

High IP3

Low Noise Amplifier

ZRL-1200+

50Ω

650 to 1200 MHz

Features

- High IP3, +46 dBm typ.
- Low Noise figure, 2.0 dB typ.
- Broadband flat gain response
- Internal voltage regulated
- Over-voltage and transient protected

Applications

- Low noise, high dynamic range
- Analog/digital cellular
- PCS, GSM, TDMA, CDMA
- UHF television
- Driver amplifier



Generic photo used for illustration purposes only

Case Style: FJ893

Connectors Model

SMA ZRL-1200+

+RoHS Compliant

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

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Units
Frequency Range		650		1200	MHz
Noise Figure	650 - 1200 800 - 950	— —	1.8 1.8	3.0 3.0	dB
Gain	650 - 1200 800 - 950	24 25	29 30	— —	dB
Gain Flatness	650 - 1200 800 - 950	— —	±0.8 ±0.4	±1.2 ±0.8	dB
Output Power at 1dB compression	650 - 1200 800 - 950	23.5 23.5	25 25	— —	dBm
Output Power at 3dB compression	650 - 1200 800 - 950	— —	25.7 25.8	— —	dBm
Output third order intercept point ¹	650 - 1200 800 - 950	— —	+46 +46	— —	dBm
Input VSWR	650 - 1200 800 - 950	— —	1.25 1.20	— —	:1
Output VSWR	650 - 1200 800 - 950	— —	1.25 1.20	— —	:1
Active Directivity	650 - 1200 800 - 950	— —	15 15	— —	dB
DC Supply Voltage ²		—	12	—	V
Supply Current		—	540	575	mA

1. 1 MHz tone spacing.

2. Unit is internally voltage regulated for 6.5 to 17VDC input voltage range.

Maximum Ratings

Parameter	Ratings
Operating Temperature	-40°C to 80°C case -40°C to 60° ambient
Storage Temperature	-55°C to 100°C
DC Voltage	+17V
Input RF Power (no damage)	+10 dBm

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

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.

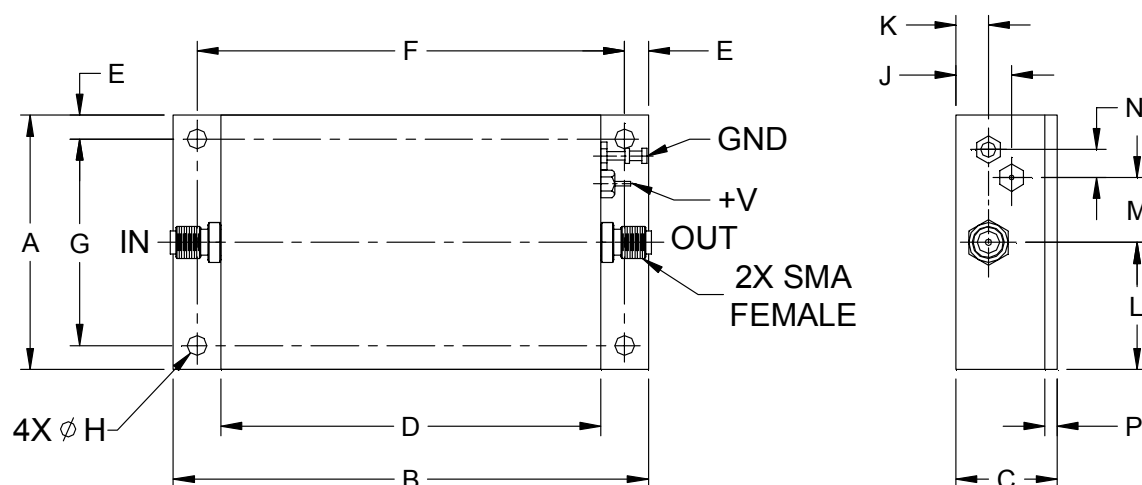
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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Outline Drawing



Outline Dimensions (inch/mm)

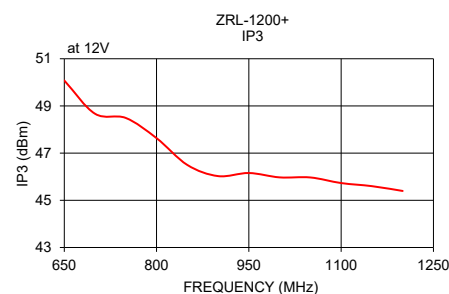
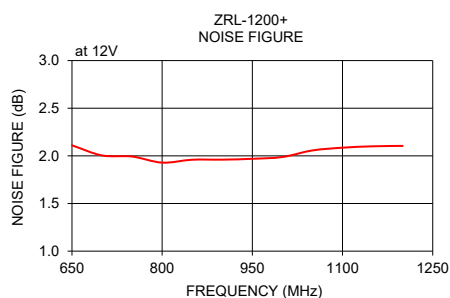
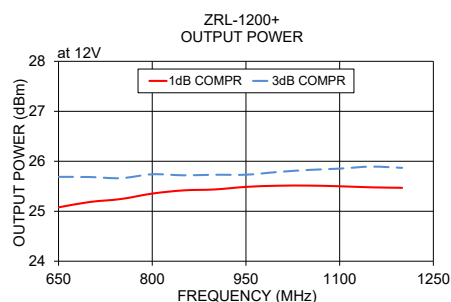
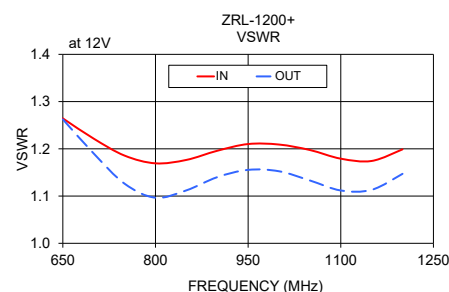
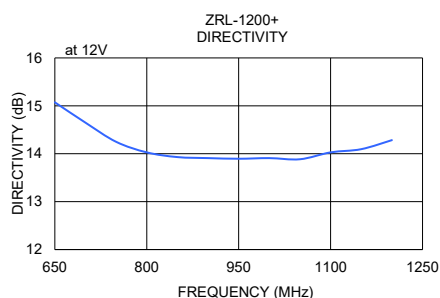
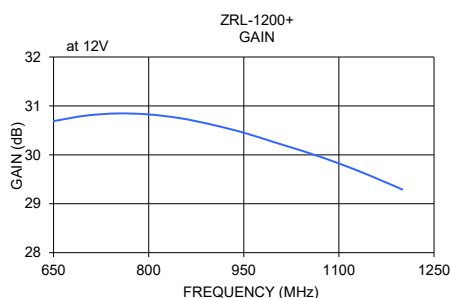
A	B	C	D	E	F	G	H	J	K	L	M	N	P	wt
2.00	3.75	0.80	3.00	0.19	3.374	1.624	0.156	0.44	0.26	1.00	0.51	0.22	0.10	grams
50.80	95.25	20.32	76.20	4.83	85.70	41.25	3.96	11.18	6.60	25.40	12.95	5.59	2.54	135

Notes

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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1dB COMPR. (dBm)	NOISE FIGURE (dB)	OUTPUT IP3 (dBm)
	12V	12V	IN	OUT	12V	12V	12V
650	30.69	15.07	1.26	1.26	25.08	2.11	50.08
700	30.80	14.65	1.22	1.19	25.19	2.00	48.67
750	30.85	14.25	1.19	1.13	25.24	1.99	48.49
800	30.83	14.03	1.17	1.10	25.35	1.93	47.63
850	30.75	13.93	1.18	1.11	25.42	1.96	46.50
900	30.62	13.91	1.20	1.14	25.44	1.96	46.03
950	30.45	13.90	1.21	1.16	25.49	1.97	46.16
1000	30.25	13.91	1.21	1.15	25.51	1.99	45.97
1050	30.05	13.88	1.20	1.13	25.51	2.06	45.97
1100	29.82	14.03	1.18	1.11	25.50	2.09	45.73
1150	29.57	14.09	1.17	1.11	25.48	2.10	45.60
1200	29.29	14.28	1.20	1.15	25.47	2.10	45.40



Notes

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Low Noise Amplifier

ZRL-1200+

Typical Performance Data

FREQUENCY (MHz)	GAIN (dB) 12V	DIRECTIVITY (dB) 12V	VSWR IN (:1) 12V	VSWR OUT (:1) 12V	NOISE FIGURE (dB) 12V	Pout at 1dB Comp. (dBm) 12V	Pout at 3dB Comp. (dBm) 12V	Output IP3 (dBm) 12V
650	30.69	15.07	1.26	1.26	2.11	25.08	25.69	50.08
700	30.80	14.65	1.22	1.19	2.00	25.19	25.68	48.67
750	30.85	14.25	1.19	1.13	1.99	25.24	25.66	48.49
800	30.83	14.03	1.17	1.10	1.93	25.35	25.74	47.63
850	30.75	13.93	1.18	1.11	1.96	25.42	25.72	46.50
900	30.62	13.91	1.20	1.14	1.96	25.44	25.73	46.03
950	30.45	13.90	1.21	1.16	1.97	25.49	25.73	46.16
1000	30.25	13.91	1.21	1.15	1.99	25.51	25.78	45.97
1050	30.05	13.88	1.20	1.13	2.06	25.51	25.83	45.97
1100	29.82	14.03	1.18	1.11	2.09	25.50	25.85	45.73
1150	29.57	14.09	1.17	1.11	2.10	25.48	25.89	45.60
1200	29.29	14.28	1.20	1.15	2.10	25.47	25.87	45.40

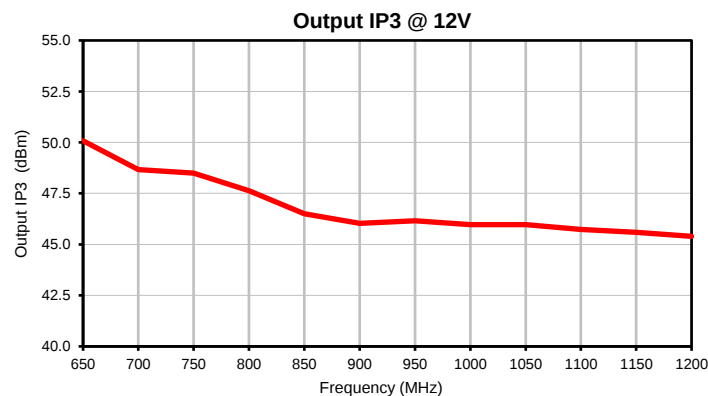
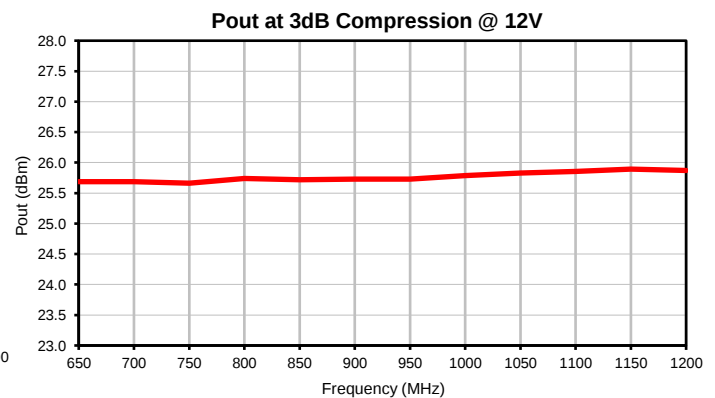
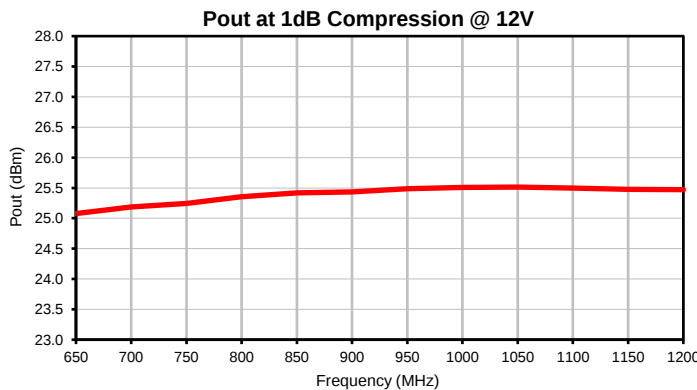
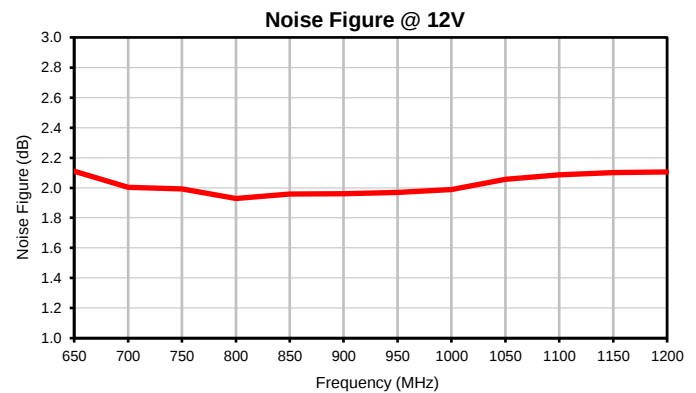
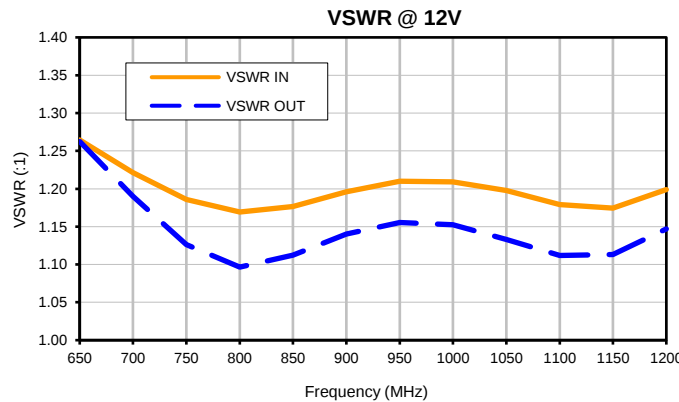
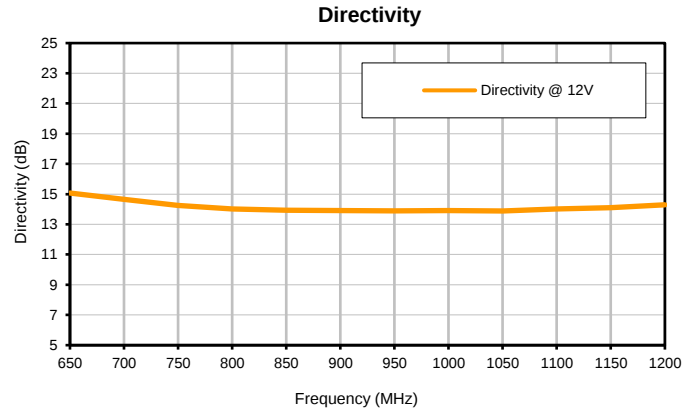
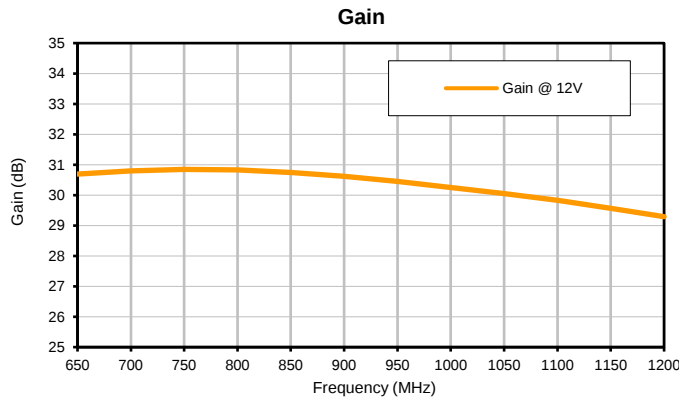


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 The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

IF/RF MICROWAVE COMPONENTS

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ZRL-1200+
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Typical Performance Curves

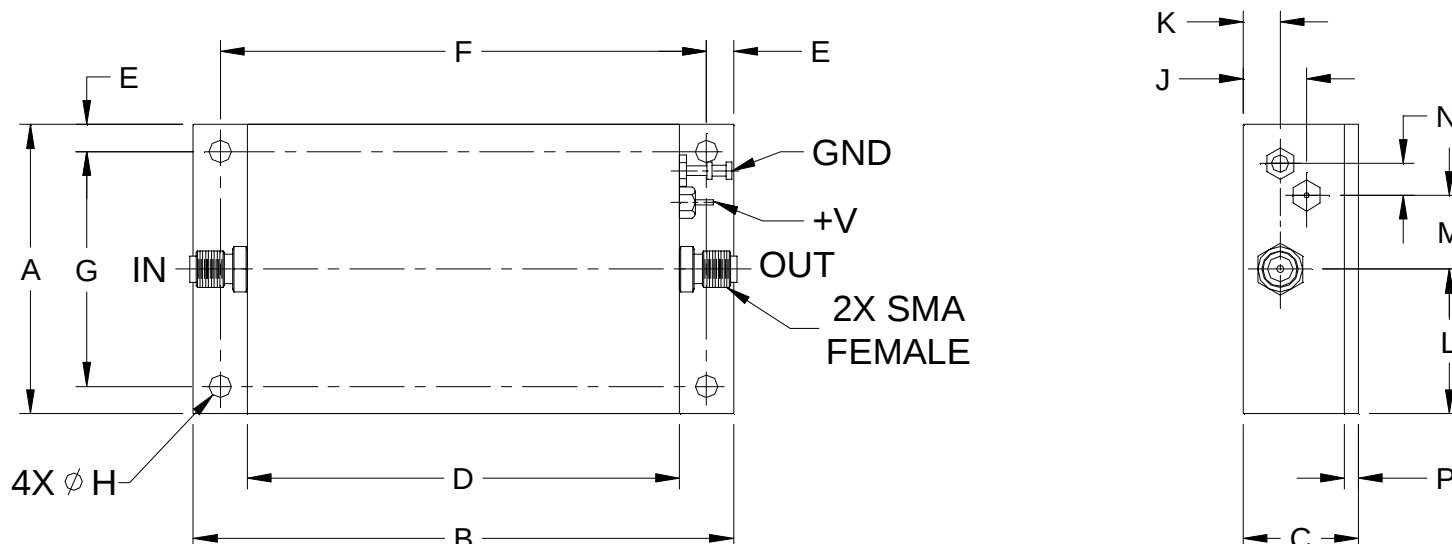


Case Style

FJ

Outline Dimensions

FJ893



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT. GRAMS
FJ893	2.00 (50.80)	3.75 (95.25)	.80 (20.32)	3.00 (76.20)	.19 (4.83)	3.374 (85.70)	1.624 (41.25)	.156 (3.96)	.44 (11.18)	.26 (6.60)	1.00 (25.40)	.51 (12.95)	.22 (5.59)	.10 (2.54)	135

Dimensions are in inches (mm). Tolerances: 2PL. +/- .03; 3PL. +/- .015

Notes:

1. Case material: Aluminum alloy.

2. Case finish:

For RoHS Case Styles:

Clear chemical conversion coating, non-chrome or trivalent chrome based.



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Mini-Circuits ISO 9001 & ISO 14001 Certified



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 60° C Ambient Environment	Individual Model Data Sheet
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