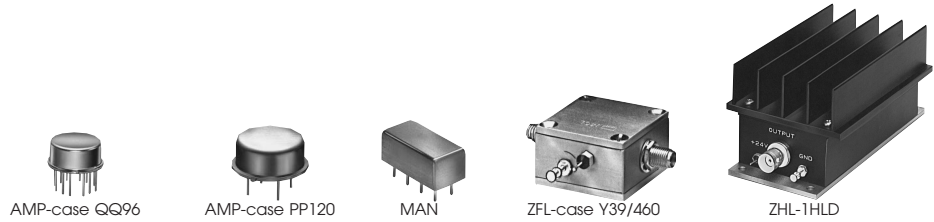


AMPLIFIERS BROADBAND, LINEAR

Plug-In & Coaxial



VARIABLE GAIN 10 to 1200 MHz

up to 20 mW (+13 dBm) output

MODEL NO.	FREQ. MHz		GAIN, dB			MAXIMUM POWER, dBm		DYNAMIC RANGE		VSWR		DC POWER		CAPD DATA	Case Style	CONNECTION	Price \$
	f_L	f_U	Min.	Flatness Max.	Control range	Output (1 dB Comp.)	Input (no damage)	NF dB Typ.	IP3 dBm Typ.	In	Out	Volt V.	Current (mA)				
ZFL-1000GH*	10-1200		24	±1.5	30**	+13	+10	15	+25	2.2:1	2:1	15	170	(see YONI on our website)	Y39	-	219.00
ZFL-1000G*	10-1000		17	±1.5	30**	+3	+10	12	+13	2:1	2:1	15	100		Y39	-	199.00

* ZFL-1000GH and ZFL-1000G, all specifications at 0 Volts control voltage.
 ** Response time (10% to 90%) 25µsec., control voltage 0 to 5 volts.

HIGH ISOLATION 2 to 2000 MHz

up to 500 mW (+27 dBm) output

MODEL NO.	FREQ. MHz		GAIN, dB			MAX. POWER, dBm		DYNAMIC RANGE		VSWR (Typ.)		ACTIVE DIRECTIVITY* dB				DC POWER		CAPD DATA	Case Style	CONNECTION	Price \$
	f_L	f_U	Min.	Flatness Max.	Total Range	Output (1 dB Comp.)	Input (no damage)	NF dB Typ.	IP3 dBm Typ.	In	Out	L_w Typ.	U Min.	U Typ.	Min.	Volt V.	Current (mA)				
MAN-1AD	5-500		16	±0.5	±1.0	+7	+6	+15	7.2	+20	1.6:1	1.7:1	35	25	30	20	12	85	A05	CC	26.45
MAN-11AD	2-2000		8	±0.5	±1.5	-2	-3.5 ^(a)	+10	6.5	+14	3.0:1	2.0:1	21	14	16	12	15	22	A06	CC	31.95
MAN-2AD	2-1000		9	±0.4	±0.7	-2	-3.5	+10	6.5	+14	2.0:1	2.0:1	24	19	19	14	15	22	A06	CC	23.95
ZFL-11AD	2-2000		8	±0.5	±1.3	-2	-3.5 ^(a)	+10	6.5	+14	2.5:1	2.0:1	21	14	16	12	15	22	Y39	-	91.95
ZFL-2AD	2-1000		9	±0.4	±0.5	-2	-3.5	+10	6.5	+14	2.0:1	2.0:1	24	19	19	14	15	22	Y39	-	83.95
ZFL-1HAD**	10-500		10	—	±1.0	+20	+20	+17	7.5	+30	1.3:1	1.35:1	30	20	25	18	15	115	SS98	-	210.00
ZFL-2HAD	50-1000		11	±0.7	±1.0	+20	+20	+15	5.0	+33	2.0:1	2.0:1	30	20	21	15	15	110	SS98	-	264.95
ZHL-1HLD	225-400		23	—	±1.0	+27	+27	+10	2.5	+40	2.0:1	2.0:1	34	28	34	28	24	525	T34	-	395.00

L_w = low range (f_L to $f_U/2$)

m = mid range ($2f_L$ to $f_U/2$)

U = upper range ($f_U/2$ to f_U)

* Active Directivity (dB) = Isolation (dB) - Gain (dB)
 ** Input VSWR of ZFL-1HAD in 10-20 MHz band increases to 1.45:1 at -55 deg.C.
 Below 50 MHz, NF increases to 11 dB typ at 10 MHz.
^(a) Above 1 GHz, -5 dBm min.

NOTES:

- ✦ Max. voltage Vdc
 - ▲ Available only with BNC connectors
 - △ Available only with SMA connectors
 - ▽ SMA standard: Also available with BNC or type N connectors, please consult factory.
 - 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, 17VDC
 - 1b. MAN models, 12.5VDC
 - 1c. ZHL models, 28VDC (except ZHL-1HAD, 17VDC)
 - 1d. ZFL models, 17VDC (except ZFL-AD, 16VDC)
 - 1e. ZJL, ZKL models, 13VDC
 2. Open load is not recommended, potentially can cause damage. With no load, derate max input power by 20 dB.

NSN GUIDE

MCL NO.	NSN
ZFL-1000H	5996-01-299-5588
ZFL-1000VH	5996-01-454-6938
ZFL-2000	5996-01-220-2213
ZFL-2000B	5996-01-220-2213
ZHL-6A	5996-01-330-3533

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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50 Ω



Low Power 50 kHz to 7000 MHz

up to 16 mW (+12 dBm) output

MODEL NO.	FREQ. MHz		GAIN, dB			MAXIMUM POWER, dBm			DYNAMIC RANGE ⁽¹⁾		VSWR (Typ.)		DC POWER		CAPD DATA	Case Style	CONNECTION	Price \$
	f _L	f _U	Typ.	Min.	Flatness Typ. ⁽¹⁾ Max.	Output (1 dB Comp.) L _w	Input (no damage) U	NF dB Typ.	IP3 dBm Typ.	In	Out	Volt V.	Current (mA)	Note B				
ZJL-7G	20-7000	10	7.5	±1.0	--	+8	+9	+15	5.0	+24	1.5:1	1.5:1	12	50		BW459	-	99.95
ZJL-6G	20-6000	13	10	±1.6	--	+9	+10	+15	4.5	+24	1.5:1	1.4:1	12	50		BW459	-	114.95
ZJL-3G	20-3000	19	14	±2.2	--	+8	+8	+13	3.8	+22	1.4:1	1.6:1	12	45		BW459	-	114.95
▼ ZFL-500	0.05-500	--	20	--	±1.0	--	+9	+5	5.3	+18	1.9:1	1.9:1	15	80	(see YONI on our website)	Y460	-	69.95
ZFL-750	0.2-750	--	18	--	±0.5	--	+9***	+5	6.0	+18	1.5:1	2:1	15	90		Y460	-	74.95
ZFL-1000	0.1-1000	--	17	--	±0.6	--	+9*	+5	6.0	+18	1.5:1	2:1*	15	105		Y460	-	79.95
AMP-3G	30-3000	--	8	--	±0.75	+9.5	+9.5	+13	3.5**	+20	2.6:1	2.5:1	15	55		PP120	cd	89.95
AMP-74	5-500	--	27	--	±1.0	+7.0	+7.0	+13	5.0	+20	2:1	2:1	15	44		PP120	cd	54.95
MAN-1	0.5-500	--	28	--	±1.4	+8	+8	+15	4.5	+18	1.8:1	1.8:1	12	60		A05	cc	15.95
MAN-2	0.5-1000	--	18	--	±1.5	+9	+7	+15	6.0	+19	1.8:1	1.8:1	12	85		A05	cc	19.95

L_w = low range (f_L to f_U/2)

U = upper range (f_U/2 to f_U)

*ZFL-1000 output VSWR 2.8:1 maximum over 750-1000 MHz; 1 dB compression +7 dBm at 500-1000 MHz ***+7 dBm from 500 to 750 MHz.

**NF increases with decreasing frequency, 5 dB typical at 300 MHz, and 10 dB typical at 30 MHz.

⁽¹⁾ZJL models: Flatness specified to 0.75 f_U dynamic range at 2 GHz.

MEDIUM POWER 2.5 kHz to 8000 MHz

up to 320 mW (+25 dBm) output

MODEL NO.	FREQ. MHz		GAIN, dB			MAXIMUM POWER, dBm			DYNAMIC RANGE ⁽¹⁾		VSWR (Typ.)		DC POWER		CAPD DATA	Case Style	CONNECTION	Price \$
	f _L	f _U	Typ.	Min.	Flatness Typ. ⁽¹⁾ Max.	Output (1 dB Comp.) L _w	Input (no damage) U	NF dB Typ.	IP3 dBm Typ.	In	Out	Volt V.⚡	Current (mA)	Note B				
AMP-2000	10-2000	--	20	--	±1.5	+15	+5	5	+25	2:1	2:1	15	100		QQ96	ce	139.95	
ZFL-2000	10-2000	--	20	--	±1.5	+16*	+5	7	+25	2:1	2:1	15	120		FOR DATA	SS98	-	219.00
ZFL-2500	500-2500	--	28	--	±1.5	+15	+5	8	+27	2.5:1	2.5:1	5	220			Y460	-	99.95
ZFL-2500VH	10-2500	--	20	--	±1.5	+23	+10	5.5	+35	1.7:1*	2:1*	15	300	SS98		-	264.95	
ZFL-1000H	10-1000	--	28	--	±1.0	+20	+5	5	+33	2:1	2:1	15	160	SEE YONI ON OUR WEBSITE	SS98	-	219.00	
ZFL-1000VH	10-1000	--	20	--	±1.0	+25	+15	4.5	+38	2:1**	2.5:1	15	320		SS98	-	229.00	
NEW ZFL-1000VH2	10-1000	28	26	--	±1.0	+25	+15	5.0	+38	2:1	2.5:1	15	320		SS98	-	249.00	
ZRON-8G	2000-8000	--	20	--	±1.5★	+20	+10	6	+30	2:1	2:1	15	310		AV243	-	495.00	
▲ ZHL-6A	.0025-500	25	21	--	±1.2	+22	+10	9.5***	+34	1.8:1	2:1***	24	350		S32	-	199.00	
ZHL-1042J	10-4200	--	25	--	±1.5	+20	+10	6	+30	2.5:1	2.5:1	15	330		NN92	-	495.00	
ZJL-4G	20-4000	12.4	10.0	±0.25	--	+13.5	+11	+20	5.5	+30.5	1.4:1	1.6:1	12	75		BW459	-	129.95
ZJL-4HG	20-4000	17.0	13.0	±1.5	--	+15.0	+12	+13	4.5	+30.5	1.5:1	1.4:1	12	75		BW459	-	129.95
ZJL-5G	20-5000	9.0	7.0	±0.55	--	+15.0	+9.5	+20	8.5	+32	1.6:1	1.3:1	12	80		BW459	-	129.95
ZKL-2R7	10-2700	24.0	20.0	--	±0.7	+13	+13	+13	5.0	+30	1.3:1	1.4:1	12	120		BY493	-	149.95
ZKL-2R5	10-2500	30.0	26.0	--	±1.5	+15	+15	+13	5.0	+31	1.4:1	1.4:1	12	120		BY493	-	149.95
ZKL-2	10-2000	33.5	30.0	--	±1.0	+15	+15	+13	4.0	+31	1.4:1	1.4:1	12	120		BY493	-	149.95
ZKL-1R5	10-1500	40.0	36.0	--	±1.2	+15	+15	+13	3.0	+31	1.4:1	1.6:1	12	115	BY493	-	149.95	

L_w = low range (f_L to f_U/2)

U = upper range (f_U/2 to f_U)

* +15 dBm below 1000 MHz

** Input VSWR 2:1 max, increasing below 20 MHz to 2.25:1 max at 10 MHz.

*** NF continually increases from 70 MHz to 10 MHz by approximately 4 dB.

• Max. VSWR In 2.0:1, Out 2.5:1

★ Measured at 25°C.

⁽¹⁾ ZJL models: Flatness specified to 0.75 f_U dynamic range at 2 GHz.

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