

# LOW-NOISE AMPLIFIERS

50Ω

BROADBAND, LINEAR 0.1 to 2700 MHz



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-11-2	5-1000	3.0	14	±1.0	±1.0	-3.5	+13	+13	2:1	2:1	15	12	PP120	cd	44.95
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 (ZFL- 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.
- Absolute maximum power, voltage and current rating:  
1a. AMP models, 17V DC. 1b. MAN models, 12.5V DC. 1c. ZQL models, 17V DC.
  - Open load is not recommended, potentially can cause damage. With no load, derate max input power by 20 dB.
  - ZEL and TO models, NF specified at room temperature, increases to 2 dB typical at +85 deg.C.
  - 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>

ISO 9001 CERTIFIED

## Plug-In & Coaxial



ZQL



ZHL-case S32



ZHL-case NN92

up to +27 dBm output

MODEL NO.	FREQ. (MHz) $f_c-f_u$	NF (dB) Max.	GAIN (dB)		MAXIMUM POWER (dBm)		INTERCEPT POINT (dBm) IP3 Typ.	VSWR Max.		DC POWER		CASE STYLE Note B	CONNECTION	PRICE \$ Qty. (1-9)
			Min.	Flatness Max.	Output (1 dB Comp.) Typ.	Input (no damage)		In	Out	Volt (V)	Current (mA)			
TO-0812LN	800-1200	1.6	20	±1.0	+8	+13	+18	2.5:1	2.5:1	15	70	QQ96	ce	199.00
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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