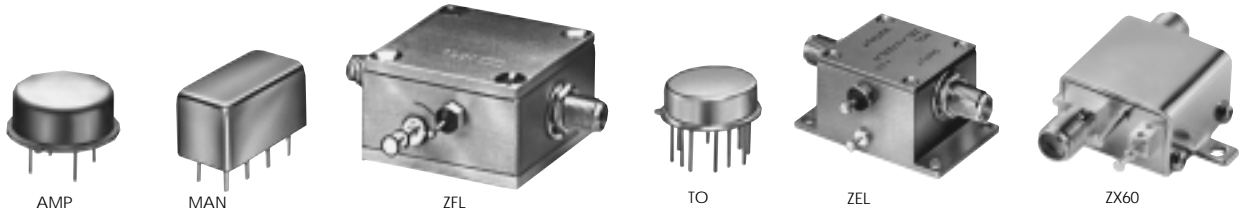


LOW-NOISE AMPLIFIERS

50Ω

BROADBAND, LINEAR 0.1 to 3000 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	NSN NOI-COMPZOC	PRICE \$ Qty. (1-9)
			Min.	m	Max. Total range	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	31	PP120	cd	49.95
AMP-76	5-500	3.1	26	±0.7	±1.0	+13.5	+6	+28	2:1	2:1	15	71	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
NEW ZX60-3011	400-1000	1.4	12	—	±.70	+19.5	+15	+31	1.7:1	1.6:1	12	120	GC957	—	139.95
	1000-1700	1.5	11	—	±1.0	+19.5	+15	+31	1.7:1	1.6:1	12	120			
	1700-2400	1.7	9	—	±1.0	+18.5	+15	+31	1.7:1	1.6:1	12	120			
	2400-3000	1.8	7.5	—	±.70	+18.0	+15	+31	1.7:1	1.6:1	12	120			

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 & ZX60 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:
 - AMP models, 17V DC.
 - MAN models, 12.5V DC.
 - ZQL models, 17V DC.
 - ZX60, 15V DC
 - ZQLSC, 36V 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. (TO-0812LN increases to 1.6 dB max.)
 - ZHL models, NF specified at room temperature, increases to 2.3 dB maximum at +65 deg. C.

NSN GUIDE

MCL NO.	NSN
AMP-15	5996-01-350-9550
AMP-75	5996-01-350-9551
AMP-77	5996-01-350-9549
ZEL-1724LN	5996-01-450-0781
ZFL-1000LN	5996-01-412-3031
ZHL-0812HLN	5996-01-453-2464

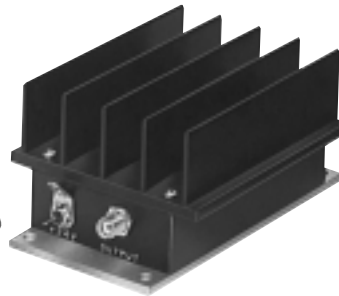
Plug-In & Coaxial



ZQLSC



ZQL



ZHL-case S32



ZHL-case NN92

up to +27 dBm output

MODEL NO.	FREQ. (MHz) f_L - 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	1.2	20	±1.0	+8	+10	+22.5	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
NEW ZQLSC-1100	600-824 824-849 850-915 915-1100	1.1 0.7 0.8 1.0	17.5 17.5 17.0 15.0	±1.0 ±0.3 ±0.4 ±1.2	+18.5 +19 +19 +19	+10 +10 +10 +10	+32.5 +34 +35 +35.5	2.0:1 1.7:1 1.8:1 1.8:1	2.0:1 1.7:1 1.8:1 1.8:1	24 24 24 24	185 185 185 185	GZ1067	pt	295.00
NEW ZQLSC-2400	1400-1850 1850-2000 2000-2400	1.15 1.25 1.65	13.5 12.5 10.5	±2.5 ±1.0 ±2.0	+19 +20.5 +20	+10 +10 +10	+37 +35 +34	1.7:1 1.5:1 1.6:1	1.6:1 1.6:1 1.9:1	24 24 24	185 185 185	GZ1067	pt	295.00
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-1900MLNW	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
ZQL-2700MLNW	2200-2400	1.3	25	±1.0	+25	+3	+38	1.25:1	1.15:1	15	325	CW686	—	281.95
ZQL-2700MLN	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	pt
RF IN	1	2	5	J1
RF OUT	8	4	11	J2
DC	5	1	2	5
TTL ALARM OUTPUT	—	—	—	1
GND TO TEST ALARM, normally open	—	—	—	7*,9*
CASE GND	2,3,4,6	3	1,3,4,6,7,8,9,10,12	2,4
NOTUSED	7	—	—	3,6,8

*Grounding Pin 7 will sink 75mA of current through Pin 7 creating a high-current alarm condition inside the amplifiers. A red LED and TTL high output will occur. Pin 7 floats at +4.3V typ. when open.

*Grounding Pin 9 will sink 2mA of current through pin 9 and creating a low-current alarm condition inside the amplifier. A red LED and TTL high output will occur. Pin 9 floats at about +0.6V typ. when open.

Alarm Functions for ZQLSC Series

Normal:	TTL low output (0 to 0.8V), green LED
Alarm:	TTL high output (4 to 5V), red LED
DC & alarm connector:	9-pin male D-sub