

Frequency Mixer

Level 13 (LO Power +13 dBm) 5 to 2500 MHz

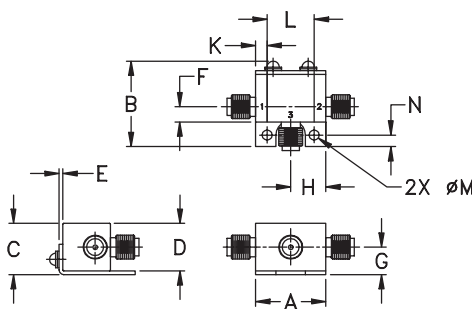
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

LO	1
RF	2
IF	3

Outline Drawing



Outline Dimensions (inch/mm)

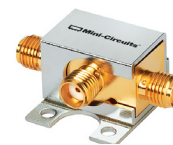
A	B	C	D	E	F	G	
.74	.90	.54	.50	.04	.16	.29	
18.80	22.86	13.72	12.70	1.02	4.06	7.37	
H	J	K	L	M	N	wt	
.37	--	.122	.496	.106	.122	grams	
9.40	--	3.10	12.60	2.69	3.10	20.0	

Features

- rugged construction
- small size
- low conversion loss
- high L-R isolation
- protected by US Patents 6,133,525 and 6,790,049

Applications

- cellular
- PCS
- instrumentation
- satellite communication



Generic photo used for illustration purposes only

CASE STYLE: FL905

Connectors	Model
SMA	ZX05-25MH-S+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications (T_{AMB}=25°C)

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						IP3 at center band (dBm)
LO/RF f _L -f _U	IF	Mid-Band m		Total Range Max.		L		M		U		L		M		U		
		$\overline{X}$	σ	Max.		Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	
5-2500	5-1500	6.9	0.1	8.8	9.8	47	28	34	23	34	23	34	23	32	18	23	17	18

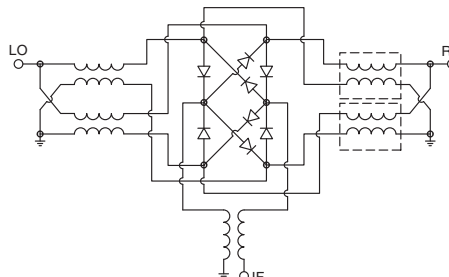
1 dB COMP.: +9 dBm typ.

L = low range [f_L to 10 f_L] M = mid range [10 f_L to f_U/2] U = upper range [f_U/2 to f_U]
m = mid band [2f_L to f_U/2]

Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
5.00	35.10	7.21	46.24	35.35	1.25	2.51
50.00	80.10	7.10	55.51	37.21	1.20	2.28
150.00	119.90	7.09	44.96	36.36	1.17	2.31
287.50	257.40	7.14	38.59	35.49	1.11	2.38
425.00	394.90	7.30	35.30	34.21	1.12	2.36
562.50	532.40	7.23	33.60	33.25	1.25	2.16
700.00	669.90	7.28	32.46	31.31	1.44	2.10
837.50	807.40	7.43	32.20	29.43	1.70	1.85
975.00	944.90	7.33	32.77	28.79	1.95	1.73
1112.50	1151.15	7.47	33.60	27.62	2.11	1.56
1250.00	1219.90	7.89	34.85	26.45	2.23	1.50
1375.00	1344.90	8.00	36.71	25.96	2.33	1.40
1525.00	1494.90	8.11	39.41	25.83	2.35	1.34
1675.00	1644.90	8.35	41.45	26.05	2.12	1.28
1825.00	1794.90	8.24	42.87	26.62	2.04	1.24
1975.00	1944.90	8.52	44.88	27.01	2.06	1.23
2125.00	2094.90	8.52	44.76	27.16	2.00	1.19
2275.00	2244.90	8.53	43.15	27.17	1.99	1.18
2425.00	2394.90	8.63	41.98	27.38	2.03	1.18
2500.00	2469.90	8.60	41.19	27.45	1.98	1.17

Electrical Schematic



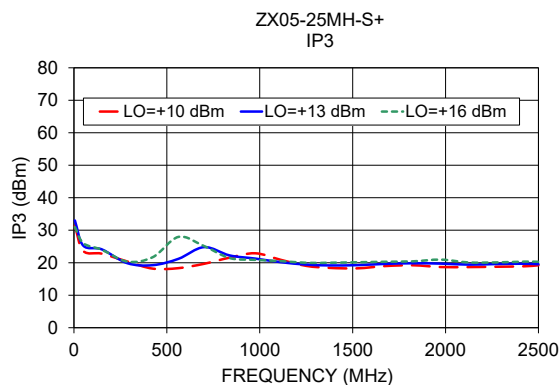
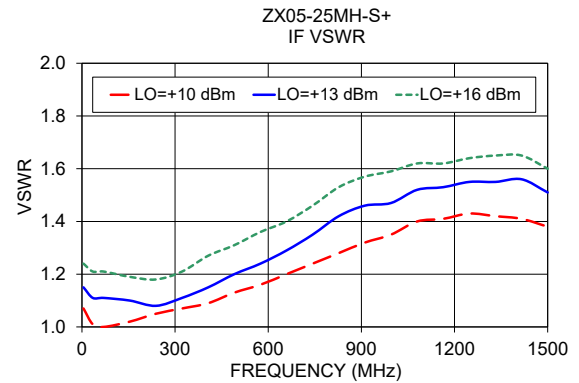
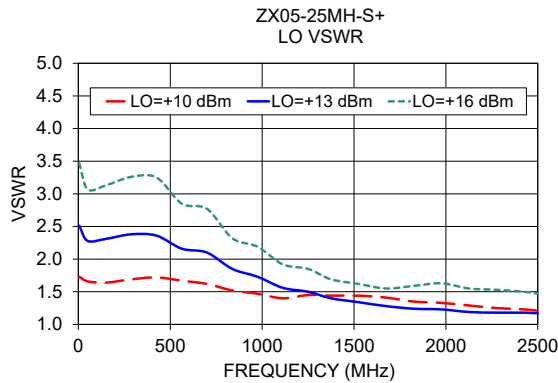
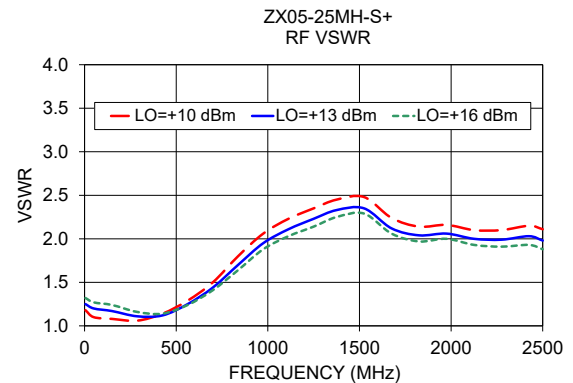
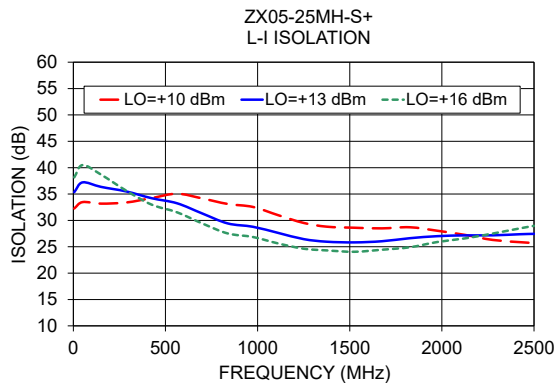
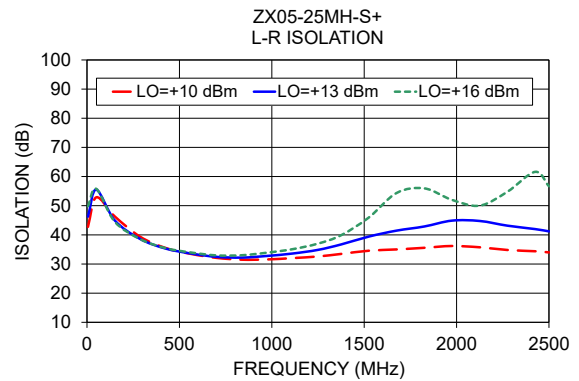
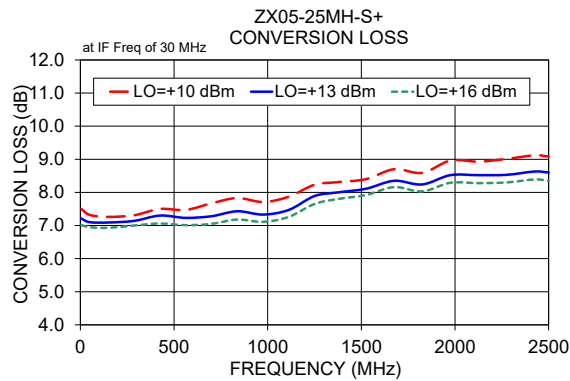
Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp



Performance Charts

ZX05-25MH-S+



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Frequency Mixer

ZX05-25MH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+10	+13	+16
5.0	35.0	7.05	7.36	6.71
10.1	40.1	7.04	6.71	6.56
109.9	139.9	7.37	7.06	6.90
209.6	239.6	7.41	7.12	6.99
309.4	339.4	7.53	7.26	7.04
409.1	439.1	7.66	7.31	7.07
508.9	538.9	7.78	7.34	7.11
608.6	638.6	7.82	7.37	7.12
708.4	738.4	7.85	7.37	7.12
808.1	838.1	7.91	7.44	7.22
907.9	937.9	7.77	7.38	7.15
1007.7	1037.7	7.70	7.33	7.14
1107.4	1137.4	7.67	7.32	7.13
1207.2	1237.2	7.83	7.49	7.28
1306.9	1336.9	8.07	7.73	7.51
1406.7	1436.7	8.34	8.02	7.79
1506.4	1536.4	8.48	8.17	7.95
1606.2	1636.2	8.50	8.16	7.98
1706.0	1736.0	8.55	8.19	7.99
1905.5	1935.5	8.71	8.28	8.03
2025.2	2055.2	8.69	8.25	8.03
2124.9	2154.9	8.69	8.26	8.05
2244.6	2274.6	8.74	8.28	8.08
2344.4	2374.4	8.65	8.19	8.00
2464.1	2494.1	8.59	8.15	7.94
2563.9	2593.9	8.65	8.19	7.98
2683.6	2713.6	8.70	8.26	8.04
2783.3	2813.3	8.64	8.19	7.98
2903.0	2933.0	8.68	8.24	8.02
3002.8	3032.8	8.72	8.27	8.07
3122.5	3152.5	8.81	8.34	8.13
3222.2	3252.2	8.86	8.42	8.20
3342.0	3372.0	9.03	8.61	8.39
3441.7	3471.7	9.16	8.73	8.50
3561.4	3591.4	9.29	8.88	8.64
3661.2	3691.2	9.37	8.99	8.77
3780.9	3810.9	9.63	9.23	9.03
3880.6	3910.6	9.85	9.47	9.27
4000.3	4030.3	10.04	9.65	9.43
4100.1	4130.1	10.40	9.99	9.74

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	27.27	26.96	26.78
109.9	139.9	23.06	23.84	23.40
209.6	239.6	21.51	20.31	20.14
309.4	339.4	18.62	18.73	20.24
409.1	439.1	17.35	18.73	22.66
508.9	538.9	17.40	20.44	25.99
608.6	638.6	17.97	22.54	27.24
708.4	738.4	18.67	25.18	24.53
808.1	838.1	19.62	24.45	24.66
907.9	937.9	22.50	22.63	22.43
1007.7	1037.7	22.65	20.94	21.10
1107.4	1137.4	19.91	19.79	20.97
1207.2	1237.2	18.65	19.31	20.03
1306.9	1336.9	18.65	19.47	20.63
1406.7	1436.7	18.77	19.78	21.01
1506.4	1536.4	18.60	20.08	20.83
1606.2	1636.2	18.34	19.43	20.15
1706.0	1736.0	18.68	19.72	20.18
1805.7	1835.7	18.19	19.19	20.23
1905.5	1935.5	17.48	19.08	20.15
2025.2	2055.2	17.09	17.99	19.03
2124.9	2154.9	17.55	18.21	19.06
2244.6	2274.6	18.02	18.68	19.24
2344.4	2374.4	17.74	18.48	19.09
2464.1	2494.1	18.45	18.87	19.67
2563.9	2593.9	18.76	19.37	20.22
2683.6	2713.6	18.90	18.81	19.58
2783.3	2813.3	19.02	18.91	19.49
2903.0	2933.0	19.11	19.14	19.39
3002.8	3032.8	18.72	18.71	19.40
3122.5	3152.5	17.81	18.43	18.69
3222.2	3252.2	16.89	17.83	18.53
3342.0	3372.0	16.42	17.29	18.14
3441.7	3471.7	15.80	16.56	17.54
3561.4	3591.4	15.06	16.22	16.86
3661.2	3691.2	14.64	15.70	16.70
3780.9	3810.9	14.08	15.08	15.94
3880.6	3910.6	13.76	14.72	15.68
4000.3	4030.3	13.02	13.92	14.69
4100.1	4130.1	13.44	14.31	15.09

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+9dBm (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	1.24	0.81	0.51
109.9	139.9	1.32	0.90	0.60
209.6	239.6	1.38	0.95	0.65
309.4	339.4	1.39	0.97	0.70
409.1	439.1	1.44	1.06	0.79
508.9	538.9	1.45	1.12	0.85
608.6	638.6	1.56	1.24	0.94
708.4	738.4	1.68	1.36	1.05
808.1	838.1	1.68	1.33	1.00
907.9	937.9	1.87	1.48	1.13
1007.7	1037.7	1.96	1.54	1.19
1107.4	1137.4	2.03	1.62	1.28
1207.2	1237.2	1.89	1.51	1.21
1306.9	1336.9	1.73	1.39	1.12
1406.7	1436.7	1.52	1.19	0.95
1506.4	1536.4	1.40	1.06	0.82
1606.2	1636.2	1.39	1.04	0.79
1706.0	1736.0	1.26	0.96	0.72
1805.7	1835.7	1.17	0.90	0.68
1905.5	1935.5	1.01	0.76	0.58
2025.2	2055.2	0.98	0.71	0.54
2124.9	2154.9	0.89	0.64	0.47
2244.6	2274.6	0.81	0.57	0.43
2344.4	2374.4	0.81	0.58	0.43
2464.1	2494.1	0.84	0.59	0.46
2563.9	2593.9	0.80	0.56	0.44
2683.6	2713.6	0.79	0.52	0.40
2783.3	2813.3	0.87	0.58	0.44
2903.0	2933.0	0.94	0.62	0.46
3002.8	3032.8	1.04	0.69	0.51
3122.5	3152.5	1.10	0.74	0.55
3222.2	3252.2	1.23	0.84	0.63
3342.0	3372.0	1.27	0.87	0.63
3441.7	3471.7	1.43	0.99	0.74
3561.4	3591.4	1.58	1.11	0.82
3661.2	3691.2	1.70	1.24	0.94
3780.9	3810.9	1.80	1.30	1.01
3880.6	3910.6	1.78	1.28	1.00
4000.3	4030.3	1.97	1.42	1.12
4100.1	4130.1	1.79	1.27	1.01

Frequency Mixer

ZX05-25MH+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1250MHz (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)=2500.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+13			+13			+13
1239.9	10.1	7.26	10.0	20.1	7.11	1500.0	1000.1	9.26
1199.6	50.4	7.39	50.8	60.9	6.98	1459.2	1040.9	9.13
1159.2	90.8	7.45	91.6	101.7	6.98	1418.4	1081.7	9.07
1118.9	131.1	7.52	132.5	142.6	6.95	1377.5	1122.6	9.00
1078.6	171.4	7.57	173.3	183.4	6.99	1336.7	1163.4	8.92
1038.3	211.7	7.60	214.1	224.2	6.98	1295.9	1204.2	8.87
997.9	252.1	7.65	254.9	265.0	6.99	1255.1	1245.0	8.87
977.8	272.2	7.67	295.8	305.9	7.02	1214.2	1285.9	8.76
937.4	312.6	7.67	336.6	346.7	7.00	1173.4	1326.7	8.69
917.3	332.7	7.73	377.4	387.5	7.00	1132.6	1367.5	8.69
876.9	373.1	7.74	418.2	428.3	6.99	1091.8	1408.3	8.66
856.8	393.2	7.73	459.0	469.1	6.98	1051.0	1449.1	8.64
816.5	433.5	7.75	499.9	510.0	6.98	1010.1	1490.0	8.63
796.3	453.7	7.70	540.7	550.8	6.94	969.3	1530.8	8.60
756.0	494.0	7.71	581.5	591.6	6.94	928.5	1571.6	8.59
735.8	514.2	7.67	622.3	632.4	6.93	887.7	1612.4	8.63
695.5	554.5	7.62	663.2	673.3	6.97	846.8	1653.3	8.61
675.3	574.7	7.63	704.0	714.1	6.99	806.0	1694.1	8.60
635.0	615.0	7.62	744.8	754.9	6.95	765.2	1734.9	8.61
614.8	635.2	7.58	785.6	795.7	6.95	724.4	1775.7	8.63
574.5	675.5	7.62	826.4	836.5	6.92	683.6	1816.5	8.66
554.3	695.7	7.54	867.3	877.4	6.92	642.7	1857.4	8.66
514.0	736.0	7.57	908.1	918.2	6.90	601.9	1898.2	8.65
493.8	756.2	7.56	948.9	959.0	6.91	561.1	1939.0	8.61
453.5	796.5	7.55	989.7	999.8	6.92	520.3	1979.8	8.58
433.3	816.7	7.58	1030.5	1040.6	6.90	479.5	2020.6	8.56
393.0	857.0	7.57	1071.4	1081.5	6.91	438.6	2061.5	8.51
372.9	877.1	7.53	1112.2	1122.3	6.90	397.8	2102.3	8.50
332.5	917.5	7.54	1153.0	1163.1	6.92	357.0	2143.1	8.43
312.4	937.6	7.54	1193.8	1203.9	6.97	316.2	2183.9	8.40
272.0	978.0	7.53	1234.7	1244.8	7.00	275.3	2224.8	8.39
251.9	998.1	7.54	1255.1	1265.2	7.03	254.9	2245.2	8.36
211.5	1038.5	7.51	1295.9	1306.0	7.05	214.1	2286.0	8.35
191.4	1058.6	7.51	1316.3	1326.4	7.08	193.7	2306.4	8.35
151.0	1099.0	7.49	1357.1	1367.2	7.13	152.9	2347.2	8.29
130.9	1119.1	7.49	1377.5	1387.6	7.18	132.5	2367.6	8.28
90.6	1159.4	7.51	1418.4	1428.5	7.23	91.6	2408.5	8.24
70.4	1179.6	7.50	1438.8	1448.9	7.27	71.2	2428.9	8.20
30.1	1219.9	7.51	1479.6	1489.7	7.32	30.4	2469.7	8.20
9.9	1240.1	7.72	1500.0	1510.1	7.35	10.0	2490.1	8.36

REV. X2
ZX05-25MH+
100818
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Frequency Mixer

ZX05-25MH+

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+10	+13	+16	+10	+13	+16
5.0	45.3	49.9	54.7	30.8	34.2	37.5
10.1	49.45	53.35	56.75	31.79	34.84	37.93
109.9	48.52	48.69	48.49	32.48	35.30	37.48
209.6	42.15	42.04	42.16	32.38	34.51	35.40
309.4	38.45	38.62	38.89	32.44	33.49	33.27
409.1	35.94	36.25	36.73	32.64	32.50	31.69
508.9	34.17	34.71	35.36	32.30	31.32	30.22
608.6	32.88	33.60	34.36	31.98	30.36	29.10
708.4	31.87	32.80	33.71	31.52	29.47	28.08
808.1	31.02	32.18	33.30	30.92	28.66	27.21
907.9	30.56	31.95	33.34	29.93	27.65	26.25
1007.7	30.33	32.04	33.67	28.93	26.76	25.41
1107.4	30.22	32.18	34.11	27.91	25.89	24.59
1207.2	30.35	32.63	34.89	27.14	25.22	23.94
1306.9	30.60	33.24	35.98	26.69	24.84	23.57
1406.7	30.91	34.00	37.46	26.16	24.39	23.11
1506.4	31.32	34.99	39.73	25.85	24.14	22.89
1606.2	31.90	36.20	42.82	25.70	24.05	22.82
1706.0	32.54	37.63	47.23	25.45	23.86	22.68
1905.5	33.35	39.57	54.34	25.57	24.23	23.08
2025.2	33.54	40.35	48.15	25.28	24.27	23.28
2124.9	33.40	39.74	44.44	24.78	24.13	23.35
2244.6	33.26	39.14	42.21	24.28	24.04	23.58
2344.4	32.95	38.57	41.67	23.97	24.10	23.93
2464.1	32.87	38.35	41.20	23.63	24.08	24.27
2563.9	32.15	37.30	42.10	23.21	23.80	24.26
2683.6	31.60	36.41	42.07	23.25	23.96	24.61
2783.3	31.17	35.93	42.52	23.41	24.21	24.96
2903.0	30.75	35.31	42.54	23.74	24.63	25.52
3002.8	30.29	34.51	41.36	24.04	24.99	25.95
3122.5	29.83	33.63	39.13	24.45	25.43	26.39
3222.2	29.42	32.96	37.56	24.80	25.93	26.92
3342.0	28.82	31.83	35.09	25.15	26.41	27.56
3441.7	28.51	31.13	33.64	25.42	26.71	27.88
3561.4	28.34	30.69	32.58	25.80	27.12	28.18
3661.2	28.34	30.47	32.02	26.09	27.39	28.35
3780.9	28.56	30.42	31.60	26.55	27.77	28.57
3880.6	28.90	30.45	31.23	27.02	28.23	28.96
4000.3	29.89	31.04	31.28	27.72	28.91	29.59
4100.1	30.08	31.27	31.26	28.48	29.60	30.23

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	22.33	22.23	22.29
109.9	139.9	22.53	22.54	22.60
209.6	239.6	22.74	22.75	22.88
309.4	339.4	23.28	23.43	23.79
409.1	439.1	24.23	24.52	25.01
508.9	538.9	25.49	25.92	26.50
608.6	638.6	26.92	27.40	27.91
708.4	738.4	28.41	28.58	28.96
808.1	838.1	29.62	29.48	29.37
907.9	937.9	30.29	29.73	29.38
1007.7	1037.7	30.94	30.10	29.27
1107.4	1137.4	31.23	30.15	29.02
1207.2	1237.2	30.90	29.86	28.55
1306.9	1336.9	30.77	29.78	28.53
1406.7	1436.7	30.54	29.56	28.38
1506.4	1536.4	29.73	29.01	28.04
1606.2	1636.2	28.96	28.29	27.49
1706.0	1736.0	28.27	27.70	26.86
1805.7	1835.7	27.82	27.44	26.79
1905.5	1935.5	27.64	27.49	27.06
2025.2	2055.2	27.25	27.42	27.26
2124.9	2154.9	26.89	27.20	27.28
2244.6	2274.6	26.54	26.91	27.06
2344.4	2374.4	26.73	27.19	27.48
2464.1	2494.1	27.01	27.68	28.13
2563.9	2593.9	27.29	28.22	28.85
2683.6	2713.6	27.70	28.81	29.62
2783.3	2813.3	28.14	29.35	30.18
2903.0	2933.0	28.71	29.82	30.63
3002.8	3032.8	29.14	29.92	30.46
3122.5	3152.5	29.19	29.81	30.03
3222.2	3252.2	28.83	29.05	29.12
3342.0	3372.0	28.16	27.84	27.57
3441.7	3471.7	27.59	26.97	26.45
3561.4	3591.4	26.95	26.20	25.56
3661.2	3691.2	26.45	25.73	25.18
3780.9	3810.9	25.59	25.00	24.67
3880.6	3910.6	24.54	24.07	23.84
4000.3	4030.3	23.47	23.11	22.92
4100.1	4130.1	22.89	22.64	22.50

Frequency Mixer

ZX05-25MH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)		
		@LO (dBm)		
		+10	+13	+16
5.0	35.0	1.28	1.35	1.42
10.1	40.1	1.11	1.18	1.25
109.9	139.9	1.05	1.14	1.21
209.6	239.6	1.03	1.11	1.16
309.4	339.4	1.05	1.05	1.10
409.1	439.1	1.10	1.06	1.08
508.9	538.9	1.17	1.12	1.11
608.6	638.6	1.26	1.21	1.19
708.4	738.4	1.37	1.31	1.27
808.1	838.1	1.49	1.42	1.38
907.9	937.9	1.61	1.54	1.49
1007.7	1037.7	1.75	1.68	1.63
1107.4	1137.4	1.87	1.79	1.73
1207.2	1237.2	2.00	1.91	1.84
1306.9	1336.9	2.15	2.05	1.98
1406.7	1436.7	2.30	2.20	2.13
1506.4	1536.4	2.38	2.30	2.22
1606.2	1636.2	2.42	2.34	2.27
1706.0	1736.0	2.47	2.37	2.31
1805.7	1835.7	2.49	2.39	2.32
1905.5	1935.5	2.49	2.39	2.31
2025.2	2055.2	2.48	2.37	2.29
2124.9	2154.9	2.44	2.33	2.25
2244.6	2274.6	2.37	2.26	2.17
2344.4	2374.4	2.32	2.20	2.12
2464.1	2494.1	2.28	2.15	2.06
2563.9	2593.9	2.24	2.11	2.01
2683.6	2713.6	2.18	2.05	1.96
2783.3	2813.3	2.17	2.04	1.94
2903.0	2933.0	2.17	2.02	1.92
3002.8	3032.8	2.14	1.99	1.88
3122.5	3152.5	2.09	1.95	1.84
3222.2	3252.2	2.06	1.92	1.82
3342.0	3372.0	2.03	1.89	1.78
3441.7	3471.7	1.99	1.86	1.75
3561.4	3591.4	1.93	1.82	1.73
3661.2	3691.2	1.89	1.79	1.71
3780.9	3810.9	1.81	1.73	1.67
3880.6	3910.6	1.73	1.68	1.64
4000.3	4030.3	1.64	1.63	1.62
4100.1	4130.1	1.59	1.60	1.61

LO (MHz)	LO VSWR (:1)		
	@LO (dBm)		
	+10	+13	+16
5.0	1.63	2.37	3.26
10.1	1.58	2.23	2.95
109.9	1.56	2.15	2.89
209.6	1.56	2.13	2.85
309.4	1.58	2.15	2.85
409.1	1.59	2.13	2.80
508.9	1.57	2.08	2.72
608.6	1.57	2.06	2.66
708.4	1.57	2.01	2.57
808.1	1.54	1.95	2.48
907.9	1.51	1.90	2.40
1007.7	1.49	1.85	2.33
1107.4	1.51	1.82	2.26
1207.2	1.55	1.78	2.17
1306.9	1.59	1.75	2.08
1406.7	1.62	1.70	2.00
1506.4	1.65	1.66	1.92
1606.2	1.67	1.62	1.83
1706.0	1.68	1.57	1.75
1805.7	1.69	1.52	1.66
1905.5	1.69	1.47	1.57
2025.2	1.69	1.40	1.46
2124.9	1.67	1.34	1.36
2244.6	1.65	1.26	1.25
2344.4	1.65	1.21	1.17
2464.1	1.62	1.17	1.12
2563.9	1.67	1.22	1.14
2683.6	1.67	1.27	1.25
2783.3	1.68	1.34	1.35
2903.0	1.71	1.45	1.51
3002.8	1.73	1.56	1.66
3122.5	1.78	1.68	1.81
3222.2	1.80	1.78	1.96
3342.0	1.86	1.93	2.14
3441.7	1.92	2.05	2.29
3561.4	2.02	2.23	2.51
3661.2	2.10	2.37	2.66
3780.9	2.25	2.57	2.89
3880.6	2.37	2.73	3.05
4000.3	2.53	2.92	3.24
4100.1	2.61	3.03	3.36

IF (OUT) (MHz)	IF VSWR @LO=2500.1MHz (:1)		
	@LO (dBm)		
	+10	+13	+16
5.0	1.33	1.50	1.61
10.1	1.23	1.68	1.71
50.4	1.25	1.49	1.65
90.6	1.27	1.49	1.67
130.9	1.27	1.51	1.67
171.2	1.30	1.53	1.70
211.5	1.29	1.52	1.69
251.7	1.31	1.52	1.68
292.0	1.31	1.52	1.68
332.3	1.30	1.51	1.66
372.5	1.32	1.53	1.68
412.8	1.30	1.50	1.65
453.1	1.33	1.53	1.68
493.3	1.33	1.53	1.69
533.6	1.35	1.54	1.69
573.9	1.36	1.56	1.71
614.2	1.35	1.54	1.68
654.4	1.36	1.55	1.69
694.7	1.34	1.52	1.65
735.0	1.33	1.50	1.63
775.2	1.33	1.50	1.63
815.5	1.33	1.49	1.61
855.8	1.34	1.50	1.63
896.0	1.32	1.47	1.59
936.3	1.33	1.48	1.59
976.6	1.32	1.47	1.59
1016.9	1.32	1.45	1.56
1057.1	1.32	1.46	1.56
1097.4	1.29	1.41	1.51
1137.7	1.29	1.40	1.50
1177.9	1.28	1.38	1.48
1218.2	1.27	1.37	1.46
1258.5	1.26	1.37	1.46
1298.7	1.23	1.32	1.40
1318.9	1.24	1.32	1.40
1359.2	1.23	1.30	1.38
1379.3	1.22	1.29	1.37
1419.6	1.21	1.27	1.34
1439.7	1.19	1.25	1.32
1480.0	1.18	1.22	1.28
1500.1	1.17	1.20	1.26

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+2	12	19	21	21	28	18	40	35	47
1	-	24	+0	32	13	38	20	42	30	39	38	39
2	86	52	55	50	57	49	54	61	61	57	48	58
3	>100	72	55	70	58	71	58	74	63	72	64	77
4	>100	>86	>86	86	>86	82	>86	80	>86	>86	>86	85
5	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
6	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
7	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
8	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
10	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 1250.1 MHz; -6.00 dBm.
LO IN: 1280.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -13.56 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	7	22	31	34	33	45	32	61	54	67
1	-	23	+0	31	14	39	21	45	32	45	43	49
2	70	45	46	54	44	45	43	51	51	64	42	55
3	>100	49	36	50	41	59	40	56	51	58	70	55
4	>100	49	66	52	60	53	63	53	63	60	65	65
5	>100	54	49	62	54	68	51	59	53	64	59	59
6	87	64	66	65	70	83	77	76	81	68	72	67
7	>100	79	68	68	70	73	71	69	73	76	66	73
8	>100	95	80	77	80	74	86	79	>96	72	89	72
9	>100	88	>96	83	80	86	82	84	85	79	76	76
10	>100	96	92	>96	89	92	95	90	90	>96	89	83
	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; -3.8 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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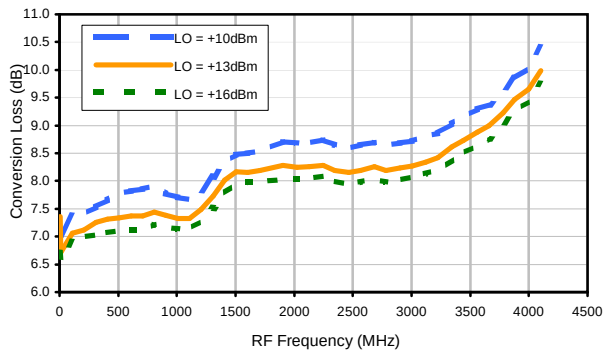


Frequency Mixer

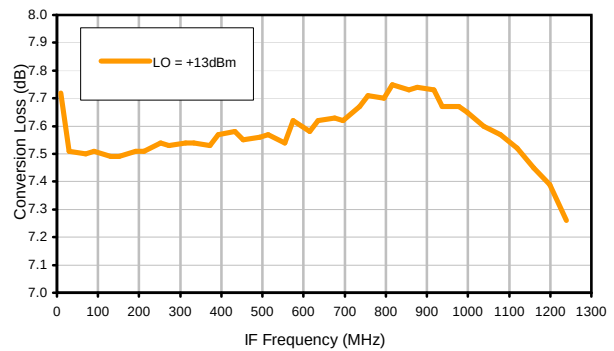
ZX05-25MH+

Typical Performance Curves

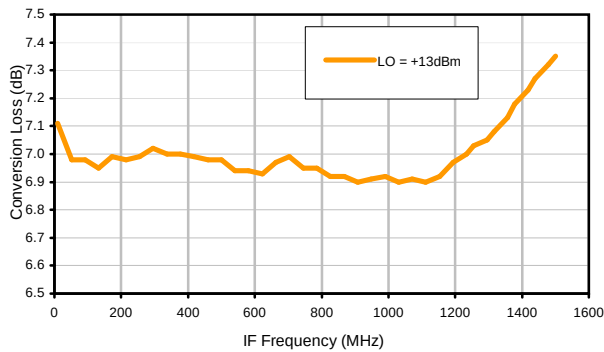
Conversion Loss @ IF=30MHz



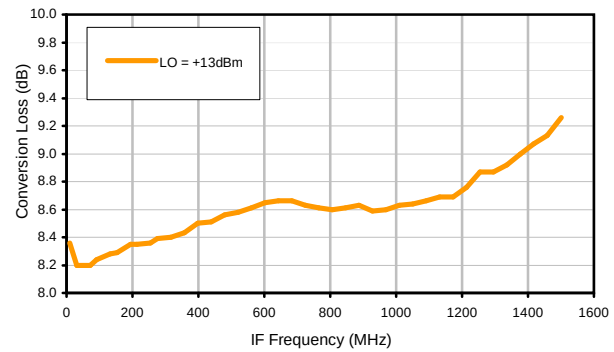
Conversion Loss vs. IF @ RF=1250MHz



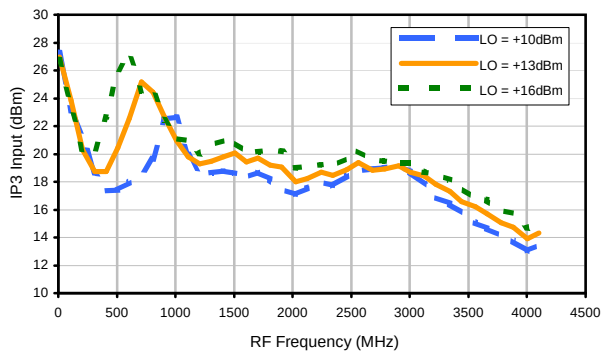
Conversion Loss vs. IF @ RF=10.1MHz



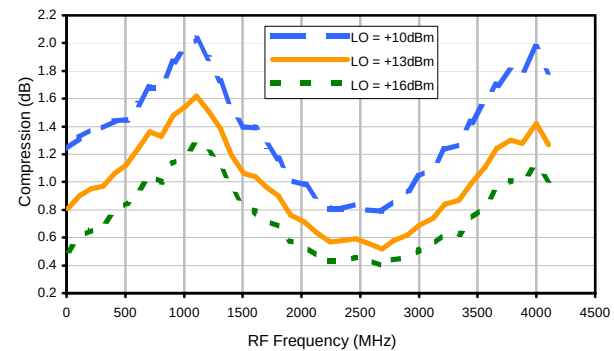
Conversion Loss vs. IF @ RF=2500.1MHz



IP3 Input



Compression @ RF IN=+9dBm



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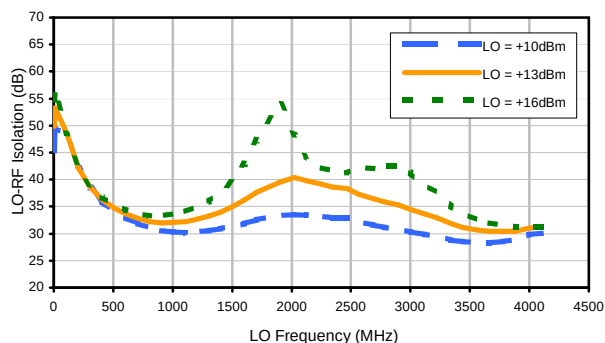


Frequency Mixer

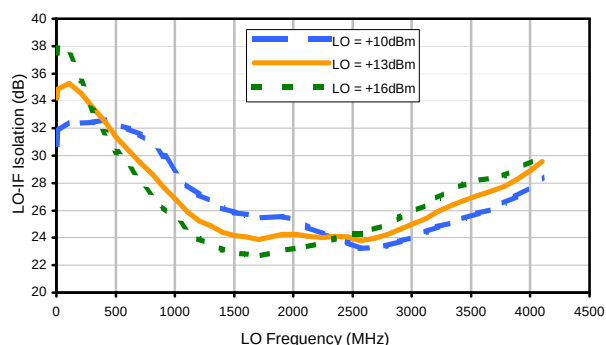
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Typical Performance Curves

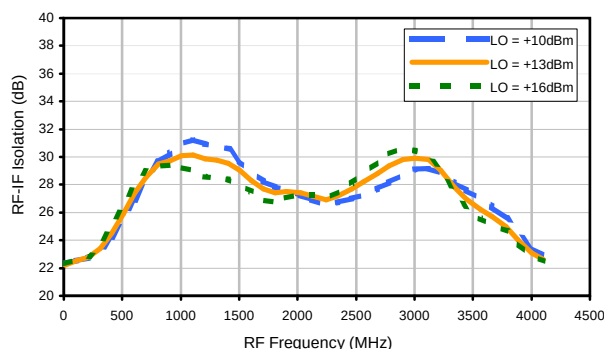
LO-RF Isolation



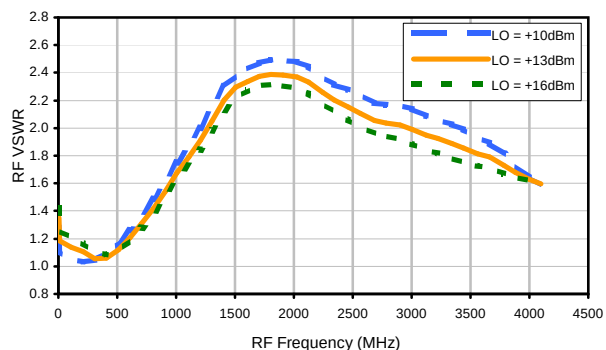
LO-IF Isolation



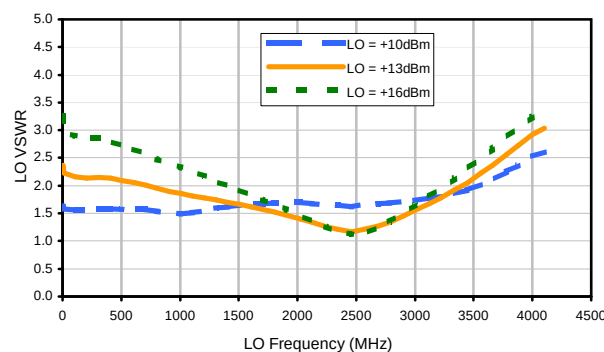
RF-IF Isolation



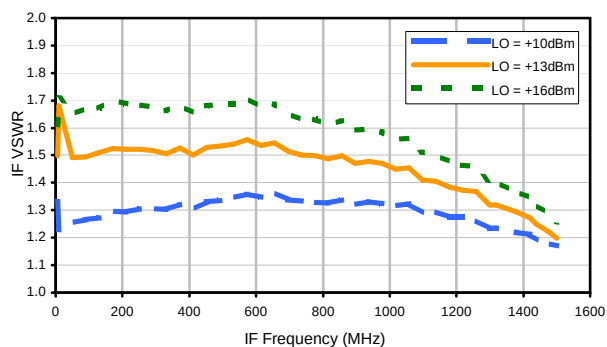
RF VSWR



LO VSWR



IF VSWR



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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+2	12	19	21	21	28	18	40	35	47
1	-	24	+0	32	13	38	20	42	30	39	38	39
2	86	52	55	50	57	49	54	61	61	57	48	58
3	>100	72	55	70	58	71	58	74	63	72	64	77
4	>100	>86	>86	86	>86	82	>86	80	>86	>86	>86	85
5	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
6	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
7	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
8	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
10	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 1250.1 MHz; -6.00 dBm.
LO IN: 1280.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -13.56 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	7	22	31	34	33	45	32	61	54	67
1	-	23	+0	31	14	39	21	45	32	45	43	49
2	70	45	46	54	44	45	43	51	51	64	42	55
3	>100	49	36	50	41	59	40	56	51	58	70	55
4	>100	49	66	52	60	53	63	53	63	60	65	65
5	>100	54	49	62	54	68	51	59	53	64	59	59
6	87	64	66	65	70	83	77	76	81	68	72	67
7	>100	79	68	68	70	73	71	69	73	76	66	73
8	>100	95	80	77	80	74	86	79	>96	72	89	72
9	>100	88	>96	83	80	86	82	84	85	79	76	76
10	>100	96	92	>96	89	92	95	90	90	>96	89	83
	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; -3.8 dBm

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

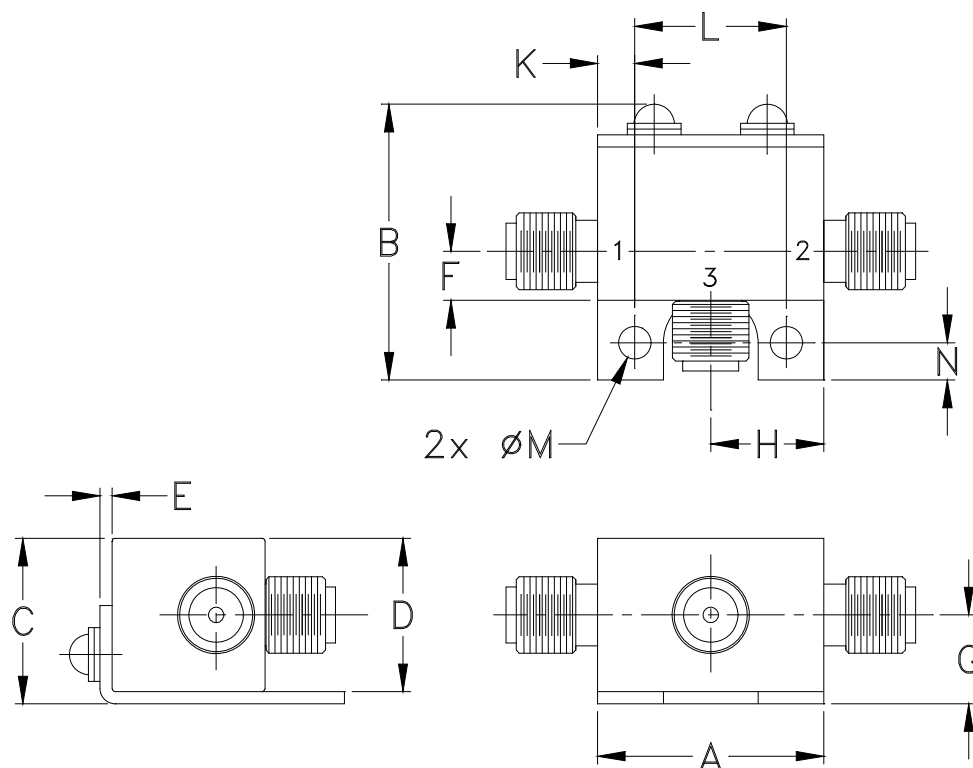
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.

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

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Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
FL905	.74 (18.80)	.90 (22.86)	.54 (13.72)	.50 (12.70)	.04 (1.02)	.16 (4.06)	.29 (7.37)	.37 (9.40)	- -	.122 (3.10)	.496 (12.60)	.106 (2.69)	.122 (3.10)	20.0

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

Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Notes:

1. Case material: Brass.
2. Case finish: Nickel 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	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I