Coaxial

Amplifier

ZX60-2531M-S+

50Ω 0.5 to 2.5 GHz

Features

- From 2.8V to 5V operation
- High directivity, 30 dB typ.
- Wide bandwidth, 0.5 to 2.5 GHz
- Low noise figure, 3.5 dB typ.
- Output power, up to 18.2 dBm typ.
- Protected by US patent 6,790,049

Applications

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

CASE STYLE: GA955

Connectors	Model
SMA	ZX60-2531M-S+

+RoHS Compliant

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

Electrical Specifications at T_{AMB} = 25°C

MODEL NO.	FREQ. (GHz) f_L- f_U	DC VOLTAGE @ Pin V+ (V)	GAIN over frequency in GHz Typ (dB) 0.5	1.0	1.5	2.0	2.5	Min.at 2 GHz	MAXIMUM POWER (dBm) Output (1 dB Comp.) Typ. f_L	f_U	DYNAMIC RANGE NF (dB) Typ. 1GHz	IP3 (dBm) Typ. 1GHz	2GHz	VSWR (:1) Typ. In	Out	ACTIVE DIRECTIVITY (dB) Isolation-Gain Typ.	DC OPERATING CURRENT @ Pin V+ (mA) Typ.	Max.
ZX60-2531M-**S+**	0.5-2.5	5.0*	30.3	38.0	37.4	35.5	32.8	31.0	18.2	16.1	3.5	28.4	26.1	1.3	1.6	30	102	130

*DC Voltage@Pin V+ can also be 2.8V

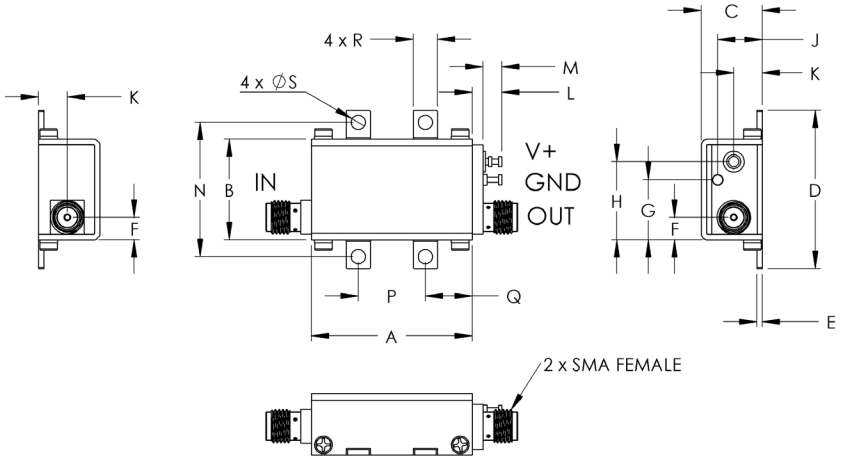
Maximum Ratings

Operating Temperature	-40°C to 80°C case
Storage Temperature	-55°C to 100°C
DC Voltage	7V
Input Power (no damage)	-15dBm
Power	700mW

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 / mm)

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

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-Circuits 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-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

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	30.42	58.99	2.10	3.13	18.53	28.97	3.69
650	34.57	41.15	2.04	2.14	19.76	30.57	3.53
700	35.40	40.35	1.99	1.91	19.70	30.65	3.56
750	36.08	36.46	1.92	1.76	19.60	30.59	3.54
800	36.64	33.60	1.83	1.63	19.49	30.42	3.56
1000	37.92	29.50	1.65	1.42	18.34	29.24	3.61
1210	38.18	26.55	1.68	1.33	17.67	28.10	3.66
1500	37.30	25.92	1.50	1.42	17.27	27.58	3.64
1680	36.69	25.65	1.46	1.20	16.94	27.66	3.59
1780	36.41	24.84	1.42	1.20	16.73	27.68	3.64
1880	36.15	25.00	1.36	1.28	16.54	27.64	3.70
2000	35.84	24.28	1.26	1.32	16.36	27.45	3.75
2050	35.75	23.86	1.21	1.34	16.21	27.33	3.81
2100	35.58	24.00	1.17	1.40	16.25	27.18	3.81
2150	35.29	23.98	1.12	1.40	16.10	27.02	3.84
2200	35.16	23.52	1.06	1.48	16.18	26.84	3.82
2300	34.55	23.52	1.10	1.55	16.16	26.53	3.87
2400	33.65	23.81	1.24	1.62	16.31	26.39	3.87
2450	32.62	24.84	1.29	1.68	16.30	26.44	3.91
2500	32.50	24.73	1.39	1.69	16.37	26.62	3.95

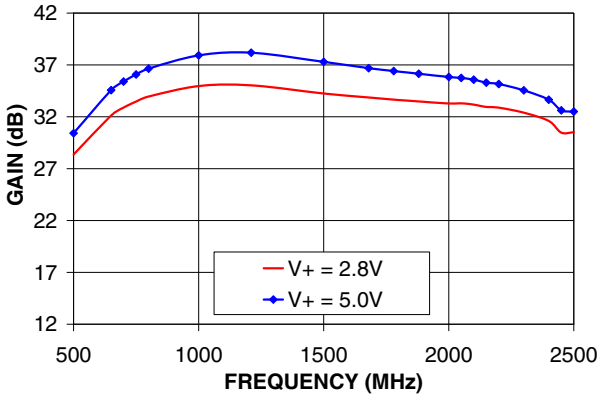
V+ = 2.8V

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR IN (:1)	VSWR OUT (:1)	POWER OUT @1dB COMPRESSION (dBm)	IP3 (dBm)	NF (dB)
500	28.36	62.18	2.17	3.38	14.21	24.17	3.76
650	32.12	43.07	2.03	2.34	15.23	25.65	3.62
700	32.89	39.27	1.97	2.14	15.31	25.80	3.59
750	33.47	37.14	1.91	1.99	15.33	25.84	3.64
800	33.95	35.03	1.83	1.90	15.33	25.79	3.65
1000	34.96	30.63	1.69	1.75	14.74	25.15	3.67
1210	35.03	27.96	1.69	1.73	14.64	24.41	3.71
1500	34.25	26.71	1.66	1.65	14.67	24.01	3.69
1680	33.86	27.07	1.50	1.59	14.39	24.02	3.69
1780	33.66	26.25	1.43	1.54	14.30	24.01	3.70
1880	33.48	26.31	1.37	1.53	14.07	23.96	3.76
2000	33.28	25.82	1.24	1.55	14.01	23.81	3.82
2050	33.30	25.39	1.21	1.58	13.81	23.71	3.88
2100	33.17	24.92	1.16	1.64	13.81	23.60	3.84
2150	32.95	25.70	1.10	1.66	13.79	23.48	3.92
2200	32.88	25.33	1.07	1.71	13.37	23.35	3.91
2300	32.40	25.04	1.11	1.82	13.82	23.11	3.88
2400	31.60	25.39	1.23	1.99	13.93	22.98	3.97
2450	30.47	26.29	1.30	2.10	14.05	23.00	3.92
2500	30.51	26.26	1.38	2.18	14.02	23.10	3.95

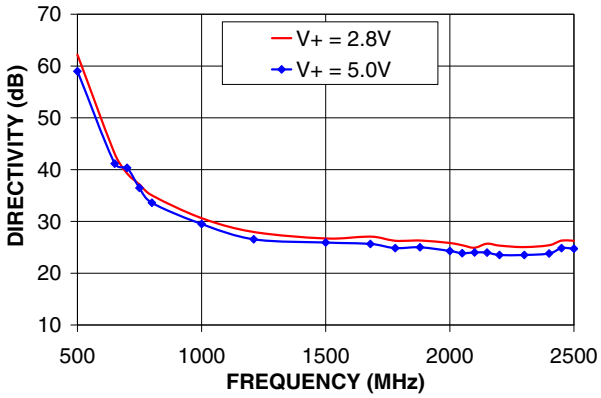
Typical Performance Curves at 25°C

ZX60-2531M-S+

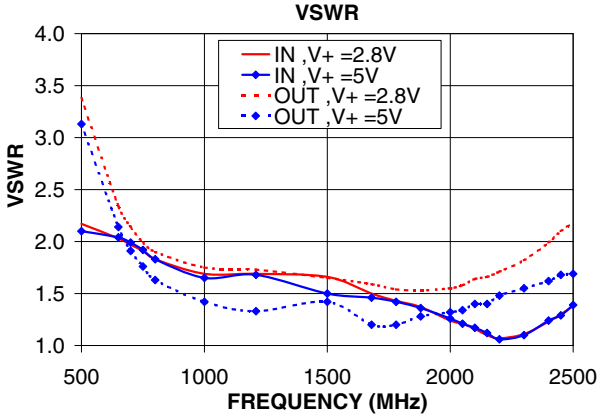
ZX60-2531M-S+
GAIN



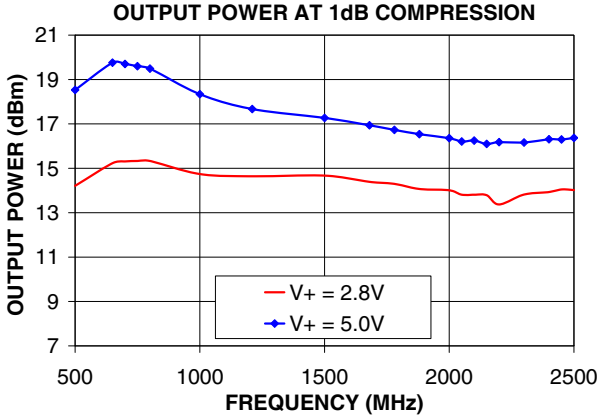
ZX60-2531M-S+
DIRECTIVITY



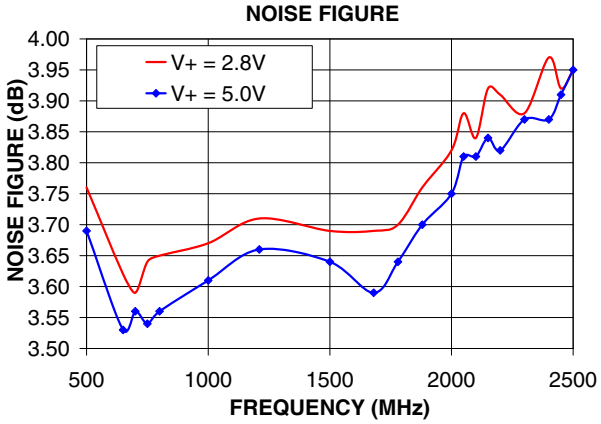
ZX60-2531M-S+
VSWR



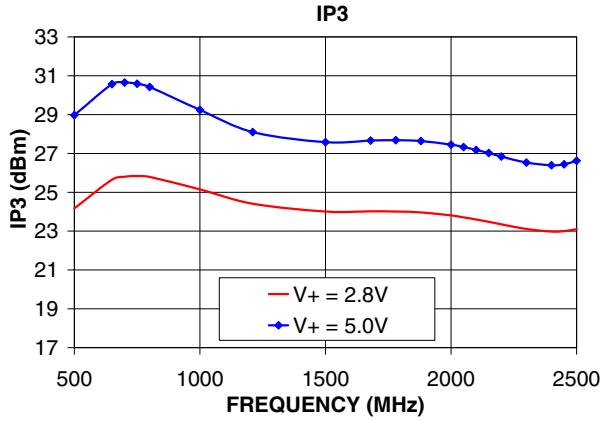
ZX60-2531M-S+
OUTPUT POWER AT 1dB COMPRESSION



ZX60-2531M-S+
NOISE FIGURE



ZX60-2531M-S+
IP3



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-Circuits 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-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Mini-Circuits®
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com