

Self-Cooled

High Power Amplifier

LZY-1+

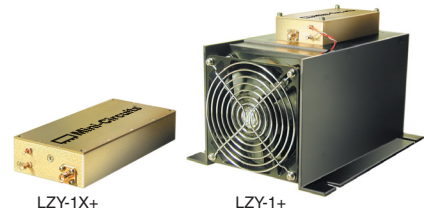
50Ω 50W 20 to 512 MHz

Features

- saturated power 50W typ.
- high power with low distortion, -32 dBc typ.
- wide bandwidth, usable 10 - 525 MHz
- high gain, 42 dB typ.
- unconditionally stable
- self protected against excessive drive, high case temp., reverse polarity and shorting/unshorting transients at dc input
- electronic shutoff by grounding the shut-off terminal, reduces output by 50 dB ungrounding the shutoff terminal restores full power within 40 ms
- cool operation with integral fan, 15° C typ. rise
- graceful degradation, +20 to +30V DC
- can withstand short and open circuit at output for 2 minutes while delivering 20 watts

Applications

- AM/FM
- multi-carrier amplification
- broadband swept signal
- feed forward
- linear pulse



LZY-1X+

LZY-1+

CASE STYLE: BT1312

Connectors	Model
SMA	LZY-1+
SMA	LZY-1X+

+RoHS Compliant

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

High Power Amplifier Electrical Specifications

MODEL NO.	FREQUENCY (MHz)		GAIN (dB)		MAXIMUM POWER (dBm)			DYNAMIC RANGE		VSWR (:1)		DC POWER	
	f _L	f _U	Min.	Flatness Max.	Output (1 dB Compr.) Min.	Typ.	Input (no damage)	NF ¹ (dB) Typ.	IP3 (dBm) Typ.	In	Out	Volt (V) Nom.	Current ² (A) Max.
LZY-1+	20	512	39	±1.5	+44	+47	+10	8.6	+54	2.0	†	+26	7.3
LZY-1X+*	20	512	39	±1.5	+44	+47	+10	8.6	+54	2.0	†	+26	7.3

* Heat sink and fan not included

1. 80-512 MHz, at 20 MHz 11.6 dB typ.

2. At 25W output including operation of fan.

† VSWR, 9.0:1 typ up to 450 MHz, all specifications for 50 ohm load.

Open load is not recommended, potentially can cause damage.

To order without heat sink and fan, add suffix-X to model number. Alternative heat sinking and heat removal must be provided by customer to ensure proper performance. See application note AN-60-004.

Maximum Ratings

Operating Temperature -10°C to 50°C

Storage Temperature -55°C to 100°C

DC Voltage +30V Max.

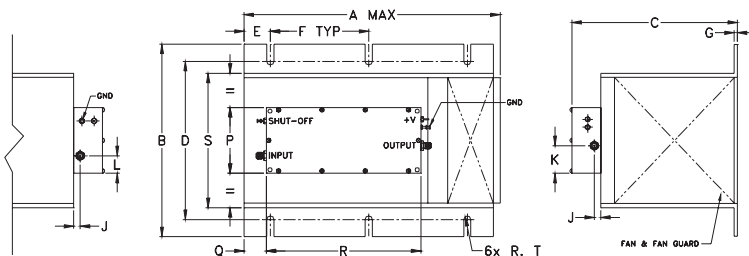
Permanent damage may occur if any of these limits are exceeded.

Not Recommended for New Designs

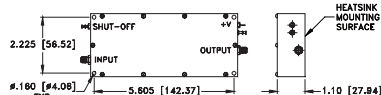
Recommended Replacement Parts:

ZHL-100W-52-S+
ZHL-100W-52X-S+

Outline Drawing



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt
9.85	7.3	6.3	6.0	1.0	3.75	.13	—	.25	1.05	.67	—	—	2.49	.9	5.88	5.1	.135	grams*
250.19	185.42	160.02	152.40	25.40	95.25	3.30	—	6.35	26.67	17.02	—	—	63.25	22.86	149.35	129.54	3.43	4055

*360 grams without heatsink

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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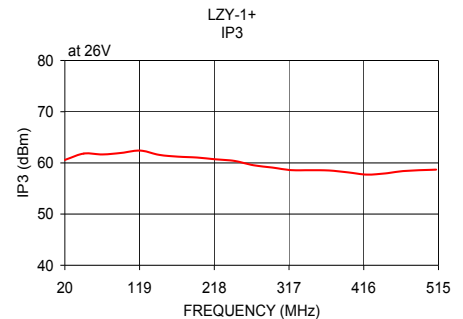
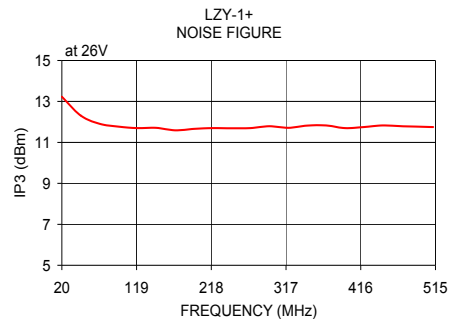
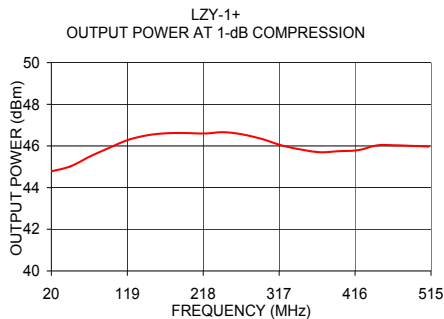
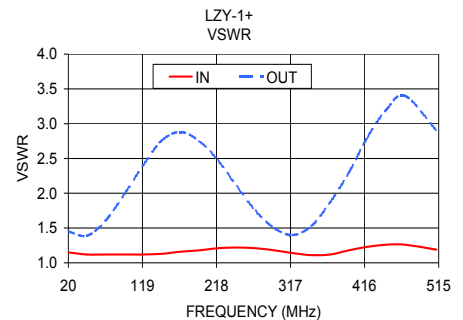
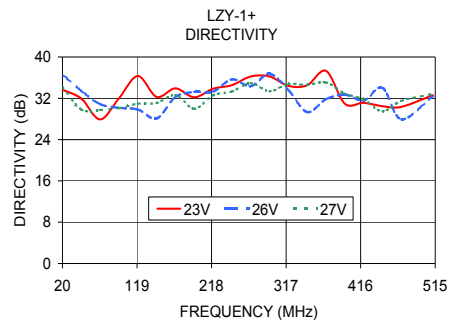
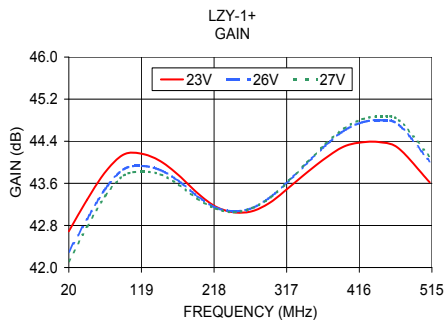
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NON-CATALOG

Typical Performance Data/Curves

LZY-1+

FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1)		POUT at 1 dB COMPR. (dBm)	NOISE FIGURE (dB)	IP3 (dBm)
	23V	26V	27V	23V	26V	27V	IN	OUT			
20.00	42.69	42.30	42.12	33.65	36.64	34.17	1.15	1.45	44.78	13.23	60.58
45.00	43.29	42.92	42.78	31.94	33.45	29.84	1.12	1.39	45.02	12.31	61.81
70.00	43.82	43.50	43.37	27.91	30.88	29.74	1.12	1.61	45.49	11.91	61.65
95.00	44.15	43.87	43.75	31.98	30.15	30.10	1.12	1.99	45.90	11.77	61.95
120.00	44.16	43.93	43.82	36.31	29.84	30.95	1.12	2.40	46.29	11.70	62.41
145.00	44.02	43.85	43.77	32.27	28.09	31.09	1.13	2.76	46.51	11.71	61.57
170.00	43.75	43.64	43.57	33.92	32.23	32.62	1.16	2.88	46.61	11.59	61.22
195.00	43.42	43.36	43.31	32.19	33.23	29.97	1.18	2.75	46.62	11.66	61.05
220.00	43.16	43.14	43.12	33.85	33.29	32.59	1.21	2.47	46.60	11.70	60.69
245.00	43.05	43.07	43.05	34.55	35.67	33.31	1.22	2.10	46.66	11.69	60.38
270.00	43.07	43.13	43.13	36.21	34.35	34.93	1.21	1.75	46.55	11.70	59.54
295.00	43.24	43.34	43.33	36.24	36.72	33.37	1.18	1.50	46.33	11.79	59.08
320.00	43.52	43.65	43.65	34.40	33.59	34.78	1.14	1.40	46.03	11.71	58.59
345.00	43.81	43.99	44.00	34.53	29.34	34.60	1.11	1.53	45.83	11.82	58.57
370.00	44.08	44.32	44.35	37.31	31.83	35.08	1.12	1.87	45.70	11.83	58.52
395.00	44.30	44.60	44.64	30.95	32.70	32.90	1.18	2.30	45.75	11.70	58.15
420.00	44.38	44.76	44.82	31.13	31.58	31.80	1.23	2.81	45.80	11.75	57.71
445.00	44.38	44.80	44.87	30.45	34.02	29.49	1.26	3.20	46.03	11.83	57.95
470.00	44.26	44.71	44.80	30.34	27.94	31.51	1.26	3.40	46.03	11.79	58.42
512.00	43.62	44.02	44.10	32.60	32.41	32.81	1.19	2.90	45.97	11.75	58.68



Notes

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High Power Amplifier

LZY-1+

Typical Performance Data

FREQ.	GAIN			DIRECTIVITY			VSWR (:1)		NOISE FIGURE	POUT @ 1 dB COMPRESSION	OUTPUT IP3
(MHz)	(dB)			(dB)			IN	OUT	(dB)	(dBm)	(dBm)
	23V	26V	27V	23V	26V	27V	26V	26V	26V	26V	26V
20.00	42.69	42.30	42.12	33.65	36.64	34.17	1.15	1.45	13.23	44.78	60.58
45.00	43.29	42.92	42.78	31.94	33.45	29.84	1.12	1.39	12.31	45.02	61.81
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IF/RF MICROWAVE COMPONENTS

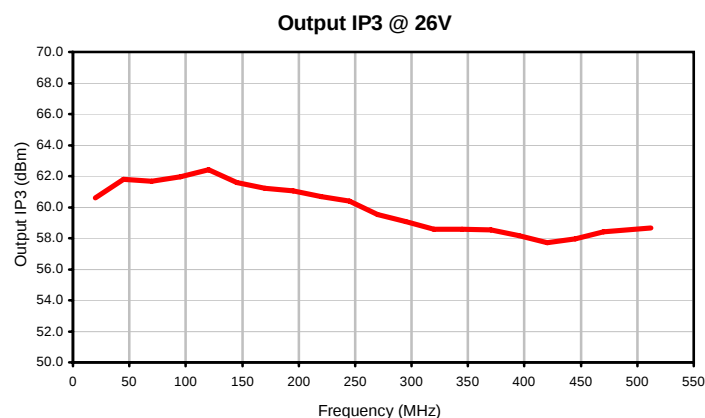
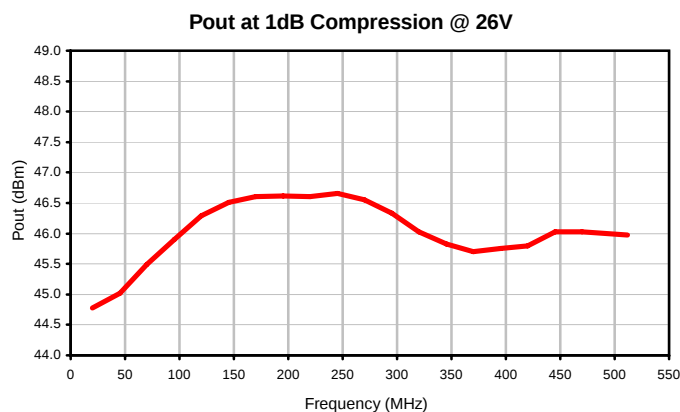
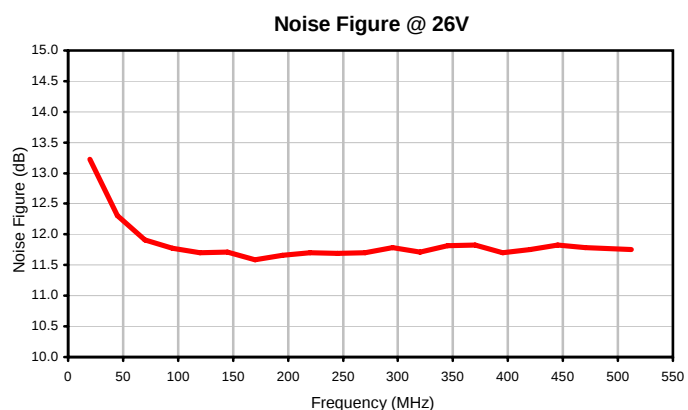
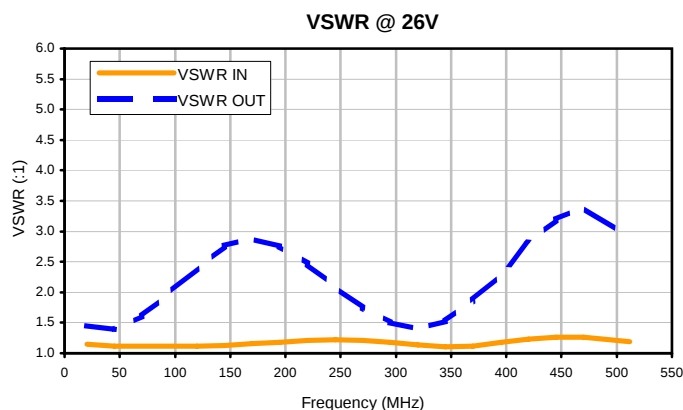
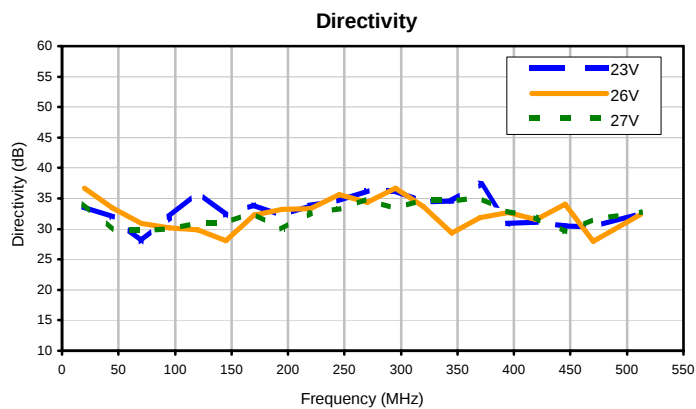
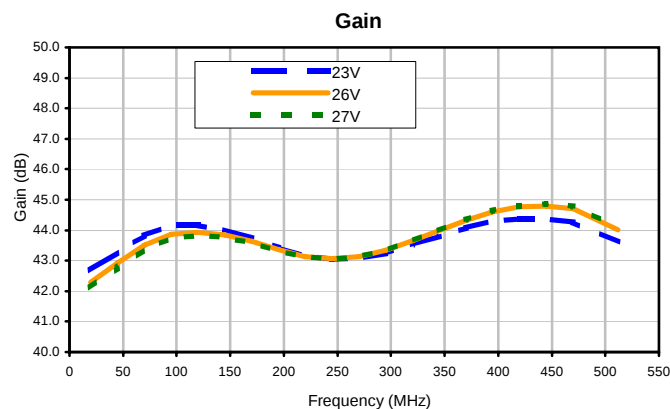


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High Power Amplifier

LZY-1+

Typical Performance Curves



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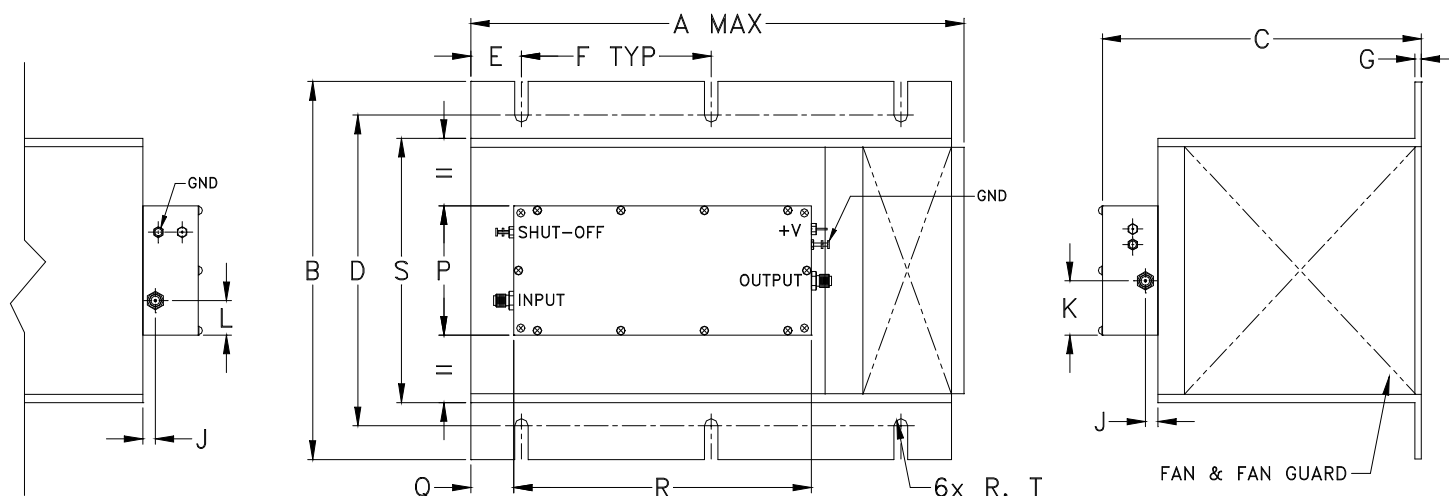
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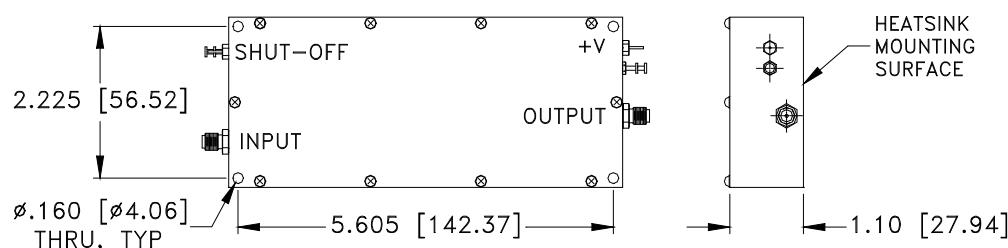
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Outline Dimensions



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK.



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
BT1312	9.85 (250.19)	7.3 (185.42)	6.3 (160.02)	6.00 (152.40)	1.00 (25.40)	3.75 (95.25)	.13 (3.30)	- -	.25 (6.35)	1.05 (26.67)	.67 (17.02)	- -	- -

CASE#	P	Q	R	S	T	WT, GRAM	WT WITHOUT HEATSINK, GRAM
BT1312	2.49 (63.25)	.9 (22.86)	5.88 (149.35)	5.1 (129.54)	.135 (3.43)	4055	360

Dimensions are in inches (mm). Tolerances: 1 Pl. $\pm .1$; 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

- Case material: Aluminum alloy.
- Finish:
For RoHS Case Styles: Clear Chemical conversion coating, non-chrome or trivalent chrome based.
- Heatsink finish: Black anodize.
- Refer to the individual model data sheet for the type of connectors available.
- Recommended screws for mounting model without heat sink on 3/32" thick sheet: #6-32, 1.50" Length.



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RF/IF MICROWAVE COMPONENTS



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	-10° to 50° C Ambient Environment	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