.17	29.54	29.82
2186.1	27.25	28.59	30.33	41.35	44.53	48.15	2156.1	2186.1	29.97	30.22	30.31
2266.3	27.36	28.67	30.27	42.90	46.76	50.18	2236.3	2266.3	30.04	29.82	29.81
2366.6	27.66	28.98	30.63	44.79	51.11	51.69	2336.6	2366.6	29.19	28.99	28.94
2446.8	27.98	29.39	31.19	44.31	53.03	51.81	2416.8	2446.8	29.05	28.84	28.67
2547.1	28.47	30.08	32.01	44.55	54.27	53.88	2517.1	2547.1	29.02	28.80	28.73
2627.3	28.83	30.59	32.59	45.81	57.98	51.20	2597.3	2627.3	28.89	28.56	28.58
2727.6	29.35	31.39	33.54	46.96	60.60	49.59	2697.6	2727.6	28.50	27.95	27.80
2807.8	29.85	32.14	34.59	47.79	64.36	48.76	2777.8	2807.8	28.78	28.29	27.94
2908.1	30.53	33.13	35.76	49.52	60.63	46.54	2878.1	2908.1	29.31	29.00	28.78
2988.3	30.95	33.75	36.32	51.61	55.04	44.98	2958.3	2988.3	29.55	29.26	29.02
3088.6	31.53	34.63	37.13	52.45	52.52	44.25	3058.6	3088.6	29.57	29.11	28.65
3168.8	32.08	35.34	37.89	51.35	51.40	44.25	3138.8	3168.8	29.36	28.68	28.17
3269.1	32.72	36.05	38.25	47.52	49.60	43.93	3239.1	3269.1	28.45	27.89	27.48
3349.3	33.01	36.25	37.83	45.06	48.16	45.24	3319.3	3349.3	27.44	26.85	26.39
3449.6	33.13	36.26	37.92	42.18	44.84	44.18	3419.6	3449.6	27.37	26.74	26.27
3529.8	33.18	36.27	38.41	40.43	42.38	41.67	3499.8	3529.8	27.44	27.10	26.86
3630.1	33.92	37.11	39.05	37.91	36.52	34.51	3600.1	3630.1	27.55	27.45	27.35

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1500.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+7	+10	+13		+7	+10	+13		+7	+10	+13
10.1	40.1	1.16	1.07	1.09	40.1	1.07	1.56	2.13	10.0	2.02	1.73	1.49
110.4	140.4	1.16	1.05	1.03	140.4	1.06	1.54	2.16	30.2	1.79	1.59	1.41
210.7	240.7	1.21	1.09	1.02	240.7	1.10	1.54	2.15	50.4	1.77	1.53	1.39
310.9	340.9	1.27	1.16	1.08	340.9	1.13	1.53	2.12	70.6	1.78	1.53	1.40
411.2	441.2	1.33	1.21	1.14	441.2	1.20	1.54	2.10	90.8	1.78	1.54	1.41
511.5	541.5	1.41	1.28	1.20	541.5	1.25	1.53	2.07	111.0	1.83	1.58	1.43
611.8	641.8	1.48	1.34	1.26	641.8	1.32	1.54	2.04	131.2	1.85	1.60	1.45
712.1	742.1	1.53	1.39	1.31	742.1	1.40	1.54	2.01	151.4	1.82	1.57	1.42
792.3	822.3	1.59	1.44	1.36	822.3	1.46	1.54	1.97	171.6	1.82	1.57	1.42
892.6	922.6	1.61	1.46	1.37	922.6	1.54	1.54	1.91	191.8	1.85	1.60	1.45
972.8	1002.8	1.64	1.48	1.40	1002.8	1.62	1.54	1.86	212.0	1.86	1.61	1.46
1073.1	1103.1	1.66	1.49	1.40	1103.1	1.71	1.52	1.76	232.2	1.84	1.59	1.44
1153.3	1183.3	1.69	1.52	1.41	1183.3	1.78	1.50	1.70	252.5	1.83	1.58	1.43
1253.6	1283.6	1.69	1.51	1.41	1283.6	1.86	1.47	1.59	272.7	1.83	1.58	1.43
1333.8	1363.8	1.70	1.51	1.39	1363.8	1.91	1.46	1.53	292.9	1.83	1.58	1.42
1434.1	1464.1	1.70	1.50	1.38	1464.1	1.92	1.43	1.45	313.1	1.84	1.59	1.43
1514.3	1544.3	1.74	1.54	1.43	1544.3	1.91	1.40	1.41	333.3	1.86	1.60	1.44
1614.6	1644.6	1.78	1.58	1.47	1644.6	1.88	1.37	1.37	353.5	1.83	1.58	1.42
1694.8	1724.8	1.83	1.64	1.53	1724.8	1.85	1.35	1.35	373.7	1.83	1.57	1.41
1795.1	1825.1	1.86	1.67	1.56	1825.1	1.82	1.33	1.34	393.9	1.84	1.58	1.41
1875.3	1905.3	1.92	1.74	1.63	1905.3	1.81	1.32	1.32	434.3	1.84	1.57	1.41
1975.6	2005.6	1.92	1.74	1.63	2005.6	1.79	1.29	1.29	454.5	1.84	1.57	1.40
2055.8	2085.8	1.88	1.71	1.59	2085.8	1.77	1.28	1.27	494.9	1.84	1.57	1.40
2156.1	2186.1	1.82	1.65	1.54	2186.1	1.74	1.24	1.23	515.1	1.83	1.56	1.39
2236.3	2266.3	1.76	1.61	1.50	2266.3	1.71	1.22	1.22	555.5	1.83	1.56	1.39
2336.6	2366.6	1.68	1.53	1.43	2366.6	1.67	1.17	1.21	575.7	1.84	1.57	1.39
2416.8	2446.8	1.59	1.45	1.36	2446.8	1.62	1.14	1.23	616.1	1.85	1.57	1.40
2517.1	2547.1	1.49	1.35	1.26	2547.1	1.57	1.10	1.25	636.3	1.83	1.55	1.38
2597.3	2627.3	1.41	1.28	1.20	2627.3	1.53	1.07	1.29	676.7	1.87	1.59	1.41
2697.6	2727.6	1.29	1.18	1.13	2727.6	1.49	1.06	1.31	696.9	1.85	1.58	1.40
2777.8	2807.8	1.21	1.12	1.10	2807.8	1.46	1.05	1.34	737.4	1.83	1.56	1.39
2878.1	2908.1	1.12	1.11	1.16	2908.1	1.44	1.05	1.34	757.6	1.85	1.58	1.40
2958.3	2988.3	1.12	1.20	1.29	2988.3	1.43	1.03	1.33	798.0	1.87	1.59	1.41
3058.6	3088.6	1.25	1.40	1.50	3088.6	1.41	1.01	1.32	818.2	1.86	1.58	1.41
3138.8	3168.8	1.40	1.58	1.72	3168.8	1.38	1.05	1.34	858.6	1.86	1.59	1.42
3239.1	3269.1	1.60	1.81	1.97	3269.1	1.30	1.14	1.44	878.8	1.89	1.62	1.45
3319.3	3349.3	1.76	1.99	2.17	3349.3	1.23	1.21	1.53	919.2	1.85	1.59	1.42
3419.6	3449.6	1.96	2.20	2.38	3449.6	1.15	1.33	1.68	939.4	1.85	1.59	1.43
3499.8	3529.8	2.08	2.31	2.48	3529.8	1.14	1.43	1.80	979.8	1.88	1.62	1.46
3600.1	3630.1	2.24	2.42	2.57	3630.1	1.21	1.54	1.92	1000.0	1.87	1.61	1.45

REV. X2

LMX-123

100817

Page 4 of 5



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	34	15	27	35	38	63	51	66	79	92
1	-	25	+0	37	13	49	30	47	56	69	61	76
2	>100	43	49	46	47	46	46	56	73	77	62	74
3	>100	62	48	60	62	67	46	81	67	64	74	82
4	>100	75	91	63	72	61	72	58	64	69	75	83
5	>100	>93	83	89	65	81	63	75	61	78	72	85
6	>100	>93	>93	92	>93	>93	>93	83	86	79	90	86
7	>100	>93	>93	>93	>93	>93	>93	>93	89	>93	85	90
8	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	92
9	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
10	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 1500.1 MHz; 0.00 dBm.
LO IN: 1530.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -7.12 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	29	17	27	36	36	35	46	50	46	73
1	-	28	0	29	17	37	27	48	46	51	54	71
2	81	40	40	45	46	44	39	54	61	57	50	65
3	>100	57	44	74	48	56	50	51	51	59	57	71
4	>100	64	64	65	68	58	68	58	57	59	66	64
5	>100	83	68	72	69	68	67	66	62	67	66	75
6	>100	>97	89	83	82	70	80	74	74	70	73	75
7	>100	>97	89	90	86	81	82	80	87	78	78	78
8	>100	96	>97	91	94	>97	84	80	84	81	82	80
9	>100	>97	>97	>97	>97	>97	>97	90	85	88	88	86
10	>100	>97	>97	>97	>97	>97	>97	>97	91	87	89	90
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 1250.1 MHz; 4.00 dBm.
LO IN: 1280.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -3.1 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.

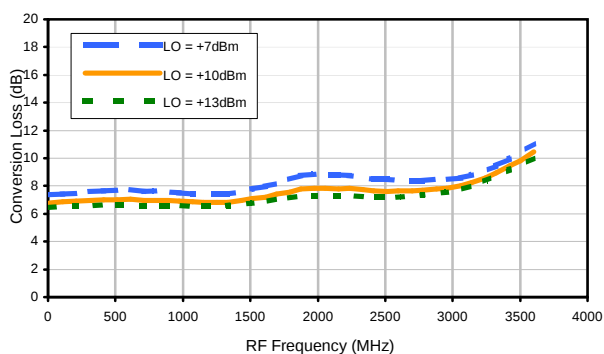
REV. X2
LMX-123
100817
Page 5 of 5

Frequency Mixer

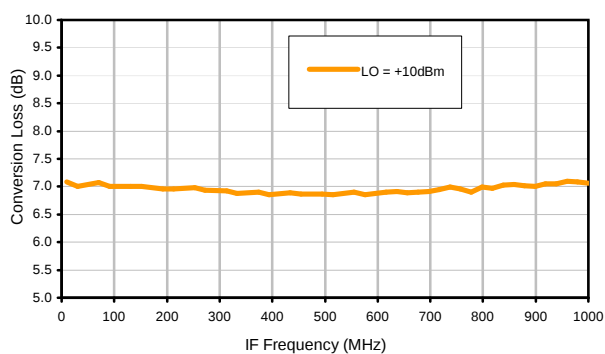
LMX-123

Typical Performance Curves

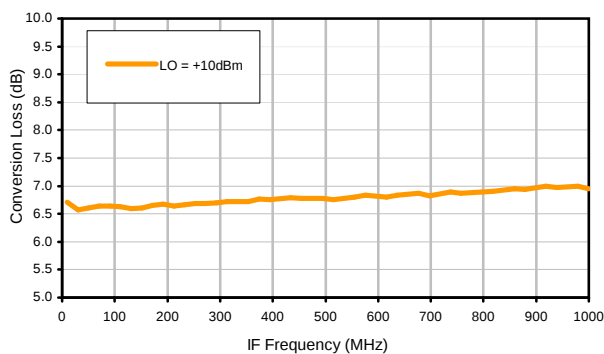
Conversion Loss @ IF=30MHz



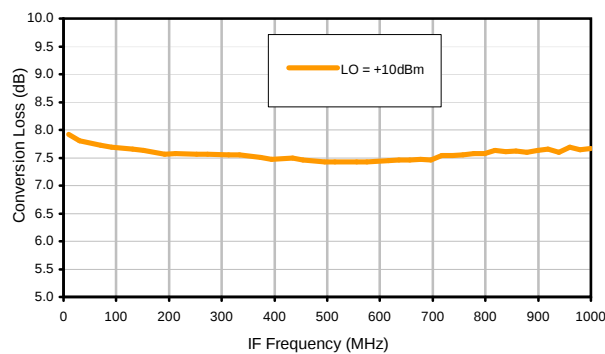
Conversion Loss vs. IF @ RF=1500.1MHz



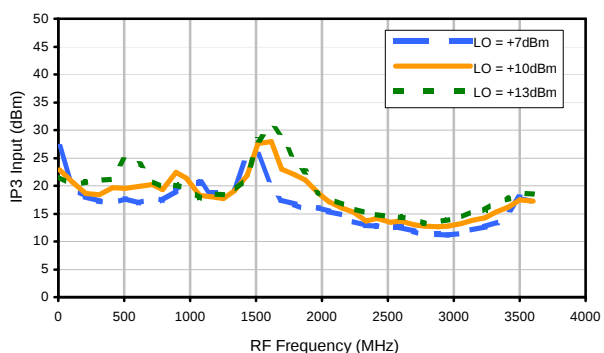
Conversion Loss vs. IF @ RF=10.1MHz



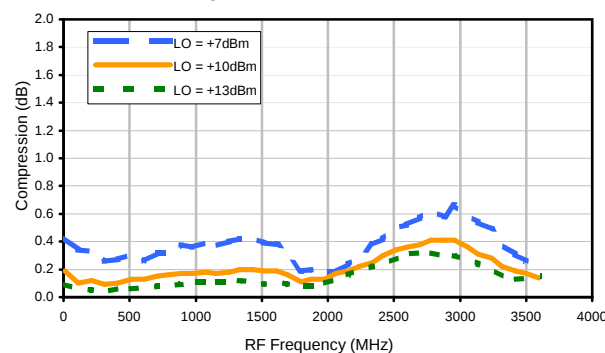
Conversion Loss vs. IF @ RF=3000.1MHz



IP3 Input



Compression @ RF IN=+5dBm



REV. X2

LMX-123

100817

Page 1 of 3

Mini-Circuits®

IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

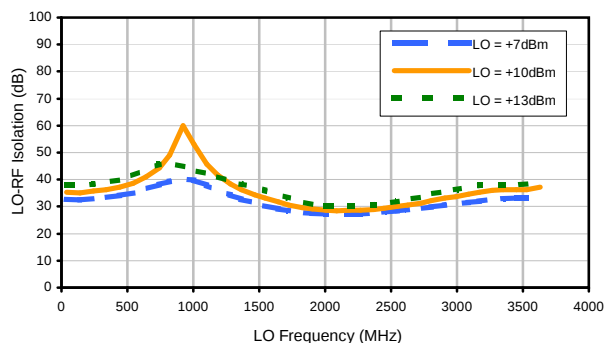


The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see

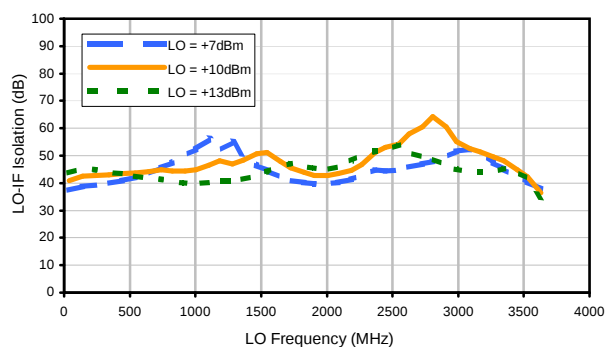


Typical Performance Curves

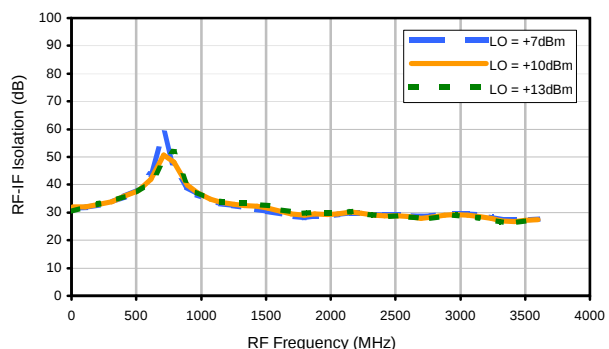
LO-RF Isolation



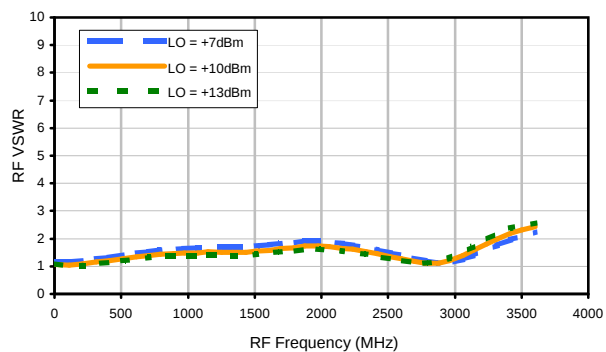
LO-IF Isolation



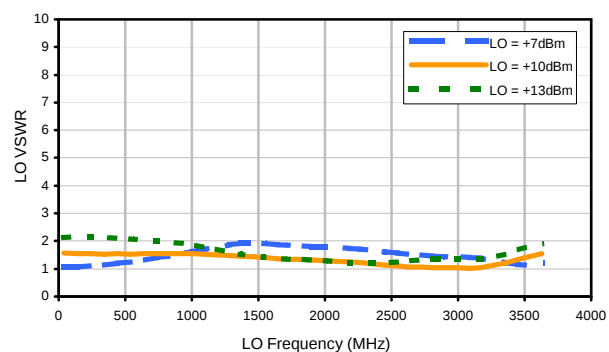
RF-IF Isolation



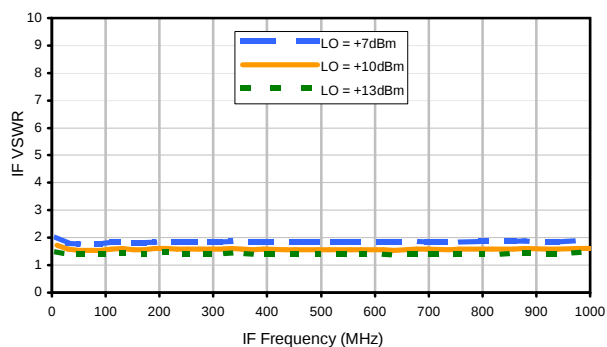
RF VSWR



LO VSWR



IF VSWR



REV. X2

LMX-123

100817

Page 2 of 3



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

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see



Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	34	15	27	35	38	63	51	66	79	92
1	-	25	+0	37	13	49	30	47	56	69	61	76
2	>100	43	49	46	47	46	46	56	73	77	62	74
3	>100	62	48	60	62	67	46	81	67	64	74	82
4	>100	75	91	63	72	61	72	58	64	69	75	83
5	>100	>93	83	89	65	81	63	75	61	78	72	85
6	>100	>93	>93	92	>93	>93	>93	83	86	79	90	86
7	>100	>93	>93	>93	>93	>93	>93	>93	89	>93	85	90
8	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	92
9	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
10	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 1500.1 MHz; 0.00 dBm.
LO IN: 1530.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -7.12 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	29	17	27	36	36	35	46	50	46	73
1	-	28	0	29	17	37	27	48	46	51	54	71
2	81	40	40	45	46	44	39	54	61	57	50	65
3	>100	57	44	74	48	56	50	51	51	59	57	71
4	>100	64	64	65	68	58	68	58	57	59	66	64
5	>100	83	68	72	69	68	67	66	62	67	66	75
6	>100	>97	89	83	82	70	80	74	74	70	73	75
7	>100	>97	89	90	86	81	82	80	87	78	78	78
8	>100	96	>97	91	94	>97	84	80	84	81	82	80
9	>100	>97	>97	>97	>97	>97	>97	90	85	88	88	86
10	>100	>97	>97	>97	>97	>97	>97	>97	91	87	89	90
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 1250.1 MHz; 4.00 dBm.
LO IN: 1280.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -3.1 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
LMX-123
100817
Page 3 of 3



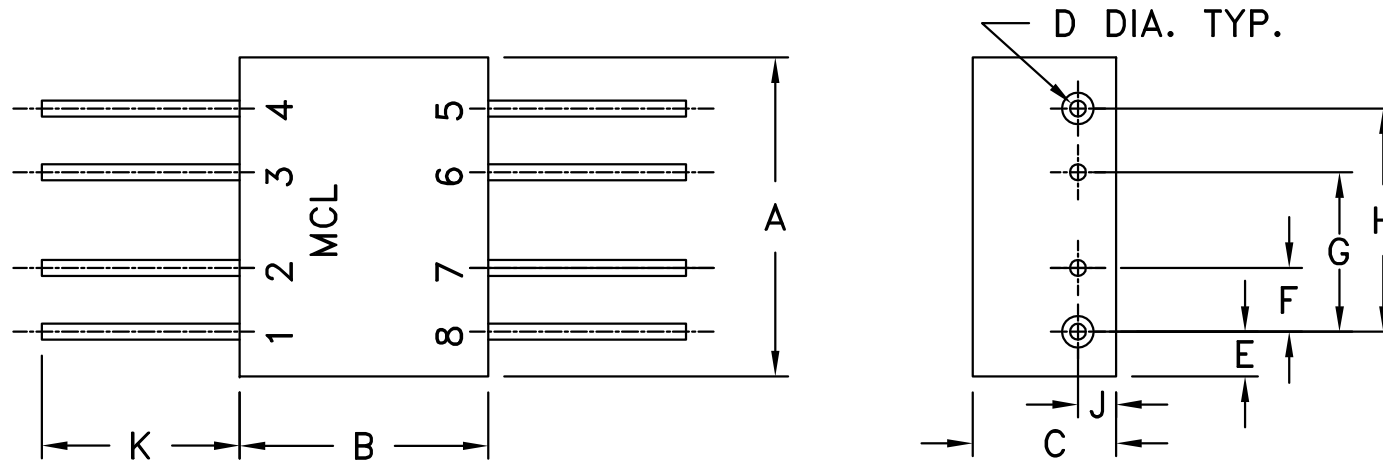
Mini-Circuits®

IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED • RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see

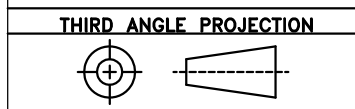


NOTE: PIN NUMBERS DO NOT APPEAR
ON UNIT. FOR REFERENCE ONLY.



CASE NO.	A	B	C	D	E	F	G	H	J	K	NOTES	WT. GRAMS
BB48	.50 (12.70)	.39 (9.91)	.225 (5.72)	.025 (0.63)	.07 (1.78)	.100 (2.54)	.250 (6.35)	.350 (8.89)	.06 (1.52)	.31 (7.87)	A1,E1	3.0

REFER TO GN-219 FOR TEXT OF NOTES.



OR	M42441	CHANGED PART NO.	PM
REV	ECN No.	DESCRIPTION	DATE DR AUTH
REVISIONS			

UNLESS OTHERWISE SPECIFIED	INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	PM
TOLERANCES ON:	CHECKED	10.16.95
2 PL. DECIMALS ± .03	APPROVED	
3 PL. DECIMALS ± .015		
ANGLES ±		
FRACTIONS ±		

Mini-Circuits

THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF MINI-CIRCUITS LABORATORY. EXCEPT FOR USE EXPRESSLY GRANTED, IN WRITING, TO ITS VENDORS, VENDOR AND THE UNITED STATES GOVERNMENT, MINI-CIRCUITS LABORATORY RESERVES ALL PROPRIETARY DESIGN, USE, MANUFACTURING AND REPRODUCTION RIGHTS THEREIN. THESE CONTENTS SHALL NOT BE USED, DUPLICATED OR DISCLOSED TO ANY OUTSIDE PARTY, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION OF MINI-CIRCUITS.

BSHEETA1.DWG REV:A DATE:01/12/94

Mini-Circuits		Mini-Circuit Laboratory 13 Neptune Avenue Brooklyn NY 11236	
CATALOG OUTLINE "BB"			
SIZE B	CODE IDENT 15542	DRAWING NO: 98-BB	REV: OR
FILE: 98-BB	SCALE: NONE	SHEET: 1 OF 1	