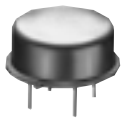


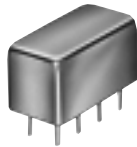
# LOW-NOISE AMPLIFIERS

50Ω

BROADBAND, LINEAR 0.1 to 2700 MHz



AMP



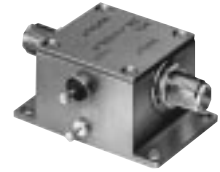
MAN



ZFL



TO



ZEL

up to +16 dBm output

MODEL NO.	FREQ. (MHz) $f_l$ - $f_u$	NF (dB) Typ.	GAIN (dB)			MAXIMUM POWER (dBm)		INTERCEPT POINT (dBm) IP3 Typ.	VSWR Typ.		DC POWER		CASE STYLE Note B	CONNECTION	PRICE \$ Qty. (1-9)
			Flatness Min.	m	Max.	Output (1 dB Comp.)	Input (no damage)		In	Out	Volt (V)	Current (mA)			
AMP-15	5-1000	2.8	13	±0.6	±1.2	+8	+13	+22	2:1	2:1	15	29	PP120	cd	49.95
AMP-75	5-500	2.4	19	±0.4	±1.0	+12	+13	+28	2:1	2:1	15	29	PP120	cd	49.95
AMP-76	5-500	3.1	26	±0.7	±1.0	+13.5	+6	+28	2:1	2:1	15	68	PP120	cd	78.95
AMP-77	5-500	3.3	15	±0.4	±1.0	+16	+13	+32	2:1	2:1	15	56	PP120	cd	55.95
MAN-1LN**	0.5-500	3.0	28	±0.5	±1.4	+7	+15	+18	1.8:1	1.8:1	12	60	A05	cc	19.95
MAN-1HLN	10-500	3.7	10	±0.5	±0.8	+15	+15	+30	1.8:1	1.8:1	12	70	A06	cc	19.95
ZFL-500HLN	10-500	3.8	19	—	±0.4	+16	+15	+30	2:1	2:1	15	110	Y460	—	99.95
ZFL-500LN*	0.1-500	2.9	24	—	±0.5	+5	+5	+14	1.5:1	1.6:1	15	60	Y460	—	79.95
ZFL-1000LN	0.1-1000	2.9	20	—	±0.5	+3	+5	+14	1.5:1	2:1	15	60	Y460	—	89.95

m = mid range [2  $f_l$  to  $f_u/2$ ]

## features

- very low noise
- ideal for printed-circuit designs (AMP, MAN & TO series)
- high dynamic range (ZHL- HLN & ZQL series)
- smooth response over entire band, no external resonances
- low impedance, less susceptible to EMI
- easy to use, 50 ohm input/output
- all models are cascadable

## NOTES:

- \* VSWR 1.6:1 maximum from 0.1 to 0.2 MHz. Also available with BNC connectors.
  - \*\* Below 5 MHz, 1 dB compression point decreases to 6.5 dBm.
  - ▲ Available only with SMA connectors
  - B. Connector types and case mounted options, case finishes are given in section 0, see "Case styles & outline drawings".
  - C. Prices and specifications subject to change without notice.
  - D. For Quality Control Procedures see Table of Contents, Section 0, "Mini-Circuits Guarantees Quality" article. For Environmental Specifications see Amplifier Selection Guide.
1. Absolute maximum power, voltage and current rating:  
1a. AMP models, 17V DC. 1b. MAN models, 12.5V DC. 1c. ZQL models, 17V DC.
  2. Open load is not recommended, potentially can cause damage. With no load, derate max input power by 20 dB.
  3. ZEL and TO models, NF specified at room temperature, increases to 2 dB typical at +85 deg.C.
  4. ZHL models, NF specified at room temperature, increases to 2.3 dB maximum at +65 deg.C.

## NSN GUIDE

MCL NO.	NSN
AMP-15	5895-01-350-9550
AMP-75	5895-01-350-9551
AMP-77	5895-01-350-9549
ZFL-1000LN	5996-01-412-3031



Distribution Centers NORTH AMERICA 800-654-7949 • 417 335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

INTERNET <http://www.minicircuits.com>

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## Plug-In & Coaxial



ZQL



ZHL-case S32



ZHL-case NN92

up to +27 dBm output

MODEL NO.	FREQ. (MHz)	NF (dB)	GAIN (dB)		MAXIMUM POWER (dBm)		INTERCEPT POINT (dBm)	VSWR Max.		DC POWER		CASE STYLE	CONNECTION	PRICE \$
	$f_c$ - $f_u$	Max.	Min.	Flatness Max.	Output (1 dB Comp.) Typ.	Input (no damage)	IP3 Typ.	In	Out	Volt (V)	Current (mA)	Note B		Qty. (1-9)
TO-1217LN	1200-1700	1.6	20	±1.0	+10	+13	+25	2.5:1	2.5:1	15	70	QQ96	ce	199.00
TO-1724LN	1700-2400	1.6	20	±1.0	+10	+13	+22	2.5:1	2.5:1	15	70	QQ96	ce	199.00
▲ ZEL-0812LN	800-1200	1.5	20	±1.0	+8	+13	+18	2.5:1	2.5:1	15	70	EEE132	—	274.95
▲ ZEL-1217LN	1200-1700	1.5	20	±1.0	+10	+13	+25	2.5:1	2.5:1	15	70	EEE132	—	274.95
▲ ZEL-1724LN	1700-2400	1.5	20	±1.0	+10	+13	+22	2.5:1	2.5:1	15	70	EEE132	—	274.95
▲ ZHL-0812MLN	800-1200	1.6	28	±1.0	+20	0	+33	2.5:1	2.5:1	15	300	S32	—	295.00
▲ ZHL-1217MLN	1200-1700	1.5	30	±1.0	+20	0	+34	2.5:1	2.5:1	15	300	S32	—	295.00
▲ ZHL-1724MLN	1700-2400	1.5	28	±1.0	+20	0	+32	2.5:1	2.5:1	15	300	S32	—	295.00
▲ ZHL-0812HLN	800-1200	1.5	30	±1.0	+26	+10	+36	2.4:1	2.4:1	15	725	NN92	—	399.50
▲ ZHL-1217HLN	1200-1700	1.5	30	±1.0	+26	+10	+36	2.4:1	2.4:1	15	725	NN92	—	399.50
▲ ZHL-1724HLN	1700-2400	1.5	30	±1.0	+26	+10	+36	2.4:1	2.4:1	15	725	NN92	—	399.50
Typ.														
ZQL-900LNW	800-900	1.6	13	±1.6	+21	+10	+35	1.2:1	1.1:1	15	160	CW686	—	229.00
ZQL-900LN	824-849	1.3	15	±0.5	+21	+10	+35	1.2:1	1.1:1	15	160	CW686	—	229.00
ZQL-1900LNW	1700-2000	1.6	14	±1.8	+18.5	+10	+37	1.15:1	1.25:1	15	160	CW686	—	249.00
ZQL-1900LN	1850-1910	1.5	15	±0.5	+19	+10	+37	1.15:1	1.25:1	15	160	CW686	—	249.00
ZQL-900MLNW	800-900	1.7	22	±2.2	+23	+3	+41	1.3:1	1.4:1	15	230	CW686	—	249.00
ZQL-900MLN	824-849	1.5	25.5	±0.5	+24.5	+3	+41	1.3:1	1.4:1	15	230	CW686	—	249.00
ZQL-1900MLNW	1800-2000	1.6	23	±2.0	+25	+3	+41	1.4:1	1.25:1	15	310	CW686	—	265.00
ZQL-1900MLN	1850-1910	1.5	25	±0.7	+26	+3	+41	1.25:1	1.2:1	15	310	CW686	—	265.00
NEW ZQL-2700MLNW	2200-2400	1.3	25	±1.0	+25	+3	+38	1.25:1	1.15:1	15	325	CW686	—	281.95
	2200-2700	1.5	25	±2.3	+25	+3	+38	1.25:1	1.15:1	15	325	CW686	—	281.95

### pin connections

PORT	cc	cd	ce
RF IN	1	2	5
RF OUT	8	4	11
DC	5	1	2
CASE GND	2,3,4,6	3	1,3,4,6,7,8,9,10,12
NOT USED	7	—	—



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