

Frequency Mixer

Level 7 (LO Power +7 dBm) 10 to 1000 MHz

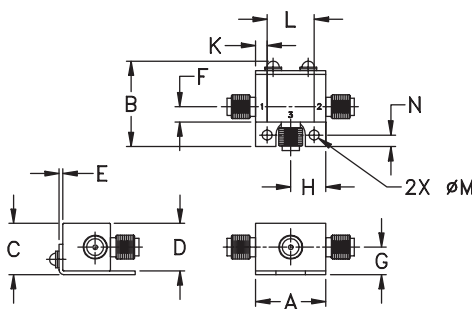
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
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

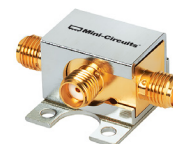
H	J	K	L	M	N	wt
.37	--	.122	.496	.106	.122	grams
9.40	--	3.10	12.60	2.69	3.10	20.0

Features

- rugged construction
- small size
- low conversion loss
- high L-R isolation
- protected by US Patents 6,133,525; 6,790,049 & 6,947,717

Applications

- cellular
- PCS
- instrumentation
- satellite communication



Generic photo used for illustration purposes only

CASE STYLE: FL905

Connectors	Model
SMA	ZX05-10-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	IF	Mid-Band		Total		L		M		U		L		M		U		
		$\bar{X}$	σ	Max.	Range	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.		
		f_L	f_U		Max.													
10-1000	DC-800	6.8	0.1	7.8	8.3	80	50	60	40	47	37	40	26	33	20	24	13	16

1 dB COMP: +1 dBm typ.

Conversion Loss increases 0.5 dB when IF is above 150 MHz

L = low range [f_L to 10 f_L]

m = mid band [$2f_L$ to $f_U/2$]

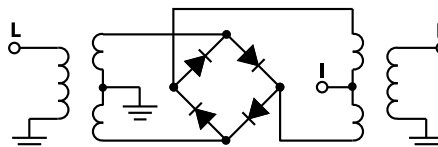
M = mid range [10 f_L to $f_U/2$]

U = upper range [$f_U/2$ to f_U]

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 +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
10.10	40.10	6.73	78.38	57.81	1.41	1.77
50.10	80.10	6.61	70.98	45.39	1.38	1.76
100.10	70.10	6.59	67.50	39.83	1.39	1.73
143.85	113.85	6.52	67.26	37.88	1.37	1.75
215.10	185.10	6.50	65.81	36.31	1.35	1.73
262.60	232.60	6.47	62.97	35.46	1.34	1.74
310.10	280.10	6.46	60.02	34.17	1.33	1.77
357.60	327.60	6.43	56.63	33.24	1.32	1.77
405.10	375.10	6.48	54.20	31.18	1.31	1.81
452.60	422.60	6.36	52.91	30.57	1.29	1.80
500.10	470.10	6.40	51.52	28.84	1.28	1.85
552.10	522.10	6.34	50.01	27.36	1.24	1.81
616.10	586.10	6.32	48.95	25.56	1.19	1.87
680.10	650.10	6.26	45.57	24.52	1.17	1.94
744.10	714.10	6.24	43.34	23.47	1.14	1.92
808.10	778.10	6.34	43.33	22.73	1.10	1.90
840.10	810.10	6.38	43.42	22.27	1.08	1.98
904.10	874.10	6.46	44.95	21.15	1.09	1.87
968.10	938.10	6.09	45.01	19.57	1.14	1.92
1000.10	970.10	6.01	44.35	18.90	1.20	1.91

Electrical Schematic



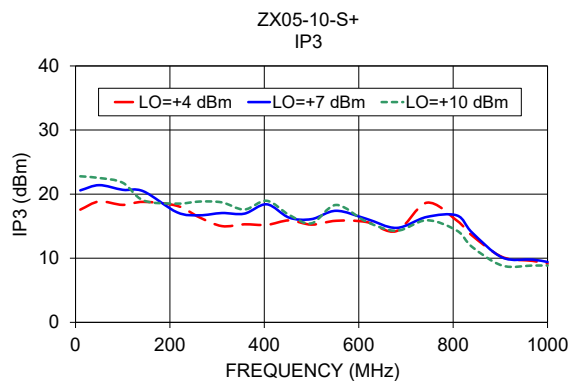
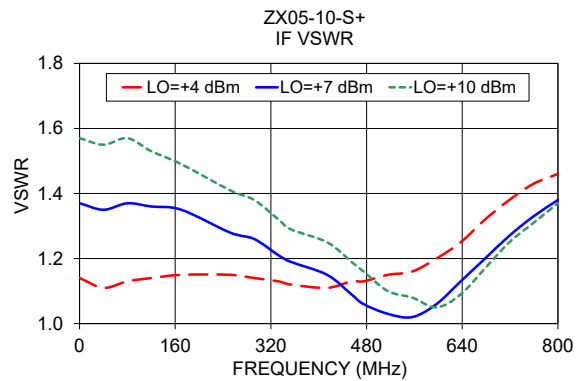
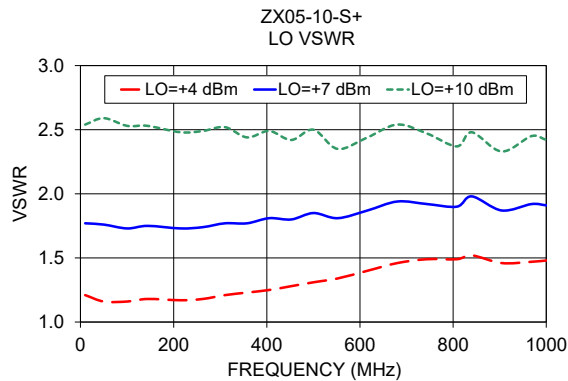
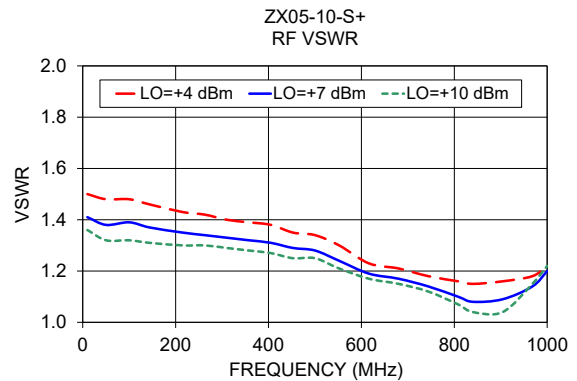
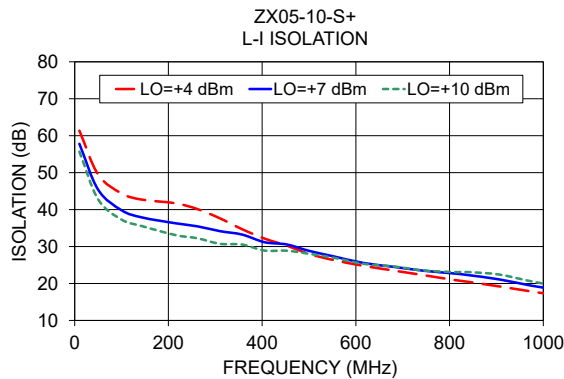
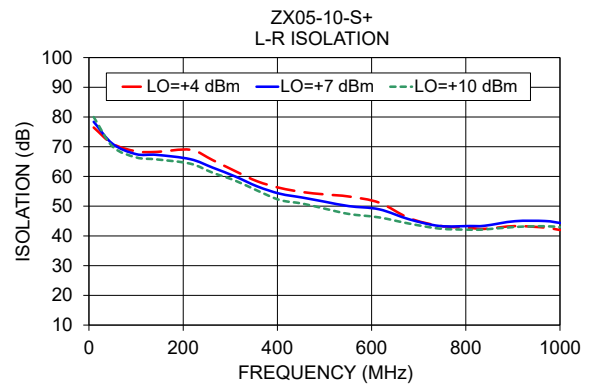
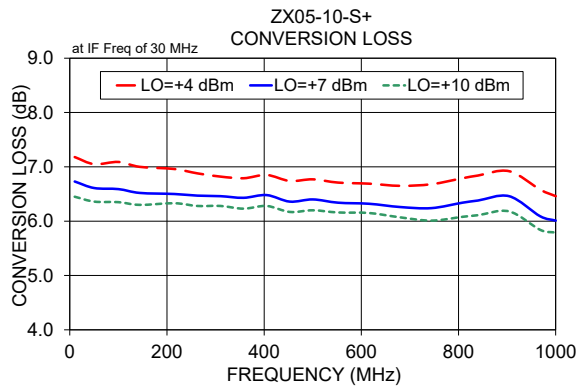
Notes

- 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.
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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	6.92	6.38	6.15
70.4	100.4	7.24	6.65	6.40
130.7	160.7	7.34	6.77	6.51
190.9	220.9	7.28	6.75	6.52
251.2	281.2	7.19	6.72	6.53
311.5	341.5	7.21	6.81	6.54
371.8	401.8	7.25	6.83	6.61
432.0	462.0	7.24	6.80	6.55
492.3	522.3	7.32	6.86	6.62
552.6	582.6	7.34	6.84	6.55
612.9	642.9	7.34	6.88	6.61
673.1	703.1	7.49	7.05	6.77
733.4	763.4	7.54	7.02	6.69
793.7	823.7	7.42	6.86	6.58
854.0	884.0	7.48	6.90	6.57
914.2	944.2	7.53	6.81	6.43
974.5	1004.5	7.53	6.78	6.37
1034.8	1064.8	7.54	6.80	6.29
1095.1	1125.1	7.58	6.91	6.42
1155.3	1185.3	7.44	6.92	6.49
1215.6	1245.6	7.26	6.69	6.35
1275.9	1305.9	7.05	6.58	6.22
1336.2	1366.2	6.92	6.51	6.24
1396.4	1426.4	6.89	6.58	6.40
1436.6	1466.6	6.93	6.70	6.57
1496.9	1526.9	7.06	6.86	6.74
1537.1	1567.1	7.07	6.92	6.83
1597.3	1627.3	7.27	7.06	6.96
1637.5	1667.5	7.38	7.18	7.12
1697.8	1727.8	7.58	7.37	7.28
1738.0	1768.0	7.76	7.54	7.46
1798.3	1828.3	8.05	7.81	7.68
1838.4	1868.4	8.25	7.99	7.90
1898.7	1928.7	8.55	8.31	8.15
1938.9	1968.9	8.77	8.46	8.34
1999.2	2029.2	9.14	8.75	8.64
2039.4	2069.4	9.37	8.91	8.79
2099.6	2129.6	9.85	9.38	9.33
2139.8	2169.8	10.16	9.63	9.59
2200.1	2230.1	10.78	10.35	10.73

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	14.85	17.54	19.82
70.4	100.4	14.22	18.49	16.32
130.7	160.7	14.79	14.39	16.57
190.9	220.9	12.18	15.01	18.51
251.2	281.2	12.18	16.49	21.68
311.5	341.5	13.95	18.08	22.29
371.8	401.8	14.66	17.96	18.93
432.0	462.0	14.76	17.55	25.29
492.3	522.3	14.65	16.99	18.41
552.6	582.6	15.00	16.23	16.36
612.9	642.9	15.78	15.83	17.47
673.1	703.1	14.29	15.82	20.44
733.4	763.4	14.45	19.05	21.12
793.7	823.7	16.97	16.48	15.87
854.0	884.0	15.93	13.33	13.01
914.2	944.2	12.78	12.05	10.76
974.5	1004.5	10.62	10.01	8.83
1034.8	1064.8	8.55	8.07	6.63
1095.1	1125.1	7.44	7.39	6.35
1155.3	1185.3	8.16	9.92	11.11
1215.6	1245.6	10.00	13.70	15.29
1275.9	1305.9	11.56	13.61	13.81
1336.2	1366.2	12.41	13.61	14.66
1396.4	1426.4	11.66	13.20	13.92
1436.6	1466.6	12.53	13.12	14.66
1496.9	1526.9	13.21	13.56	13.32
1537.1	1567.1	12.33	13.07	13.75
1597.3	1627.3	14.35	18.01	14.70
1637.5	1667.5	13.38	17.12	16.79
1697.8	1727.8	13.94	16.97	17.86
1738.0	1768.0	13.55	15.21	15.91
1798.3	1828.3	13.09	14.62	15.99
1838.4	1868.4	13.62	15.17	14.26
1898.7	1928.7	12.99	14.39	14.79
1938.9	1968.9	12.72	15.69	15.60
1999.2	2029.2	13.12	13.83	13.00
2039.4	2069.4	12.96	14.38	11.46
2099.6	2129.6	10.52	10.42	10.05
2139.8	2169.8	9.07	10.13	9.05
2200.1	2230.1	7.99	8.71	8.64

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	0.39	0.21	0.14
70.4	100.4	0.52	0.28	0.13
130.7	160.7	0.55	0.34	0.18
190.9	220.9	0.53	0.30	0.30
251.2	281.2	0.47	0.34	0.23
311.5	341.5	0.48	0.36	0.26
371.8	401.8	0.45	0.28	0.22
432.0	462.0	0.52	0.32	0.34
492.3	522.3	0.53	0.33	0.32
552.6	582.6	0.51	0.44	0.33
612.9	642.9	0.46	0.35	0.35
673.1	703.1	0.71	0.59	0.55
733.4	763.4	0.75	0.59	0.56
793.7	823.7	1.00	0.92	0.83
854.0	884.0	1.30	1.19	1.02
914.2	944.2	1.42	1.41	1.31
974.5	1004.5	1.46	1.44	1.50
1034.8	1064.8	1.37	1.45	1.52
1095.1	1125.1	1.58	1.44	1.39
1155.3	1185.3	1.67	1.48	1.20
1215.6	1245.6	1.88	1.57	1.30
1275.9	1305.9	2.09	1.66	1.35
1336.2	1366.2	2.14	1.75	1.43
1396.4	1426.4	1.88	1.52	1.31
1436.6	1466.6	1.72	1.47	1.26
1496.9	1526.9	1.47	1.26	1.09
1537.1	1567.1	1.41	0.97	0.96
1597.3	1627.3	1.22	0.90	0.86
1637.5	1667.5	1.22	0.96	0.79
1697.8	1727.8	1.16	0.84	0.84
1738.0	1768.0	1.12	0.85	0.82
1798.3	1828.3	1.10	0.83	0.78
1838.4	1868.4	1.14	0.81	0.83
1898.7	1928.7	1.18	0.77	0.75
1938.9	1968.9	1.09	0.85	0.67
1999.2	2029.2	1.01	0.96	0.83
2039.4	2069.4	1.07	0.84	0.90
2099.6	2129.6	1.17	1.04	1.04
2139.8	2169.8	1.28	1.28	1.21
2200.1	2230.1	1.22	1.15	0.81

Frequency Mixer

ZX05-10+

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
480.0	20.1	7.02	10.0	20.1	6.37	800.0	200.1	7.10
467.9	32.2	7.03	30.0	40.1	6.50	779.7	220.4	7.07
455.9	44.2	7.03	50.0	60.1	6.58	759.5	240.6	7.05
443.8	56.3	6.99	70.0	80.1	6.54	739.2	260.9	7.02
431.8	68.3	6.97	90.0	100.1	6.56	719.0	281.1	7.00
419.7	80.4	6.97	110.0	120.1	6.62	698.7	301.4	6.97
407.7	92.4	6.98	130.0	140.1	6.57	678.5	321.6	6.94
395.6	104.5	6.95	150.0	160.1	6.58	658.2	341.9	6.93
383.6	116.5	6.93	170.0	180.1	6.59	637.9	362.2	6.91
371.5	128.6	6.86	190.0	200.1	6.62	617.7	382.4	6.87
359.5	140.6	6.84	210.0	220.1	6.63	597.4	402.7	6.85
347.4	152.7	6.85	230.0	240.1	6.61	577.2	422.9	6.84
335.4	164.7	6.83	250.0	260.1	6.65	556.9	443.2	6.82
323.3	176.8	6.81	270.0	280.1	6.72	536.7	463.4	6.81
311.3	188.8	6.80	290.0	300.1	6.76	516.4	483.7	6.83
299.2	200.9	6.79	310.0	320.1	6.76	496.2	503.9	6.78
287.2	212.9	6.78	330.0	340.1	6.81	475.9	524.2	6.80
275.1	225.0	6.76	350.0	360.1	6.80	455.6	544.5	6.81
263.1	237.0	6.73	370.0	380.1	6.88	435.4	564.7	6.78
251.0	249.1	6.71	390.0	400.1	6.93	415.1	585.0	6.79
239.0	261.1	6.67	410.0	420.1	6.91	394.9	605.2	6.79
226.9	273.2	6.65	430.0	440.1	6.96	374.6	625.5	6.80
214.9	285.2	6.74	450.0	460.1	7.03	354.4	645.7	6.83
202.8	297.3	6.74	470.0	480.1	7.08	334.1	666.0	6.88
190.8	309.3	6.74	490.0	500.1	7.13	313.8	686.3	6.85
178.7	321.4	6.73	510.0	520.1	7.13	293.6	706.5	6.90
166.7	333.4	6.68	530.0	540.1	7.14	273.3	726.8	6.88
154.6	345.5	6.67	550.0	560.1	7.20	253.1	747.0	6.84
142.6	357.5	6.72	570.0	580.1	7.28	232.8	767.3	6.70
130.5	369.6	6.75	590.0	600.1	7.31	212.6	787.5	6.69
118.5	381.6	6.79	610.0	620.1	7.40	192.3	807.8	6.63
106.4	393.7	6.76	630.0	640.1	7.46	172.1	828.0	6.54
94.4	405.7	6.75	650.0	660.1	7.62	151.8	848.3	6.54
82.3	417.8	6.74	670.0	680.1	7.68	131.5	868.6	6.48
70.3	429.8	6.78	690.0	700.1	7.76	111.3	888.8	6.51
58.2	441.9	6.78	710.0	720.1	7.74	91.0	909.1	6.48
46.2	453.9	6.77	730.0	740.1	7.81	70.8	929.3	6.52
34.1	466.0	6.83	750.0	760.1	7.87	50.5	949.6	6.59
22.1	478.0	6.84	770.0	780.1	7.82	30.3	969.8	6.59
10.0	490.1	6.65	790.0	800.1	7.77	10.0	990.1	6.80

REV. X2
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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
10.1	55.82	64.63	70.05	49.87	52.50	56.40
70.4	59.83	62.51	64.56	47.14	45.09	43.87
130.7	59.54	60.63	62.03	42.60	40.12	38.49
190.9	58.42	59.40	59.48	38.98	36.55	35.45
251.2	57.59	57.71	56.89	35.81	34.17	33.35
311.5	56.65	56.21	55.07	33.63	32.52	31.76
371.8	56.56	55.57	53.71	32.04	31.12	30.34
432.0	56.43	55.35	53.17	30.92	30.05	29.23
492.3	56.61	56.11	53.73	30.02	29.34	28.58
552.6	56.14	55.28	52.01	29.09	28.26	27.41
612.9	56.27	55.65	51.08	28.61	27.70	26.73
673.1	55.24	59.09	52.88	28.29	27.53	26.56
733.4	53.47	62.90	56.26	27.69	26.87	25.94
793.7	51.52	63.86	61.26	26.90	26.00	25.21
854.0	48.73	56.13	70.38	25.74	24.80	24.10
914.2	46.37	51.96	60.12	24.62	23.54	22.77
974.5	44.52	49.49	56.14	23.75	22.53	21.60
1034.8	43.54	48.31	56.77	22.92	21.69	20.56
1095.1	43.30	48.27	56.90	22.26	21.22	20.06
1155.3	43.50	48.80	51.10	21.51	20.70	19.71
1215.6	45.53	54.88	48.34	20.34	19.40	18.44
1275.9	52.39	49.85	42.83	18.91	17.80	16.95
1336.2	57.38	42.69	38.76	17.49	16.42	15.73
1396.4	44.99	38.17	35.45	16.46	15.51	14.89
1436.6	41.06	35.89	33.59	15.92	15.04	14.43
1496.9	36.84	32.97	30.94	15.26	14.41	13.79
1537.1	34.89	31.55	29.69	14.94	14.11	13.49
1597.3	32.15	29.41	27.79	14.38	13.59	12.98
1637.5	30.71	28.22	26.70	13.98	13.18	12.57
1697.8	28.83	26.64	25.30	13.56	12.75	12.15
1738.0	27.82	25.73	24.45	13.35	12.51	11.92
1798.3	26.54	24.61	23.34	13.07	12.21	11.58
1838.4	26.02	24.16	22.90	12.97	12.10	11.46
1898.7	25.12	23.40	22.15	12.80	11.95	11.29
1938.9	24.38	22.76	21.55	12.64	11.81	11.15
1999.2	23.58	22.15	20.93	12.59	11.78	11.11
2039.4	23.09	21.80	20.62	12.52	11.74	11.07
2099.6	22.12	21.19	20.11	12.42	11.71	11.05
2139.8	21.82	21.09	20.04	12.51	11.85	11.18
2200.1	20.42	20.09	19.14	12.36	11.83	11.15

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	34.08	33.20	47.48
70.4	100.4	33.50	33.42	33.25
130.7	160.7	29.20	29.39	29.44
190.9	220.9	26.18	26.45	26.48
251.2	281.2	24.41	24.71	24.74
311.5	341.5	23.12	23.38	23.50
371.8	401.8	22.07	22.42	22.64
432.0	462.0	21.35	21.77	22.07
492.3	522.3	20.51	20.93	21.28
552.6	582.6	19.75	20.31	20.77
612.9	642.9	19.37	20.10	20.70
673.1	703.1	18.99	19.73	20.27
733.4	763.4	18.56	19.09	19.47
793.7	823.7	17.81	18.18	18.39
854.0	884.0	16.91	17.23	17.46
914.2	944.2	16.39	16.72	16.99
974.5	1004.5	16.17	16.58	16.88
1034.8	1064.8	16.24	16.77	17.21
1095.1	1125.1	16.62	17.28	18.23
1155.3	1185.3	17.39	18.18	19.16
1215.6	1245.6	18.20	18.59	18.82
1275.9	1305.9	18.46	18.26	17.96
1336.2	1366.2	17.81	17.30	16.85
1396.4	1426.4	16.50	15.89	15.40
1436.6	1466.6	15.55	14.89	14.40
1496.9	1526.9	14.23	13.53	13.00
1537.1	1567.1	13.40	12.67	12.11
1597.3	1627.3	12.36	11.62	11.07
1637.5	1667.5	11.65	10.95	10.42
1697.8	1727.8	10.72	10.07	9.60
1738.0	1768.0	10.14	9.52	9.11
1798.3	1828.3	9.31	8.76	8.40
1838.4	1868.4	8.88	8.36	8.03
1898.7	1928.7	8.17	7.71	7.41
1938.9	1968.9	7.79	7.36	7.08
1999.2	2029.2	7.27	6.88	6.62
2039.4	2069.4	7.05	6.68	6.43
2099.6	2129.6	6.68	6.36	6.12
2139.8	2169.8	6.52	6.22	6.01
2200.1	2230.1	6.28	6.02	5.82

Frequency Mixer

ZX05-10+

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	1.65	1.44	1.57	10.1	1.10	1.55	2.24	10.1	1.47	1.35	1.17
70.4	100.4	1.55	1.43	1.36	70.4	1.10	1.59	2.25	30.4	1.36	1.18	1.04
130.7	160.7	1.50	1.40	1.32	130.7	1.17	1.63	2.30	50.6	1.40	1.11	1.05
190.9	220.9	1.54	1.44	1.40	190.9	1.24	1.65	2.29	70.9	1.38	1.10	1.05
251.2	281.2	1.55	1.46	1.42	251.2	1.29	1.69	2.33	91.1	1.40	1.12	1.06
311.5	341.5	1.56	1.48	1.44	311.5	1.34	1.76	2.41	111.4	1.38	1.13	1.08
371.8	401.8	1.56	1.49	1.45	371.8	1.37	1.81	2.47	131.6	1.39	1.15	1.09
432.0	462.0	1.57	1.50	1.46	432.0	1.41	1.87	2.53	151.9	1.40	1.15	1.08
492.3	522.3	1.60	1.53	1.49	492.3	1.44	1.92	2.58	172.2	1.42	1.16	1.09
552.6	582.6	1.60	1.53	1.49	552.6	1.47	1.99	2.68	192.4	1.44	1.18	1.09
612.9	642.9	1.60	1.54	1.50	612.9	1.51	2.02	2.71	212.7	1.46	1.22	1.13
673.1	703.1	1.61	1.55	1.51	673.1	1.56	2.10	2.79	232.9	1.46	1.23	1.15
733.4	763.4	1.56	1.51	1.47	733.4	1.63	2.22	2.94	253.2	1.45	1.23	1.14
793.7	823.7	1.53	1.47	1.44	793.7	1.64	2.22	2.92	273.4	1.45	1.23	1.16
854.0	884.0	1.53	1.45	1.41	854.0	1.69	2.27	2.98	293.7	1.46	1.24	1.16
914.2	944.2	1.49	1.41	1.36	914.2	1.78	2.42	3.16	313.9	1.47	1.24	1.17
974.5	1004.5	1.45	1.36	1.31	974.5	1.83	2.44	3.16	334.2	1.45	1.24	1.16
1034.8	1064.8	1.39	1.30	1.23	1034.8	1.90	2.53	3.24	354.5	1.45	1.23	1.15
1095.1	1125.1	1.29	1.20	1.12	1095.1	2.00	2.65	3.36	374.7	1.44	1.23	1.14
1155.3	1185.3	1.19	1.09	1.02	1155.3	2.04	2.69	3.40	395.0	1.46	1.24	1.13
1215.6	1245.6	1.15	1.09	1.10	1215.6	2.08	2.71	3.40	415.2	1.47	1.25	1.14
1275.9	1305.9	1.20	1.20	1.22	1275.9	2.11	2.73	3.41	435.5	1.47	1.25	1.14
1336.2	1366.2	1.29	1.32	1.34	1336.2	2.13	2.74	3.42	455.7	1.48	1.25	1.14
1396.4	1426.4	1.40	1.45	1.49	1396.4	2.11	2.71	3.37	476.0	1.47	1.25	1.13
1436.6	1466.6	1.46	1.51	1.55	1436.6	2.15	2.74	3.40	496.3	1.47	1.24	1.13
1496.9	1526.9	1.58	1.65	1.70	1496.9	2.21	2.78	3.43	516.5	1.48	1.25	1.12
1537.1	1567.1	1.65	1.73	1.79	1537.1	2.26	2.82	3.45	536.8	1.47	1.24	1.12
1597.3	1627.3	1.73	1.80	1.86	1597.3	2.36	2.90	3.51	557.0	1.47	1.24	1.11
1637.5	1667.5	1.78	1.85	1.91	1637.5	2.44	2.95	3.52	577.3	1.48	1.24	1.10
1697.8	1727.8	1.82	1.86	1.91	1697.8	2.55	3.02	3.57	597.5	1.46	1.23	1.09
1738.0	1768.0	1.85	1.89	1.93	1738.0	2.63	3.08	3.60	617.8	1.45	1.22	1.08
1798.3	1828.3	1.81	1.82	1.84	1798.3	2.69	3.07	3.53	638.0	1.46	1.23	1.08
1838.4	1868.4	1.96	1.98	2.01	1838.4	2.79	3.15	3.59	658.3	1.45	1.22	1.07
1898.7	1928.7	1.99	2.00	2.02	1898.7	2.86	3.15	3.54	678.6	1.45	1.21	1.07
1938.9	1968.9	2.14	2.15	2.18	1938.9	2.95	3.18	3.58	698.8	1.45	1.21	1.07
1999.2	2029.2	2.24	2.25	2.27	1999.2	2.96	3.17	3.46	719.1	1.43	1.20	1.05
2039.4	2069.4	2.38	2.39	2.41	2039.4	3.01	3.19	3.49	739.3	1.42	1.19	1.05
2099.6	2129.6	2.45	2.47	2.47	2099.6	2.99	3.12	3.37	759.6	1.42	1.18	1.04
2139.8	2169.8	2.57	2.59	2.59	2139.8	3.01	3.09	3.36	779.8	1.40	1.17	1.04
2200.1	2230.1	2.55	2.56	2.53	2200.1	2.91	2.97	3.17	800.1	1.39	1.16	1.02

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	0	18	11	32	10	25	17	28	43	48
1	-	14	0	36	15	31	23	36	37	41	46	42
2	105	73	44	72	46	59	48	57	50	61	53	69
3	118	69	81	71	68	73	62	76	69	78	78	105
4	118	95	94	97	80	94	84	95	87	96	96	97
5	119	103	102	103	113	99	87	96	100	99	107	99
6	110	106	101	112	103	99	101	85	98	110	106	110
7	112	107	112	105	111	103	95	86	91	97	96	101
8	122	103	100	103	100	111	109	104	93	88	108	101
9	119	120	102	97	108	105	100	104	97	87	92	102
10	125	98	106	102	100	98	114	102	109	99	91	90
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 500.10 MHz; -14.00 dBm.
LO IN: 530.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -21.22 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	9	28	24	46	21	37	28	39	57	59
1	-	14	0	34	14	33	23	40	38	45	58	47
2	98	61	36	64	36	53	38	51	43	53	47	62
3	113	49	53	54	50	57	45	56	54	55	61	64
4	122	77	72	68	61	68	61	64	64	66	63	79
5	127	74	75	71	61	72	61	69	64	66	68	76
6	109	101	89	80	73	82	71	87	69	94	68	83
7	118	95	93	92	79	92	79	94	80	87	84	96
8	113	100	105	106	101	105	106	94	92	97	90	92
9	118	111	112	107	102	107	106	129	93	96	92	100
10	113	113	113	108	118	109	111	101	101	100	95	108
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 500.10 MHz; -4.00 dBm.
LO IN: 530.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -11.38 dBm

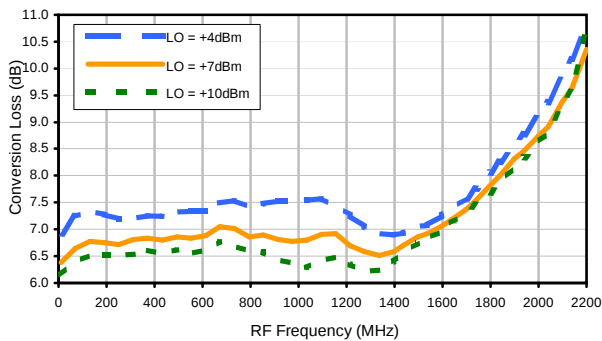
- Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

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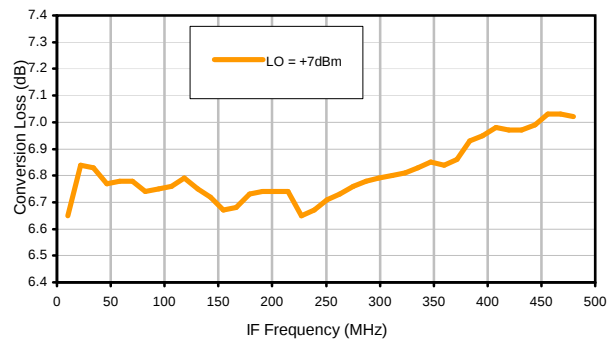


Typical Performance Curves

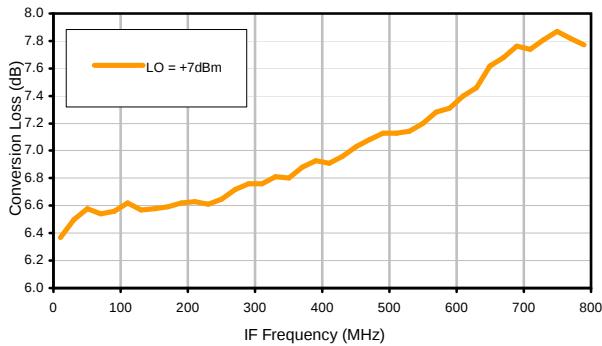
Conversion Loss @ IF=30MHz



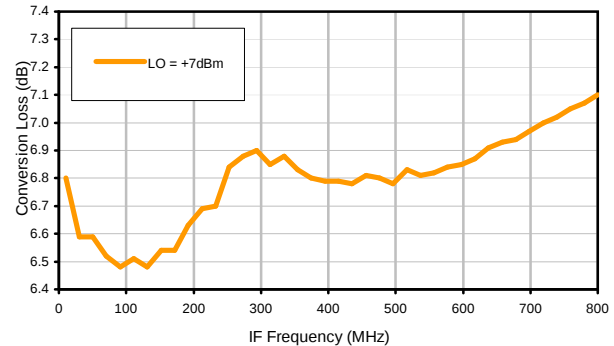
Conversion Loss vs. IF @ RF=500.1MHz



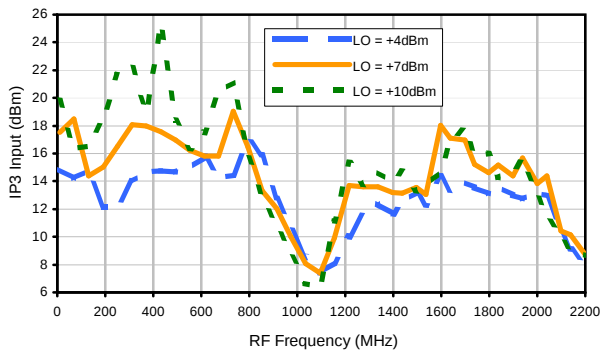
Conversion Loss vs. IF @ RF=10.1MHz



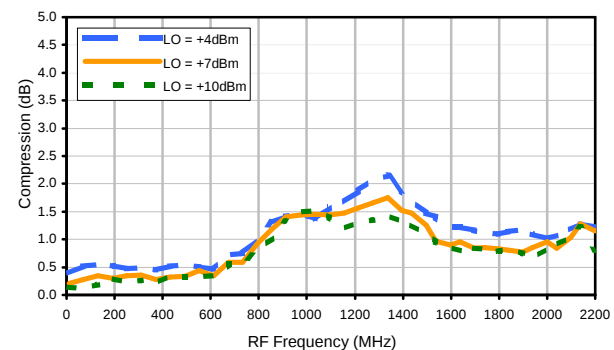
Conversion Loss vs. IF @ RF=1000.1MHz



IP3 Input

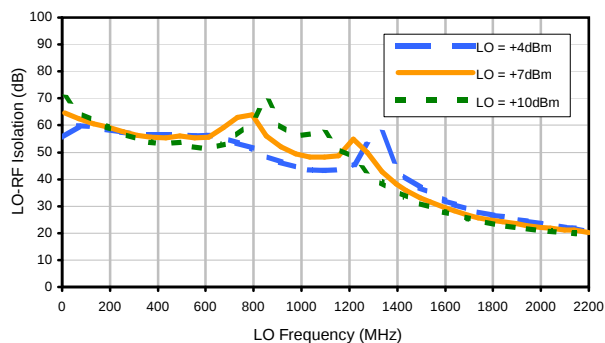


Compression @ RF IN=+1dBm

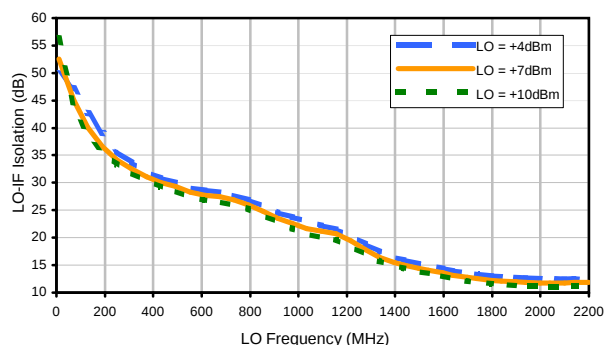


Typical Performance Curves

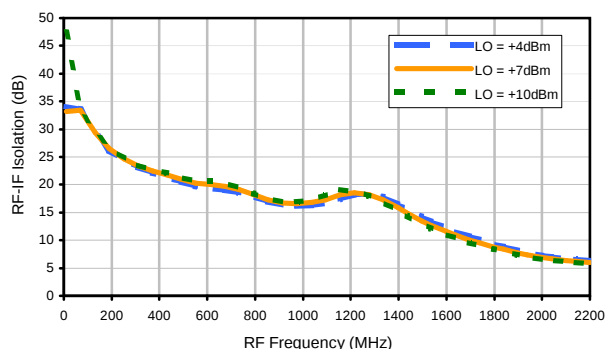
LO-RF Isolation



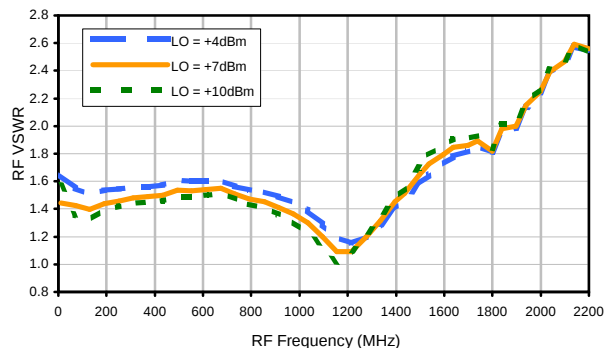
LO-IF Isolation



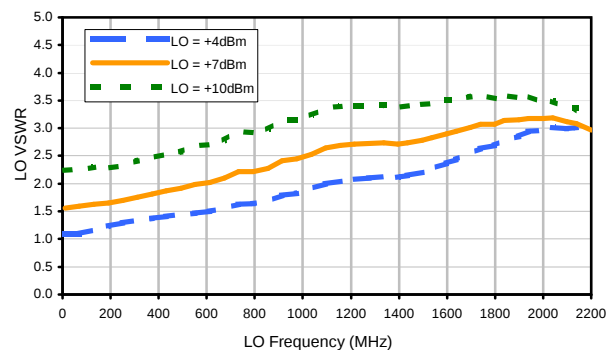
RF-IF Isolation



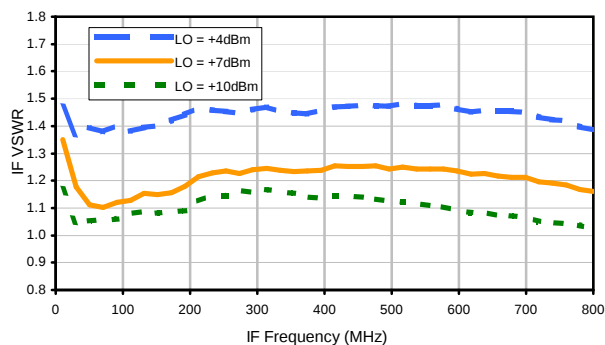
RF VSWR



LO VSWR



IF VSWR



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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	0	18	11	32	10	25	17	28	43	48
1	-	14	0	36	15	31	23	36	37	41	46	42
2	105	73	44	72	46	59	48	57	50	61	53	69
3	118	69	81	71	68	73	62	76	69	78	78	105
4	118	95	94	97	80	94	84	95	87	96	96	97
5	119	103	102	103	113	99	87	96	100	99	107	99
6	110	106	101	112	103	99	101	85	98	110	106	110
7	112	107	112	105	111	103	95	86	91	97	96	101
8	122	103	100	103	100	111	109	104	93	88	108	101
9	119	120	102	97	108	105	100	104	97	87	92	102
10	125	98	106	102	100	98	114	102	109	99	91	90
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 500.10 MHz; -14.00 dBm.
LO IN: 530.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -21.22 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	9	28	24	46	21	37	28	39	57	59
1	-	14	0	34	14	33	23	40	38	45	58	47
2	98	61	36	64	36	53	38	51	43	53	47	62
3	113	49	53	54	50	57	45	56	54	55	61	64
4	122	77	72	68	61	68	61	64	64	66	63	79
5	127	74	75	71	61	72	61	69	64	66	68	76
6	109	101	89	80	73	82	71	87	69	94	68	83
7	118	95	93	92	79	92	79	94	80	87	84	96
8	113	100	105	106	101	105	106	94	92	97	90	92
9	118	111	112	107	102	107	106	129	93	96	92	100
10	113	113	113	108	118	109	111	101	101	100	95	108
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

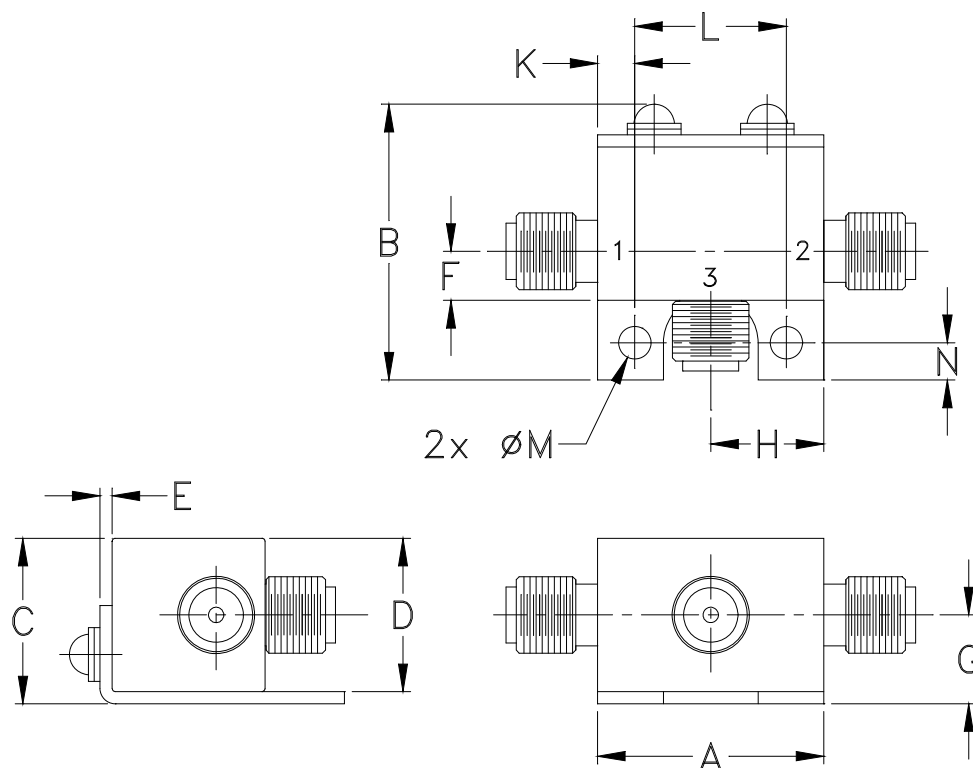
Test conditions: RF IN: 500.10 MHz; -4.00 dBm.
LO IN: 530.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -11.38 dBm

- 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