

Amplifier

50Ω 0.5 to 2.5 GHz

Features

- From 2.8V to 5V operation
- High directivity, 24 dB typ.
- Wide bandwidth, 0.5 to 2.5 GHz
- Low noise figure, 3.1 dB typ.
- Output power, up to 18 dBm typ.
- Protected by US patent 6,790,049

Applications

- Buffer amplifier
- Cellular
- PCN
- Lab
- Instrumentation
- Test equipment



CASE STYLE: GA955

Connectors	Model
SMA	ZX60-2534M-S+

+RoHS Compliant

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

Electrical Specifications at $T_{AMB} = 25^{\circ}\text{C}$

MODEL NO.	FREQ. (GHz) f _L - f _U	DC VOLTAGE @ Pin V+ (V)	GAIN over frequency in GHz Typ (dB)							MAXIMUM POWER (dBm) Output (1 dB Comp.) Typ. f _L f _U		DYNAMIC RANGE			VSWR (:1) Typ. In Out		ACTIVE DIRECTIVITY (dB) Isolation-Gain Typ.	DC OPERATING CURRENT @ Pin V+ (mA) Typ. Max.		
			0.5	1.0	1.5	2.0	2.5	Min.at 2 GHz	NF (dB) Typ.			IP3 (dBm) Typ.	1GHz	1GHz						2GHz
ZX60-2534M-S+	0.5-2.5	5.0	31.7	39.4	39.4	38.4	35.9	34.0	18.0	15.9	3.1	30.0	27.8	1.3	1.5	25	153	185		
		2.8	28.9	35.2	34.9	34.6	32.8	31.0	13.8	14.0	3.1	25.4	24.6	1.3	1.8	23	141	185		

Maximum Ratings

Operating Temperature -40°C to 80°C case

Storage Temperature -55°C to 100°C

DC Voltage 7V

Input Power (no damage) -15dBm

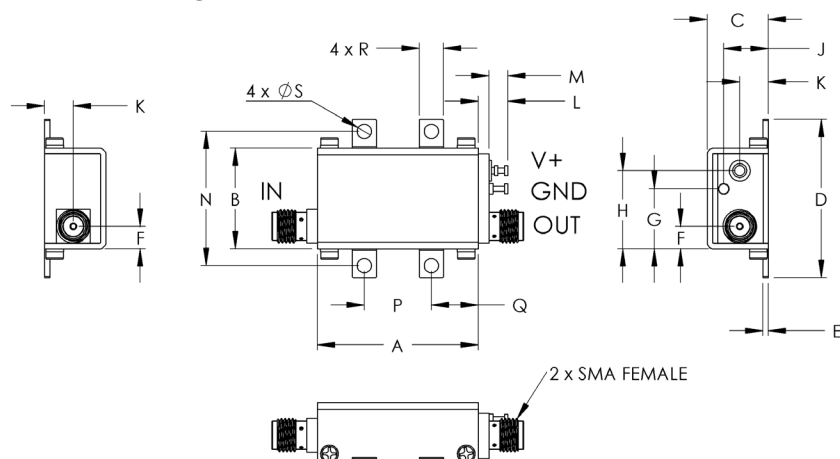
Power 1W

Permanent damage may occur if any of these limits are exceeded.



NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note [AN-40-10](#).

Outline Drawing



Outline Dimensions (inch)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	wt.
1.20	.75	.46	1.18	.04	.17	.45	.59	.33	.21	.22	.14	1.00	.50	.35	.18	.106	grams
30.48	19.05	11.68	29.97	1.02	4.32	11.43	14.99	8.38	5.33	5.59	3.56	25.40	12.70	8.89	4.57	2.69	35.0

Notes

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Typical Performance Data at 25°C

ZX60-2534M-S+

V+ = 5.0V

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR IN (:1)	VSWR OUT (:1)	POWER OUT @1dB COMPRESSION (dBm)	IP3 (dBm)	NF (dB)
500	31.31	42.97	2.28	3.11	17.54	30.41	3.52
560	34.33	39.91	2.05	2.65	18.41	31.09	3.42
680	36.96	35.75	1.77	2.01	19.15	31.74	3.23
800	38.13	32.69	1.60	1.65	19.06	31.72	3.18
860	38.60	31.26	1.52	1.53	18.86	31.54	3.11
1000	39.31	27.91	1.37	1.36	18.24	30.85	3.07
1100	39.67	25.59	1.27	1.29	17.80	30.26	3.05
1160	39.73	24.30	1.21	1.26	17.57	29.90	3.02
1280	39.70	22.14	1.13	1.20	17.21	29.22	2.99
1400	39.49	20.75	1.09	1.16	16.98	28.66	2.94
1460	39.47	20.37	1.09	1.15	16.90	28.42	2.95
1500	39.24	20.23	1.09	1.14	16.86	28.29	2.94
1580	39.15	20.19	1.11	1.13	16.79	28.07	2.95
1700	38.85	20.54	1.16	1.13	16.69	27.86	3.00
1760	38.53	20.78	1.18	1.14	16.64	27.81	2.94
1880	38.32	21.07	1.21	1.19	16.50	27.76	2.97
2000	38.23	20.75	1.19	1.27	16.30	27.79	3.03
2060	38.30	20.28	1.16	1.33	16.19	27.81	3.04
2360	36.64	17.33	1.06	1.60	15.66	27.89	3.14
2500	35.29	21.18	1.45	1.64	15.58	27.86	3.18

V+ = 2.8V

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR IN (:1)	VSWR OUT (:1)	POWER OUT @1dB COMPRESSION (dBm)	IP3 (dBm)	NF (dB)
500	28.16	48.01	2.42	3.31	13.61	24.20	3.59
560	30.73	44.40	2.19	2.83	14.33	24.90	3.49
680	32.94	39.00	1.89	2.20	15.12	25.75	3.31
800	33.88	35.01	1.71	1.87	15.36	26.04	3.21
860	34.47	33.31	1.63	1.78	15.36	26.05	3.15
1000	34.64	29.84	1.46	1.66	15.22	25.84	3.10
1100	34.89	27.74	1.35	1.61	15.09	25.58	3.07
1160	34.78	26.66	1.28	1.59	15.01	25.41	3.05
1280	34.70	24.91	1.17	1.54	14.88	25.07	3.02
1400	34.52	23.78	1.08	1.49	14.79	24.79	2.95
1460	34.81	23.44	1.06	1.45	14.75	24.68	2.99
1500	34.41	23.29	1.05	1.43	14.73	24.62	2.99
1580	34.60	23.13	1.04	1.39	14.68	24.52	3.00
1700	34.47	23.13	1.05	1.35	14.60	24.45	2.97
1760	34.12	23.15	1.07	1.33	14.55	24.44	3.01
1880	34.21	23.06	1.10	1.34	14.43	24.46	3.01
2000	34.38	22.57	1.13	1.41	14.27	24.51	3.05
2060	34.39	22.14	1.13	1.46	14.19	24.53	3.07
2360	33.48	20.15	1.15	1.88	13.85	24.54	3.18
2500	32.29	23.09	1.40	2.07	13.83	24.44	3.25

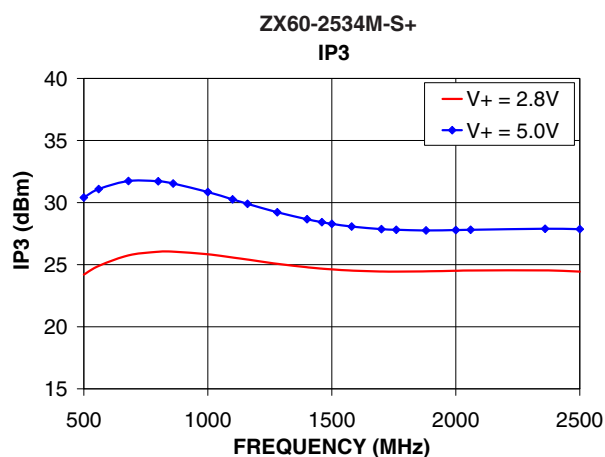
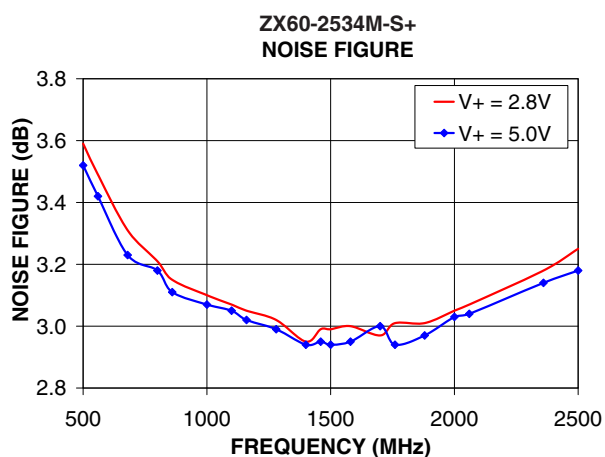
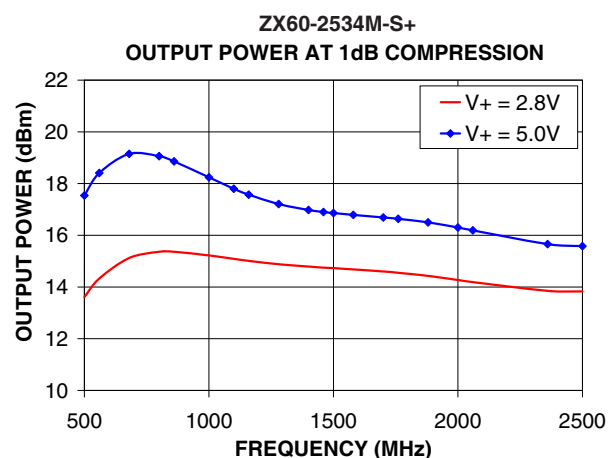
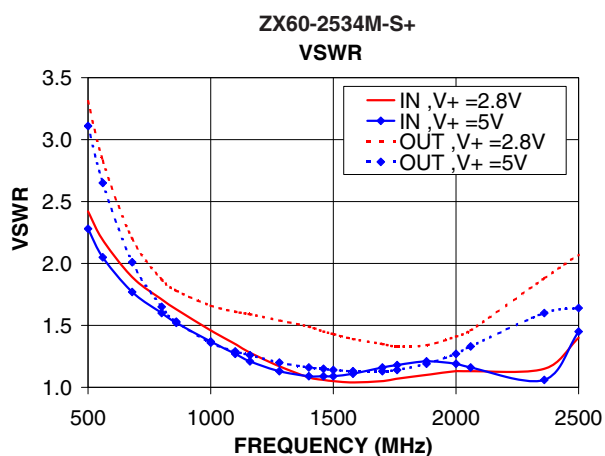
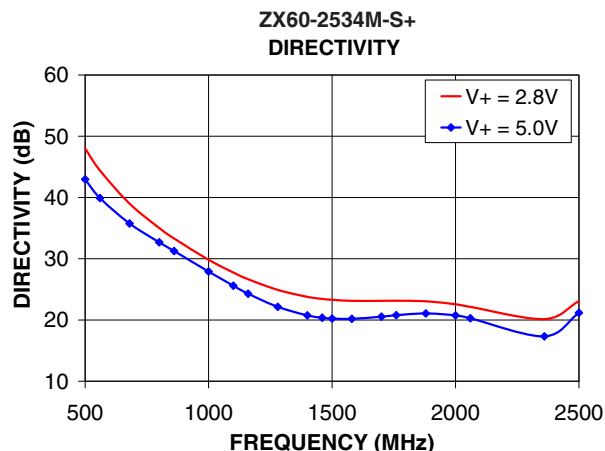
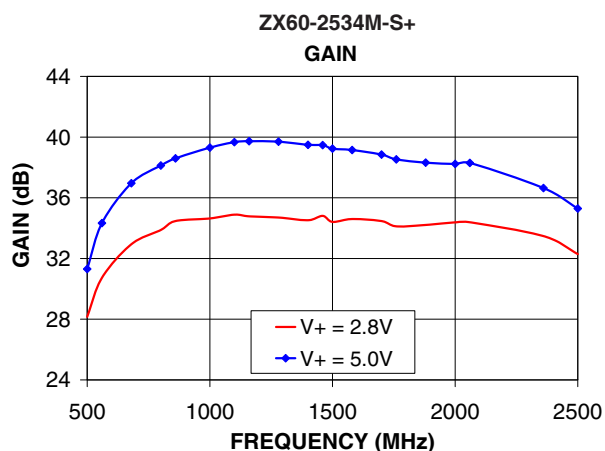
Notes

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Typical Performance Curves at 25 °C

ZX60-2534M-S+



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Amplifier

ZX60-2534M-S+

Typical Performance Data

FREQUENCY (MHz)	GAIN (dB)		DIRECTIVITY (dB)		VSWR IN (:1)		VSWR OUT (:1)		Output IP3 (dBm)		NOISE FIGURE (dB)		Pout at 1dB Comp. (dBm)	
	2.8V	5V	2.8V	5V	2.8V	5V	2.8V	5V	2.8V	5V	2.8V	5V	2.8V	5V
500	28.16	31.31	48.01	42.97	2.42	2.28	3.31	3.11	24.20	30.41	3.59	3.52	13.61	17.54
560	30.73	34.33	44.40	39.91	2.19	2.05	2.83	2.65	24.90	31.09	3.49	3.42	14.33	18.41
680	32.94	36.96	39.00	35.75	1.89	1.77	2.20	2.01	25.75	31.74	3.31	3.23	15.12	19.15
800	33.88	38.13	35.01	32.69	1.71	1.60	1.87	1.65	26.04	31.72	3.21	3.18	15.36	19.06
860	34.47	38.60	33.31	31.26	1.63	1.52	1.78	1.53	26.05	31.54	3.15	3.11	15.36	18.86
1000	34.64	39.31	29.84	27.91	1.46	1.37	1.66	1.36	25.84	30.85	3.10	3.07	15.22	18.24
1100	34.89	39.67	27.74	25.59	1.35	1.27	1.61	1.29	25.58	30.26	3.07	3.05	15.09	17.80
1160	34.78	39.73	26.66	24.30	1.28	1.21	1.59	1.26	25.41	29.90	3.05	3.02	15.01	17.57
1280	34.70	39.70	24.91	22.14	1.17	1.13	1.54	1.20	25.07	29.22	3.02	2.99	14.88	17.21
1400	34.52	39.49	23.78	20.75	1.08	1.09	1.49	1.16	24.79	28.66	2.95	2.94	14.79	16.98
1460	34.81	39.47	23.44	20.37	1.06	1.09	1.45	1.15	24.68	28.42	2.99	2.95	14.75	16.90
1500	34.41	39.24	23.29	20.23	1.05	1.09	1.43	1.14	24.62	28.29	2.99	2.94	14.73	16.86
1580	34.60	39.15	23.13	20.19	1.04	1.11	1.39	1.13	24.52	28.07	3.00	2.95	14.68	16.79
1700	34.47	38.85	23.13	20.54	1.05	1.16	1.35	1.13	24.45	27.86	2.97	3.00	14.60	16.69
1760	34.12	38.53	23.15	20.78	1.07	1.18	1.33	1.14	24.44	27.81	3.01	2.94	14.55	16.64
1880	34.21	38.32	23.06	21.07	1.10	1.21	1.34	1.19	24.46	27.76	3.01	2.97	14.43	16.50
2000	34.38	38.23	22.57	20.75	1.13	1.19	1.41	1.27	24.51	27.79	3.05	3.03	14.27	16.30
2060	34.39	38.30	22.14	20.28	1.13	1.16	1.46	1.33	24.53	27.81	3.07	3.04	14.19	16.19
2360	33.48	36.64	20.15	17.33	1.15	1.06	1.88	1.60	24.54	27.89	3.18	3.14	13.85	15.66
2500	32.29	35.29	23.09	21.18	1.40	1.45	2.07	1.64	24.44	27.86	3.25	3.18	13.83	15.58



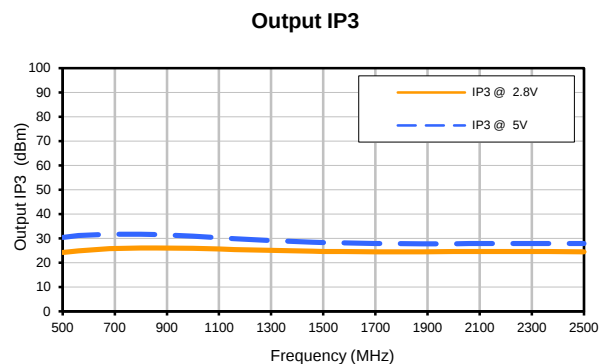
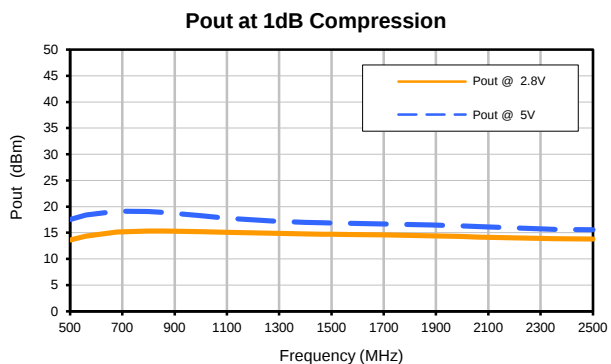
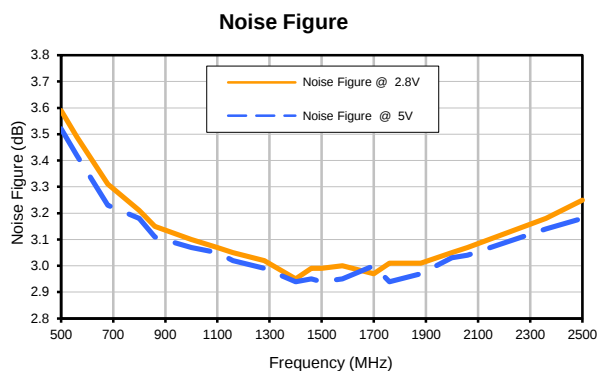
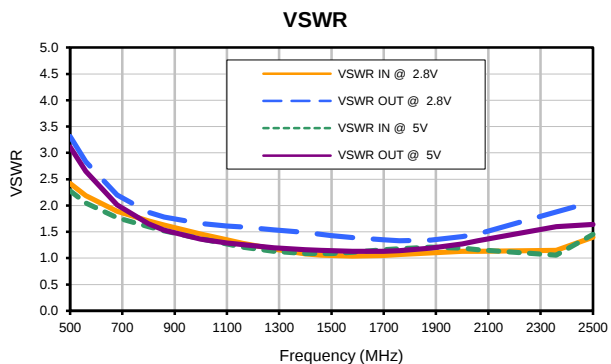
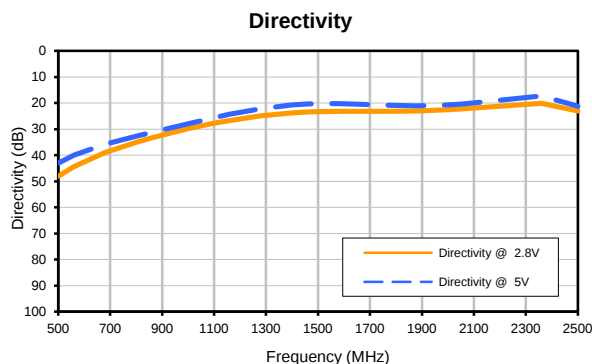
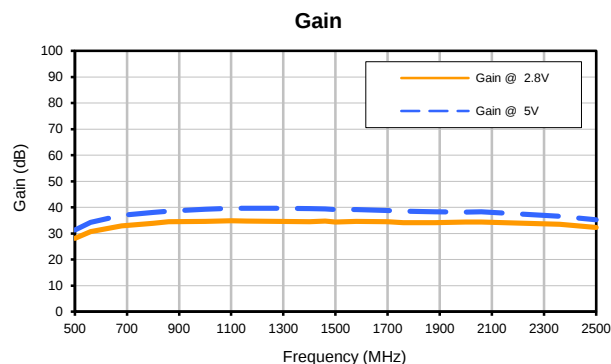
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For detailed performance specs
& shopping online see web site

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Typical Performance Curves



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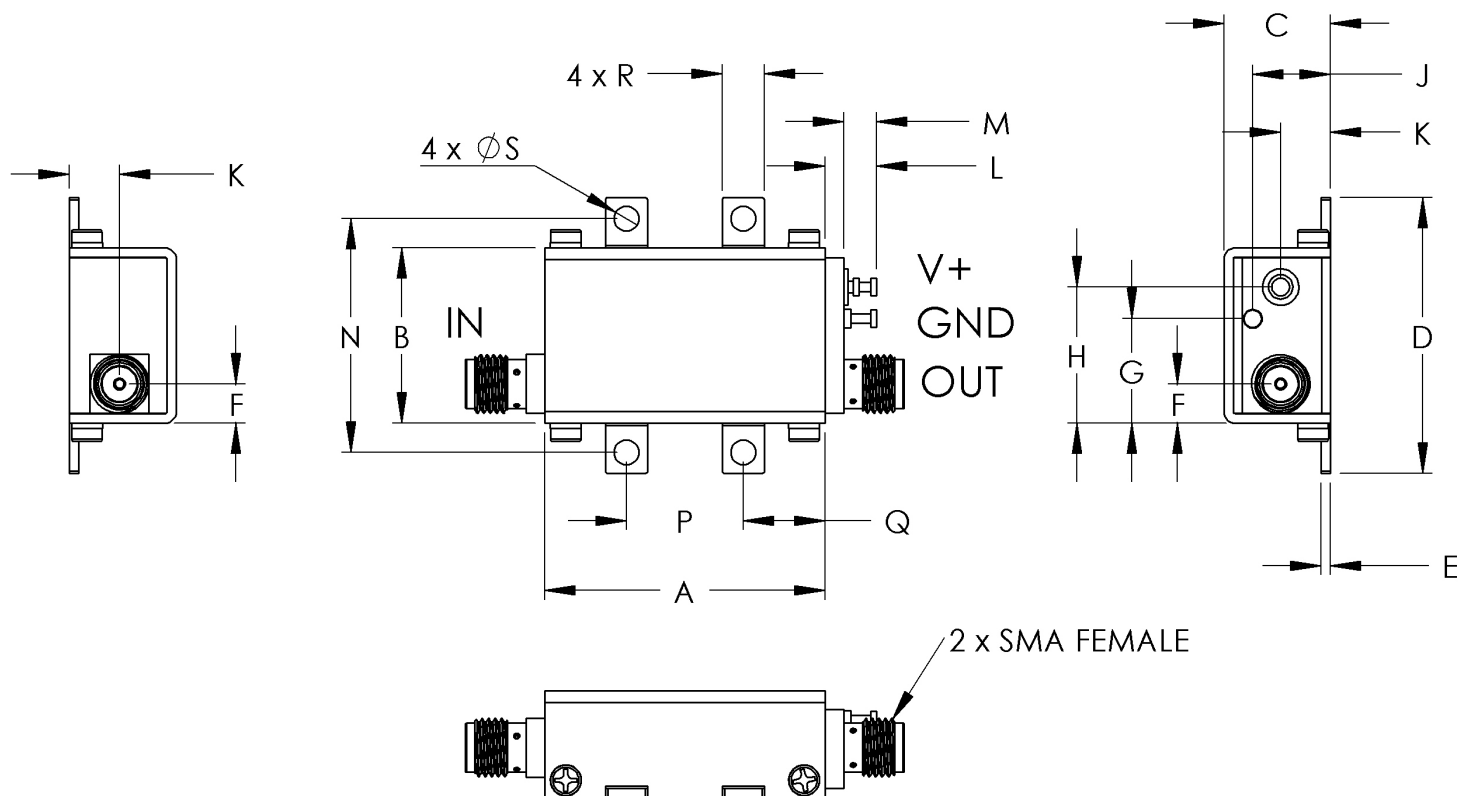
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Case Style

GA

Outline Dimensions

GA955



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N
GA955	1.20 (30.48)	.75 (19.05)	.46 (11.61)	1.18 (29.97)	.04 (1.02)	.17 (4.27)	.45 (11.35)	.58 (14.81)	.33 (8.46)	.21 (5.44)	.22 (5.59)	.14 (3.56)	1.000 (25.4)

CASE #.	P	Q	R	S	WT GRAMS
GA955	.500 (12.70)	.35 (8.89)	.18 (4.57)	.106 (2.69)	35.0

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$
Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Note:

- Case material: Brass
- 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 80° C Case Temperature	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Stabilization Bake	(non-operating) 125°C, 24 hours	- - -
Burn-in at Elevated Temp.	(DC on) 160 hours at 85° C	MIL-STD-202, Method 108
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, except 100°C