

Up Converter Frequency Mixer

Level 17 (LO Power +17 dBm) 0.1 to 3900 MHz

ZX05-U432H-S+



Generic photo used for illustration purposes only

CASE STYLE: FL905

Connectors	Model
SMA	ZX05-U432H-S+

+RoHS Compliant

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

Maximum Ratings

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

Coaxial Connections

LO	3
IF (IN)	1
RF (OUT)	2

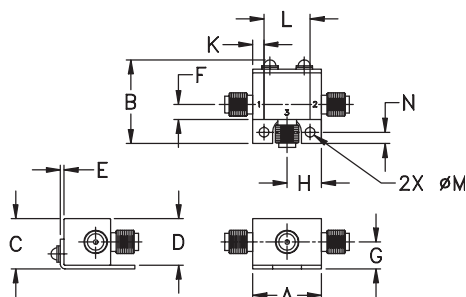
Features

- up converter mixer
- low conversion loss, 7.5 dB typ.
- high IP3, 26 dB typ.
- rugged construction
- small size
- protected by US patents, 6,790,049 and 7,027,795

Applications

- WIMAX
- wide band receivers

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

Electrical Specifications

FREQUENCY (MHz)			CONVERSION LOSS* (dB)			LO-IF (IN) ISOLATION (dB)		LO-RF (OUT) ISOLATION (dB)		IP3 at center band (dBm)
IF (IN)	LO	RF (OUT)	Typ.	σ**	Max.	Typ.	Min.	Typ.	Min.	Typ.
0.1-800	1100-4250	1100-3900	7.5	0.2	9.8	24	13	35	26	26

1 dB COMPR. +14 dBm typ.

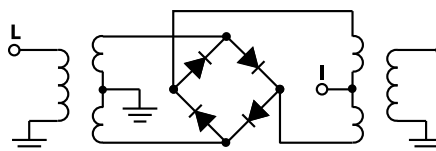
* Conversion Loss at 30 MHz IF

** σ is a standard deviation

Typical Performance Data

Frequency (MHz)			Conversion Loss (dB)	Isolation L-I (dB)	Isolation L-R (dB)	VSWR RF (OUT) Port (:1)	VSWR LO Port (:1)
IF (IN)	LO	RF (OUT)	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
30.00	1110.10	1080.10	5.87	16.85	43.45	2.00	1.82
30.00	1210.10	1180.10	5.54	16.93	41.98	2.34	2.00
30.00	1410.10	1380.10	5.72	19.09	41.68	2.68	2.35
30.00	1590.10	1560.10	5.92	22.40	34.55	2.45	2.54
30.00	1690.10	1660.10	6.33	23.52	36.11	2.58	2.57
30.00	1870.10	1840.10	6.61	28.49	37.13	2.13	2.62
30.00	2050.10	2020.10	6.75	39.92	36.77	1.40	2.49
30.00	2230.10	2200.10	7.31	38.90	41.79	1.55	2.42
30.00	2410.10	2380.10	6.70	35.55	36.50	2.35	1.90
30.00	2490.10	2460.10	7.17	32.90	35.94	2.31	1.90
30.00	2670.10	2640.10	7.43	27.66	36.16	3.87	1.49
30.00	2850.10	2820.10	7.24	22.55	31.49	3.50	1.26
30.00	2950.10	2920.10	6.76	23.39	32.11	2.68	1.05
30.00	3030.10	3000.10	6.31	23.71	30.81	2.34	1.09
30.00	3210.10	3180.10	6.03	26.80	33.00	2.63	1.35
30.00	3490.10	3460.10	6.50	25.83	30.89	2.01	1.63
30.00	3670.10	3640.10	6.86	24.76	29.44	1.93	1.93
30.00	3850.10	3820.10	7.23	27.98	29.14	2.22	2.47
30.00	4030.10	4000.10	8.19	29.33	30.14	3.37	2.96
30.00	4290.10	4260.10	9.02	27.06	31.38	4.26	3.37

Electrical Schematic



Notes

- 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.
- 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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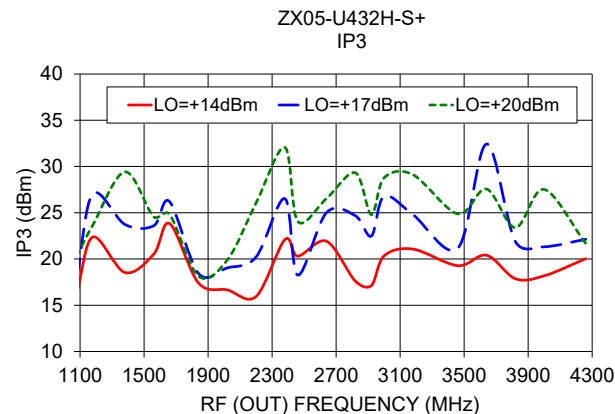
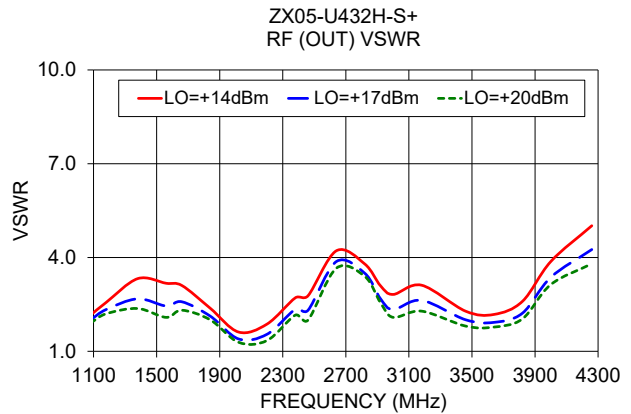
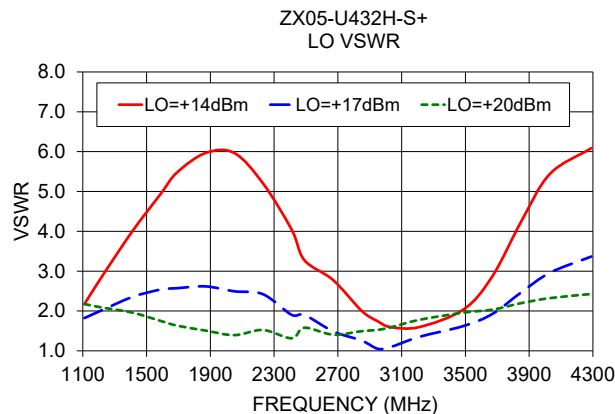
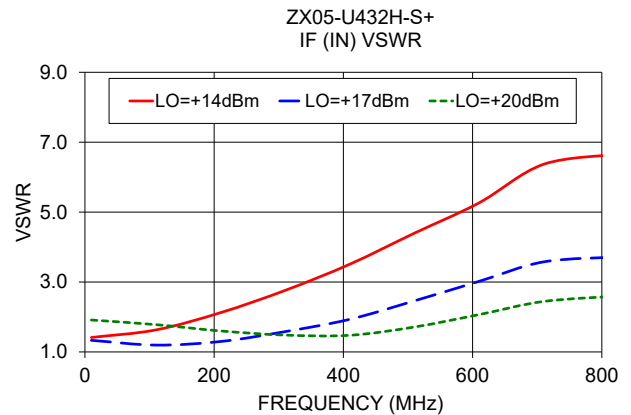
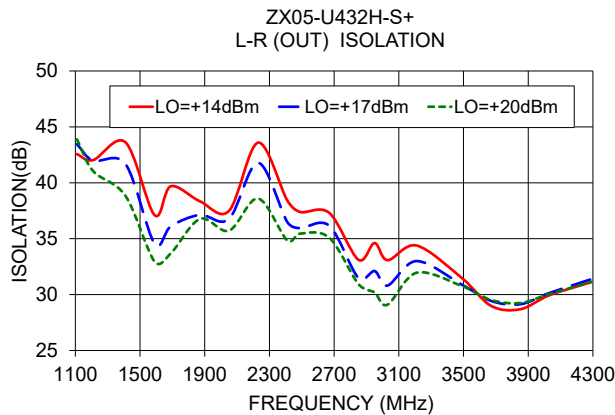
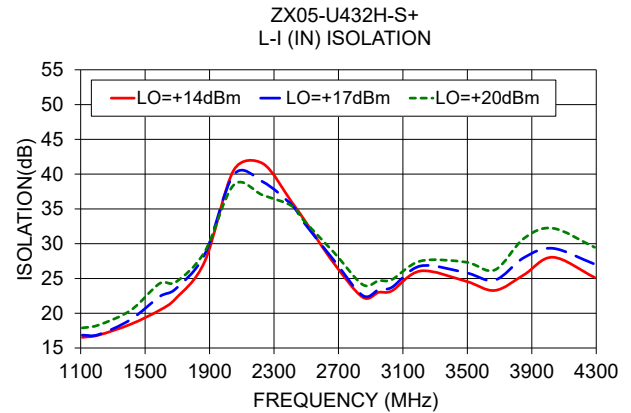
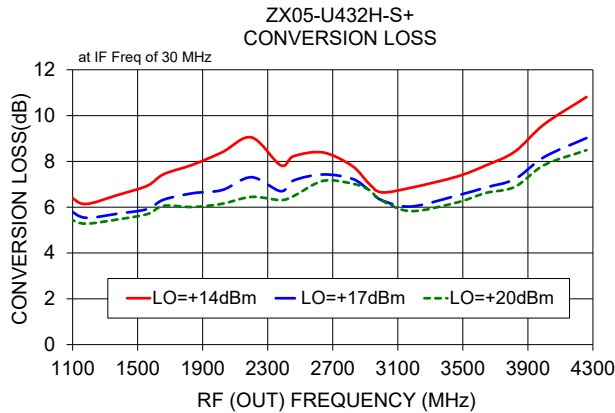


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Performance Charts

ZX05-U432H-S+



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Frequency Mixer (Upconverter)

ZX05-U432H-S+

Typical Performance Data

IF INPUT (MHz)	LO INPUT (MHz)	RF OUTPUT (MHz)	CONVERSION LOSS (dB)			LO-IF ISOLATION (dB)			LO-RF ISOLATION (dB)			IP-3 INPUT (dBm)		
			@LO (dBm)			@LO (dBm)			@LO (dBm)			@LO (dBm)		
			+14	+17	+20	+14	+17	+20	+14	+17	+20	+14	+17	+20
30	1110	1080	6.48	5.87	5.48	16.53	16.85	17.89	42.56	43.45	43.88	16.29	17.99	20.35
30	1210	1180	6.14	5.54	5.28	16.85	16.93	18.30	42.03	41.98	41.05	22.38	27.03	23.67
30	1310	1280	6.24	5.70	5.56	17.45	18.03	19.47	43.44	42.75	39.83	18.57	26.63	21.90
30	1410	1380	6.54	5.72	5.47	18.42	19.09	20.42	43.62	41.68	38.83	18.54	23.74	29.42
30	1510	1480	6.89	5.85	5.55	19.54	20.58	22.23	41.65	37.01	34.13	18.05	21.58	26.08
30	1590	1560	6.94	5.92	5.70	20.44	22.40	24.28	37.11	34.55	32.95	20.51	23.59	24.56
30	1690	1660	7.44	6.33	6.06	22.12	23.52	24.48	39.69	36.11	33.69	23.83	26.19	24.82
30	1770	1740	7.55	6.48	6.18	22.81	24.92	26.10	39.32	36.52	35.14	18.74	21.23	22.76
30	1870	1840	7.86	6.61	6.01	27.45	28.49	28.86	38.35	37.13	36.77	17.41	18.44	18.14
30	1950	1920	8.19	6.67	6.05	32.38	32.59	32.30	37.35	36.95	36.36	16.79	17.29	17.55
30	2050	2020	8.40	6.75	6.15	40.58	39.92	38.44	37.49	36.77	35.72	16.66	19.04	19.89
30	2130	2100	8.76	6.98	6.28	43.71	42.57	40.08	39.60	38.47	36.53	15.52	18.78	21.36
30	2230	2200	9.05	7.31	6.45	41.53	38.90	36.98	43.59	41.79	38.59	15.95	20.22	26.06
30	2310	2280	8.64	6.82	6.46	41.33	38.48	36.18	43.29	40.12	37.32	19.32	22.75	24.71
30	2410	2380	7.83	6.70	6.31	35.97	35.55	35.43	38.43	36.50	34.85	22.10	26.53	32.06
30	2490	2460	8.23	7.17	6.49	33.35	32.90	33.19	37.39	35.94	35.45	20.31	18.26	24.07
30	2590	2560	9.67	7.60	7.01	28.98	28.26	29.21	39.06	37.26	36.18	16.17	21.58	26.82
30	2670	2640	8.39	7.43	7.15	27.23	27.66	28.79	37.31	36.16	35.09	21.92	25.02	26.54
30	2770	2740	8.12	7.35	6.98	23.94	24.58	26.29	35.20	34.28	33.88	19.46	26.87	25.99
30	2850	2820	7.80	7.24	7.03	22.30	22.55	24.12	33.12	31.49	30.95	17.61	24.68	29.32
30	2950	2920	7.05	6.76	6.77	23.01	23.39	24.69	34.61	32.11	30.19	17.12	22.48	24.80
30	3030	3000	6.65	6.31	6.30	23.20	23.71	24.82	33.08	30.81	29.10	20.34	26.78	28.78
30	3130	3100	6.75	6.28	6.12	24.38	25.14	26.20	32.74	31.46	30.85	20.06	26.53	28.53
30	3210	3180	6.85	6.03	5.83	26.08	26.80	27.51	34.39	33.00	31.96	21.07	24.80	29.12
30	3310	3280	6.69	5.91	5.66	27.56	28.81	29.95	32.96	31.94	30.95	18.54	20.44	25.10
30	3390	3360	7.00	6.17	5.85	26.50	27.80	29.15	32.99	32.14	31.50	18.96	20.47	22.89
30	3490	3460	7.33	6.50	6.20	24.61	25.83	27.35	31.48	30.89	30.77	19.28	21.16	24.88
30	3570	3540	7.58	6.75	6.46	23.62	24.59	26.00	30.32	30.41	30.67	23.35	25.74	30.02
30	3670	3640	7.82	6.86	6.62	23.28	24.76	26.22	29.00	29.44	29.52	20.41	32.43	27.56
30	3750	3720	7.67	6.81	6.60	23.88	25.64	26.89	28.52	29.14	29.25	17.86	26.72	27.86
30	3850	3820	8.43	7.23	6.89	25.51	27.98	30.74	28.69	29.14	29.25	17.87	21.89	23.38
30	3930	3900	9.46	8.19	7.69	26.88	28.85	32.30	29.78	29.97	29.94	19.01	21.00	23.76
30	4030	4000	9.62	8.19	7.84	28.05	29.33	32.22	29.94	30.14	30.05	18.18	21.32	27.52
30	4110	4080	9.68	8.25	7.87	27.20	28.88	31.22	30.05	30.38	30.09	19.37	19.75	25.94
30	4210	4180	10.48	8.94	8.54	25.81	27.57	29.78	30.43	30.67	30.21	18.69	20.83	23.78
30	4290	4260	10.81	9.02	8.49	25.14	27.06	29.48	31.12	31.38	31.13	20.03	22.13	21.68



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IF/RF MICROWAVE COMPONENTS

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Frequency Mixer (Upconverter)

ZX05-U432H-S+

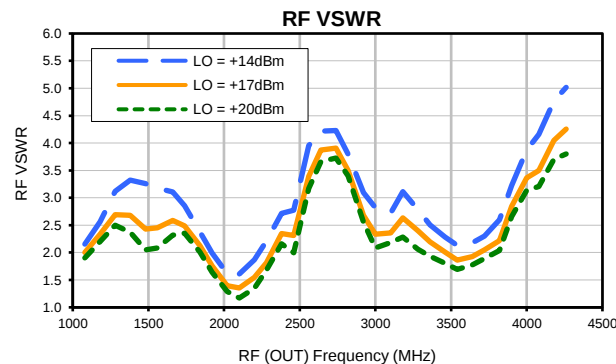
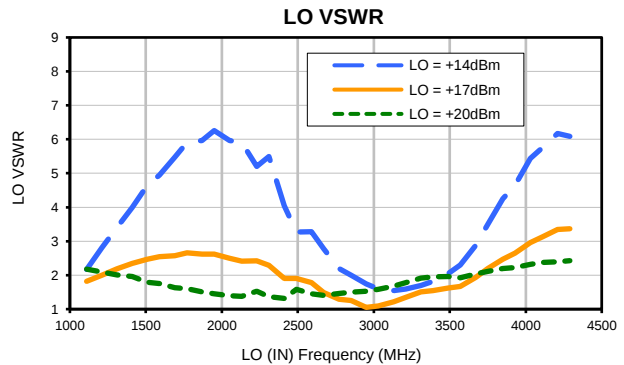
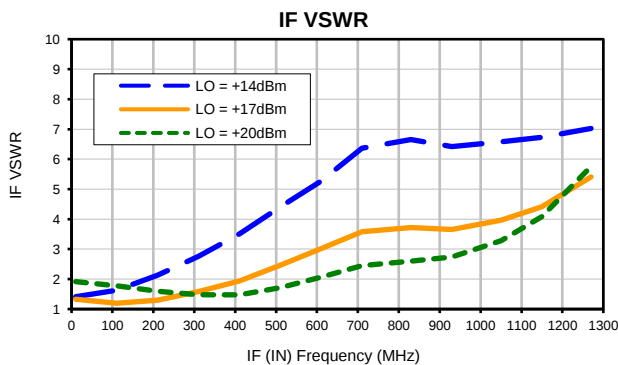
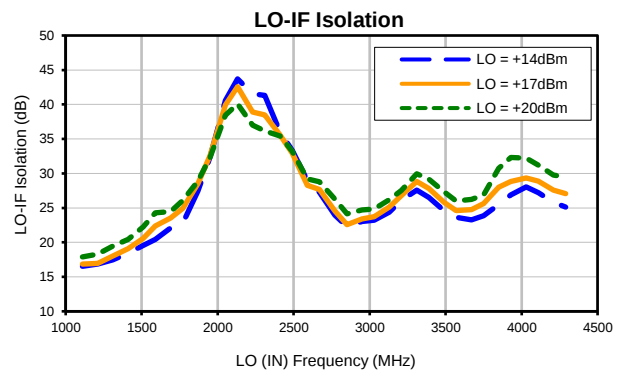
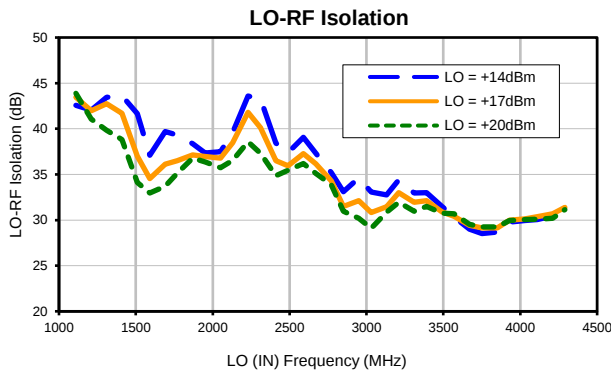
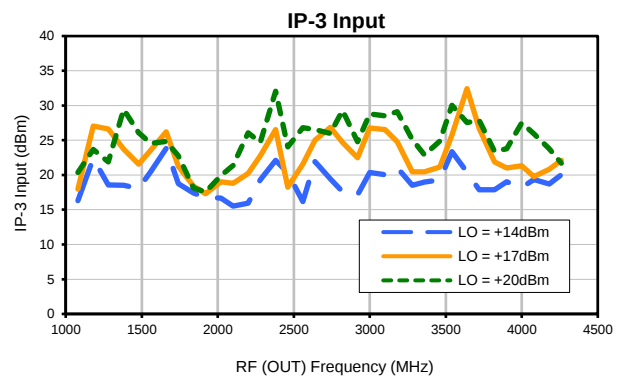
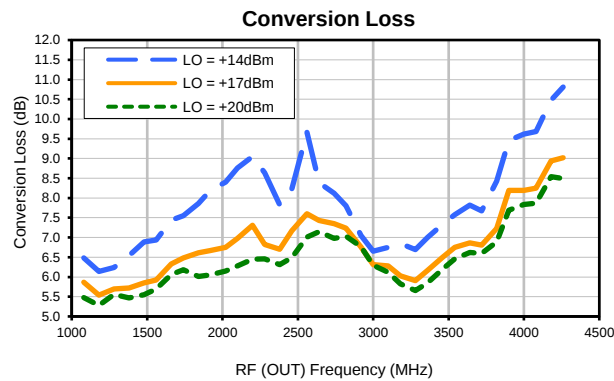
Typical Performance Data

IF INPUT (MHz)	IF VSWR (:1)			LO INPUT (MHz)	LO VSWR (:1)			RF OUTPUT (MHz)	LO INPUT (MHz)	RF VSWR (:1)		
	@LO (dBm)				@LO (dBm)					@LO (dBm)		
	+14	+17	+20		+14	+17	+20			+14	+17	+20
10	1.41	1.33	1.91	1110	2.17	1.82	2.18	1080	1110	2.16	2.00	1.90
110	1.63	1.19	1.78	1210	2.80	2.00	2.09	1180	1210	2.57	2.34	2.20
210	2.12	1.30	1.60	1310	3.40	2.18	2.01	1280	1310	3.12	2.69	2.50
310	2.76	1.58	1.48	1410	4.00	2.35	1.96	1380	1410	3.33	2.68	2.37
410	3.51	1.93	1.48	1510	4.64	2.47	1.79	1480	1510	3.26	2.43	2.05
510	4.40	2.46	1.71	1590	4.95	2.54	1.75	1560	1590	3.18	2.45	2.09
610	5.27	3.02	2.07	1690	5.47	2.57	1.63	1660	1690	3.11	2.58	2.32
710	6.37	3.58	2.44	1770	5.91	2.66	1.60	1740	1770	2.86	2.48	2.35
830	6.66	3.72	2.60	1870	5.97	2.62	1.51	1840	1870	2.38	2.13	2.01
930	6.42	3.66	2.73	1950	6.26	2.62	1.46	1920	1950	1.99	1.76	1.64
1050	6.58	3.96	3.28	2050	5.97	2.49	1.39	2020	2050	1.62	1.40	1.29
1150	6.73	4.41	4.08	2130	5.91	2.41	1.38	2100	2130	1.61	1.35	1.17
1270	7.02	5.41	5.75	2230	5.20	2.42	1.52	2200	2230	1.87	1.55	1.35
				2310	5.49	2.29	1.37	2280	2310	2.21	1.81	1.68
				2410	4.04	1.90	1.32	2380	2410	2.71	2.35	2.16
				2490	3.27	1.90	1.58	2460	2490	2.78	2.31	2.00
				2590	3.28	1.78	1.45	2560	2590	3.95	3.39	3.17
				2670	2.78	1.49	1.41	2640	2670	4.22	3.87	3.66
				2770	2.20	1.29	1.46	2740	2770	4.23	3.90	3.73
				2850	2.00	1.26	1.49	2820	2850	3.79	3.50	3.40
				2950	1.74	1.05	1.53	2920	2950	3.10	2.68	2.56
				3030	1.60	1.09	1.59	3000	3030	2.82	2.34	2.09
				3130	1.55	1.22	1.68	3100	3130	2.72	2.36	2.18
				3210	1.60	1.35	1.78	3180	3210	3.12	2.63	2.29
				3310	1.70	1.51	1.92	3280	3310	2.79	2.40	2.06
				3390	1.82	1.54	1.95	3360	3390	2.50	2.20	1.93
				3490	2.04	1.63	1.96	3460	3490	2.28	2.01	1.81
				3570	2.30	1.67	1.93	3540	3570	2.13	1.86	1.69
				3670	2.88	1.93	2.03	3640	3670	2.18	1.93	1.78
				3750	3.50	2.19	2.11	3720	3750	2.30	2.05	1.89
				3850	4.25	2.47	2.20	3820	3850	2.60	2.22	2.04
				3930	4.64	2.65	2.23	3900	3930	3.22	2.84	2.66
				4030	5.44	2.96	2.32	4000	4030	3.87	3.37	3.14
				4110	5.75	3.13	2.37	4080	4110	4.16	3.50	3.21
				4210	6.17	3.34	2.39	4180	4210	4.77	4.05	3.70
				4290	6.09	3.37	2.43	4260	4290	5.02	4.26	3.80

Frequency Mixer (Upconverter)

ZX05-U432H-S+

Typical Performance Curves



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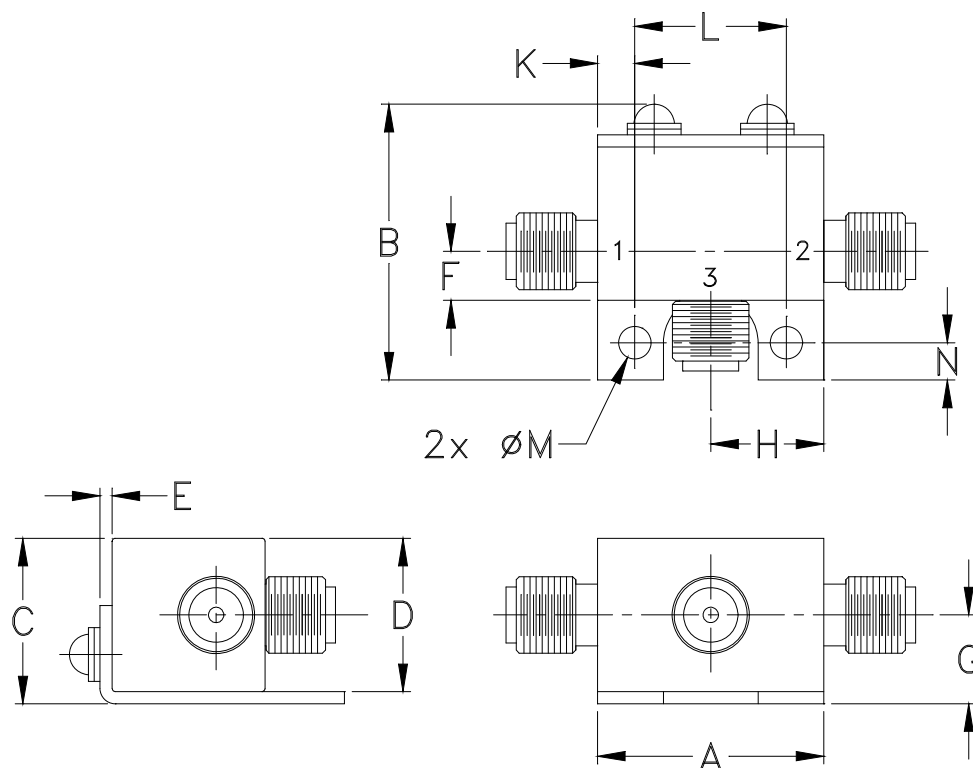


IF/RF MICROWAVE COMPONENTS



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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