

AMPLIFIERS

Broadband, Linear 50 Ω 50 kHz to 21 GHz



MODEL PREFIX	FREQUENCY (MHz)	GAIN, (dB)		MAXIMUM POWER (dBm) Typ.		NOISE FIGURE (dB)	IP3 (dBm)	VSWR Typ. (:1)		ACTIVE DIRECTIVITY (dB) Typ.	DC OPERATING POWER	
	$f_L - f_U$	Min.	Flatness Max.	Output (1 dB Comp.) Total Range	Input (no damage)	Typ.	Typ.	In	Out	Midband	VOLT (V) Nom.	CURRENT (mA) Max.

ULTRA LOW NOISE up to +20 dBm output NF 0.55 dB to 1 dB

ZX60-0916LN	824-960	16.5	±1.2	16.5	+10	0.55	+30.0	1.2	1.4	6.5	5.0	45
ZX60-242LN	1710-2400	10.0	±2.5	16.5	+10	0.75	+33.5	1.2	1.6	8	5.0	46
ZX60-242GLN	1710-2400	26.0	±1.2	20.0	+17	1.0	+36.0	1.4	1.6	12	5.0	150
ZX60-272LN	2300-2700	11.5	±1.5	18.0	+17	0.90	+32.0	1.3	1.3	7	5.0	70
ZX60-362LN	3300-3600	9.0	±1.0	10.5	0	0.90	+22.0	1.4	1.4	8	5.0	30
ZX60-362GLN	3300-3600	18.0	±0.6	16.0	+15	0.90	+29.0	1.2	1.4	22	5.0	140

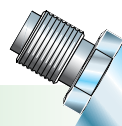
LOW NOISE up to +26 dBm output NF 0.4 dB to 2.0 dB

ZRL-700	250-700	27.0	±1.0	+24.8	+10	2.0	+46.0	1.20	1.10	16	12	575
ZQL-900LN	824-849	15.0	±0.5	+21.0	+10	0.9	+35.0	1.2	1.1	7	15	160
ZQL-900MLN	824-849	25.5	±0.5	+24.5	+3	1.2	+41.0	1.3	1.4	22	15	230
ZQL-900LNW	800-900	13.0	±1.6	+21.0	+10	0.9	+35.0	1.2	1.1	7	15	160
ZQL-900MLNW	800-900	22.0	±2.2	+23.0	+3	1.2	+41.0	1.3	1.4	24	15	230
ZQLSC-1100	600-1100	15.0	±2.5	+19.0	+10	0.6	+35.0	1.5	1.5	11	24	185
ZEL-0812LN	800-1200	20.0	±1.0	+8.0	+13	1.3	+18.0	1.8	1.6	11	15	70
ZHL-0812HLN	800-1200	30.0	±1.0	+26.0	+10	1.2	+36.0	1.8	1.6	27	15	725
ZHL-0812MLN	800-1200	28.0	±1.0	+20.0	0	1.4	+33.0	1.4	1.7	35	15	300
ZRL-1200	650-1200	25.0	±1.0	+24.3	+10	2.0	+46.0	1.2	1.2	17	12	575
ZRL-1150LN	650-1400	25.0	—	+24.0	+10	0.8	+40.0	1.2	1.2	17	12	500
ZX60-1215LN	800-1400	11.0	±3.0	+12.5	+13	0.4	+26.7	1.65	1.4	13	12	50
ZX60-1614LN	1217-1620	11.0	±2.0	+13.5	+13	0.5	+30.0	1.3	1.3	11.7	12	50
ZEL-1217LN	1200-1700	20.0	±1.0	+8.0	+13	1.5	+25.0	2.0	1.4	11	15	70
ZHL-1217HLN	1200-1700	30.0	±1.0	+26.0	+10	1.2	+36.0	1.8	1.4	20	15	725
ZHL-1217MLN	1200-1700	30.0	±1.0	+20.0	0	1.5	+34.0	1.8	1.4	34	15	300
ZQL-1900LN	1850-1910	15.0	±0.5	+19.0	+10	1.3	+37.0	1.15	1.25	10	15	160
ZQL-1900MLN	1850-1910	25	±0.5	+26.0	+3	1.15	+41.0	1.25	1.2	19	15	310
ZQL-1900LNW	1700-2000	14.0	±1.8	+18.5	+10	0.8	+37.0	1.15	1.25	10	15	160
ZQL-1900MLNW	1800-2000	23.0	±2.0	+25.0	+3	1.2	+41.0	1.4	1.25	17	15	310
ZRL-2150	950-2150	22.5	±1.8	+22.0	+10	1.5	+33.0	1.3	1.2	26	12	300
ZEL-1724LN	1700-2400	20.0	±1.0	+8.0	+13	1.5	+22.0	1.6	1.6	12	15	70
ZHL-1724HLN	1700-2400	30.0	±1.0	+26.0	+10	1.2	+36.0	1.6	1.6	17	15	725
ZHL-1724MLN	1700-2400	28.0	±1.0	+20.0	0	1.1	+32.0	1.6	1.6	32	15	300
ZQLSC-2400	1400-2400	10.5	—	+20.0	+10	1.1	+36.0	1.5	1.6	9	24	185
ZRL-2400LN	1000-2400	23.0	±4.0	+23.0	+10	1.0	+44.0	1.5	1.35	15	12	500
ZQL-2700MLNW	2200-2700	25.0	±3.0	+25.0	+3	1.0	+38.0	1.25	1.15	31	15	325
ZX60-33LN	50-3000	13.0	—	+17.0	+13	1.1	+32.0	2.0	1.6	10	5.0	80
ZX60-3011	400-3000	7.5	—	+19.5	+15	1.6	+31.0	1.7	1.6	11	12	120
ZX60-3800LN	3300-3800	19.0	±1.0	+18.0	+1	0.9	+36.0	1.35	1.35	17	5.0	110

LOW POWER up to +12 dBm output

ZFL-500	0.05-500	20.0	±1.0	+9.0	+5	5.3	+18.0	1.9	1.9	16	15	80
ZFL-500LN	0.1-500	24.0	±0.5	+5.0	+5	2.9	+14.0	1.5	1.6	25	15	60
ZFL-750	0.2-750	18.0	±0.5	+9.0	+5	6.0	+18.0	1.5	2.0	22	15	90
ZFL-1000	0.1-1000	17.0	±0.7	+9.0	+5	6.0	+18.0	1.5	2.1	23	15	105
ZFL-1000LN	0.1-1000	20.0	±0.5	+3.0	+5	2.9	+14.0	1.5	2.0	23	15	60
ZFL-2AD	2-1000	9.0	±0.5	-3.5	+10	6.5	+14.0	2.0	2.0	21	15	22
ZFL-11AD	2-2000	8.0	±1.3	-3.5	+10	6.5	+14.0	2.5	2.0	18	15	22
ZKL-2R5	10-2700	20.0	±0.7	+12.0	+13	5.0	+30.0	1.3	1.4	11	12	120
ZJL-3G	20-3000	14.0	±2.9	+8.0	+13	3.8	+22.0	1.4	1.6	3	12	45
ZJL-4G	20-4000	10.0	±0.6	+12.0	+20	5.5	+30.5	1.4	1.6	6	12	75
ZJL-6G	20-6000	10.0	±1.9	+10.0	+15	4.5	+24.0	1.5	1.4	6	12	50
ZJL-7G	20-7000	7.5	±1.2	+9.0	+15	5.0	+24.0	1.5	1.5	7	12	50
ZX60-8008E	20-8000	8.4	—	+10.8	+15	4.1	+24.0	1.5	1.9	8	12	50
ZX60-14012L	0.3-14000	9.0	±2.0	+11.0	+10	5.5	+20.0	1.3	1.7	5	12	68





MODEL PREFIX	FREQUENCY (MHz)	GAIN, (dB)		MAXIMUM POWER (dBm) Typ.		NOISE FIGURE (dB)	IP3 (dBm)	VSWR Typ. (:1)		ACTIVE DIRECTIVITY (dB) Typ.	DC OPERATING POWER	
	f_c - f_u	Min.	Flatness Max.	Output (1 dB Comp.) Total Range	Input (no damage)	Typ.	Typ.	In	Out	Midband	VOLT (V) Nom.	CURRENT (mA) Max.

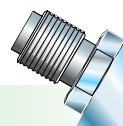
MEDIUM POWER up to +21 dBm output

ZFL-1HAD	10-500	10.0	±1.0	+20.0	+17	7.5	+30.0	1.3	1.35	33	15	115
ZFL-500HLN	10-500	19.0	±0.4	+16.0	+15	3.8	+30.0	2.0	2.0	15	15	110
ZFL-1000H	10-1000	28.0	±1.0	+20.0	+5	5.0	+33.0	2.0	2.0	15	15	160
ZFL-2HAD	50-1000	11.0	±1.0	+20.0	+15	5.0	+33.0	2.0	2.0	25	15	110
ZKL-1R5	10-1500	36.0	±1.2	+15.0	+13	3.0	+31.0	1.4	1.6	7	12	115
ZFL-2000	10-2000	20.0	±1.5	+16.0	+5	7.0	+25.0	2.0	2.0	12	15	120
ZKL-2	10-2000	29.0	±1.5	+15.0	+13	4.0	+31.0	1.4	1.4	10	12	120
ZKL-2R5	10-2500	26.0	±1.5	+13.0	+13	5.0	+31.0	1.4	1.4	10	12	120
ZFL-2500	500-2500	28.0	±1.5	+15.0	+5	8.0	+27.0	2.5	2.5	32	5	220
ZX60-2510M	500-2500	12.9	—	+16.2	+10	5.4	+28.8	1.5	1.6	20	5	95
ZX60-2514M	500-2500	16.4	—	+17.5	+10	4.8	+30.3	1.5	1.7	17	5	90
ZX60-2522M	500-2500	23.5	—	+19.2	+10	3.0	+30.6	1.5	1.7	17	5	95
ZX60-2531M	500-2500	31.0	—	+18.2	+10	3.5	+28.4	1.3	1.6	25	5	130
ZX60-2534M	500-2500	34.0	—	+18.0	+10	3.1	+30.0	1.3	1.5	20	5	185
ZX60-3018G	20-3000	18.0	—	+12.8	+13	2.7	+25.0	1.3	1.4	4	12	45
ZJL-4HG	20-4000	13.0	±2.4	+15.0	+13	4.5	+30.5	1.5	1.4	5	12	75
ZX60-4016E	20-4000	15.7	—	+17.4	+13	3.9	+30.0	1.25	1.3	4	12	75
ZX60-43	0.5-4000	17.0	—	+17.3	+13	5.4	+33.0	1.2	2.0	8	5	110
ZHL-1042J	10-4200	25.0	±1.5	+20.0	+10	6.0	+30.0	2.5	2.5	26	15	330
ZX60-V83	20-4700	16.8	—	17.0	+20	6.0	+31.0	1.25	1.7	10	5	82
ZJL-5G	20-5000	7.0	±0.55	+15.0	+20	8.5	+32.0	1.6	1.3	8	12	80
ZX60-5916M	1500-5900	17.2	—	+15.7	+10	6.4	+28.3	2.2	1.2	22	5	96
ZX60-V81	20-6000	8.5	—	18.5	+20	8.0	+36.0	1.2	1.25	13	5	115
ZX60-V82	20-6000	13.5	—	20.0	+20	6.8	+35.0	1.3	1.5	11	5	120
ZX60-6013E	20-6000	13.0	—	+13.4	+15	3.3	+28.7	1.4	1.2	6	12	50
ZRON-8G	2000-8000	20.0	±1.5	+20.0	+10	6.0	+30.0	2.0	2.0	43	15	310

MEDIUM HIGH POWER up to +30 dBm output

ZHL-32A	0.05-130	25.0	±1.0	+29.0	+10	10.0	+38.0	2.0	2.0	13	24	600
ZHL-3A	0.4-150	24.0	±1.0	+29.5	+10	11.0	+38.0	2.0	2.0	12	24	600
ZRL-400	150-400	27.0	±1.0	+25.0	+10	2.5	+42.0	1.25	1.35	19	12	575
ZHL-6A	.0025-500	21.0	±1.2	+22.0	+10	9.5	+34.0	1.8	2.0	30	24	350
ZHL-1A	2-500	16.0	±1.0	+28.0	+20	11.0	+38.0	2.0	2.0	14	24	600
ZHL-211	800-950	20.0	±0.4	+29.0	+15	8.0	+38.0	1.8	1.8	24	24	600
ZFL-1000VH	10-1000	20.0	±1.0	+25.0	+15	4.5	+38.0	2.0	2.5	17	15	320
ZFL-1000VH2	10-1000	26.0	±1.0	+25.0	+15	5.0	+38.0	2.0	2.5	17	15	320
ZHL-2	10-1000	16.0	±1.0	+29.0	+15	9.0	+38.0	2.0	2.0	27	24	600
ZHL-2-8	10-1000	27.0	±1.0	+29.0	+5	10.0	+38.0	2.0	2.0	31	24	600
ZHL-1010	50-1000	9.5	±0.6	+26.0	+22	3.5	+46.0	2.0	2.0	7	12	525
ZHL-1010-75	50-1000	9.5	±0.7	+26.0	+20	3.5	+47.0	1.5	1.5	6	12	525
ZHL-2010	50-1000	20.0	±0.8	+26.0	+11	3.7	+46.0	2.0	2.0	11	12	900
ZHL-3010	50-1000	30.0	±1.0	+26.0	-3	5.5	+46.0	2.5	2.0	16	12	1000
ZHL-2-12	10-1200	24.0	±1.0	+29.0	+10	4.0	+38.0	2.0	2.0	25	24	750
ZRL-2300	1400-2300	21.0	±1.0	+24.6	+10	2.5	+42.0	1.2	1.16	21	12	575
ZX60-2411BM	800-2400	9.0	±2.2	+24.0	+14	3.5	+46.5	1.2	1.2	9	5	360
ZFL-2500VH	10-2500	20.0	±1.5	+23.0	+10	5.5	+35.0	1.7	2.0	15	15	300
ZRL-3500	700-3500	11.0	—	+24.0	+10	2.4	+45.0	1.40	1.30	22	12	575
ZHL-42W	0-4200	30.0	±1.5	+28.0	0	8.0	+38.0	2.5	2.5	26	15	880
ZHL-4240W	10-4200	40.0	±1.5	+28.0	-5	8.0	+38.0	2.5	2.5	19	15	900
ZHL-42	700-4200	30.0	±1.0	+28.0	+5	10.0	+38.0	2.5	2.5	31	15	880
ZHL-4240	700-4200	40.0	±1.5	+28.0	-5	8.0	+38.0	2.5	2.5	18	15	900
ZVE-8G	2000-8000	30.0	±2.0	+30.0	+20	4.0	+40.0	2.0	2.0	17	12	1200
ZVA-183	700-18000	24.0	±1.0	+24.0	+4	3.0	+33.0	1.35	1.25	50	12	400
ZVA-213	800-21000	20.0	±1.0	+24.0	+4	3.0	+33.0	1.35	1.25	50	12	400





AMPLIFIERS

Broadband, Linear 50 Ω

2.5 kHz to 8 GHz

(WITHOUT HEATSINK)

ZHL-03-SWFX
ZHL-1-2WX
ZHL-1000-3WX
ZHL-30W-252
Case BT1344

LZY-1X Case BT1312
LZY-2X Case BT451
ZHL-10W-2G
ZHL-50W-52X
ZHL-100W-52X
Case BT1165

LZY-1 Case BT1312
LZY-2 Case BT451
ZHL-10W-2G Case BT1204
ZHL-50W-52 Case BT1165
ZHL-100W-52 Case BT1165
ZHL-30W-252 Case BT1344

ZFL
Case Y39

TIA-1000-1R8
Case AP175

TIA-1000-4
Case AP176

MODEL PREFIX	FREQUENCY (MHz) f_L - f_U	GAIN, (dB)		MAXIMUM POWER (dBm)		NOISE FIGURE (dB) Typ.	IP3 (dBm) Typ.	VSWR Typ. (:1) In Out		ACTIVE DIRECTIVITY (dB) Typ. Midband	DC OPERATING POWER	
		Min.	Flatness Max.	Output (1 dB Comp.) Min.	Input (no damage)						VOLT (V) Nom.	CURRENT (mA) Max.

HIGH POWER above +30 dBm output NF from 3.0 dB

ZHL-03-5WFX	60-300	30.0	±1.0	+36.0	+10	3.0	+49.0	1.4	1.5	29	24	2800
ZHL-03-5WFX	60-300	30.0	±1.0	+36.0	+10	3.0	+49.0	1.4	1.5	29	24	2800
ZHL-5W-1	5-500	40.0	±1.7	+37.0	0	4.0	+49.0	2.0	2.5	16	24	3300
ZHL-1-2W	5-500	29.0	±1.0	+33.0	+10	12.0	+44.0	2.0	2.0	20	24	900
ZHL-1-2WX	5-500	29.0	±1.0	+33.0	+10	12.0	+44.0	2.0	2.0	20	24	900
ZHL-50W-52	50-500	46.0	±2.8	+43.0	+2	6.0	+55.0	1.6	2.0	24	24	9300
ZHL-50W-52X	50-500	46.0	±2.8	+43.0	+2	6.0	+55.0	1.6	2.0	24	24	9000
ZHL-100W-52	50-500	47.0	±1.8	+45.0	+3	6.5	+57.0	1.45	2.5	28	24	10500
ZHL-100W-52X	50-500	47.0	±1.8	+45.0	+3	6.5	+57.0	1.45	2.5	28	24	10200
LZY-1	20-512	39.0	±1.5	+44.0	+10	8.6	+54.0	2.0	—	20	26	7300
LZY-1X	20-512	39.0	±1.5	+44.0	+10	8.6	+54.0	2.0	—	20	26	7300
ZHL-900A-10W	480-900	24.0	±1.0	+39.0	+25	10.0	+50.0	1.3	1.3	35	24	3500
ZHL-20W-13	20-1000	46.0	±1.8	+39.0	0	3.5	+50.0	1.7	2.5	20-30	24	2800
ZHL-20W-13X	20-1000	46.0	±1.8	+39.0	0	3.5	+50.0	1.7	2.5	5-19	24	2800
LZY-2	500-1000	40.0	±1.5	+43.0	+10	8.0	+54.0	2.0	3.5	6	26	8000
LZY-2X	500-1000	40.0	±1.5	+43.0	+10	8.0	+54.0	2.0	3.5	6	26	8000
ZHL-1000-3W	500-1000	38.0	±1.5	+35.0	0	3.5	+45.0	2.0	2.5	36	24	2250
ZHL-1000-3WX	500-1000	38.0	±1.5	+35.0	0	3.5	+45.0	2.0	2.5	36	24	2250
ZHL-5W-2G	800-2000	40.0	±2.1	+36.0	+1	8.0	+44.0	1.7	1.5	40	24	2000
ZHL-5W-2GX	800-2000	40.0	±2.1	+36.0	+1	8.0	+44.0	1.7	1.5	40	24	2000
ZHL-10W-2G	800-2000	40.0	±2.0	+39.0	+1	7.0	+50.0	1.3	1.3	40	24	5000
ZHL-10W-2GX	800-2000	40.0	±2.0	+39.0	+1	7.0	+50.0	1.3	1.3	40	24	5000
ZHL-30W-252	700-2500	45.0	±2.0	+43.0	0	5.5	+52.0	1.3	1.2	30	28	6300
ZHL-30W-252X	700-2500	45.0	±2.0	+43.0	0	5.5	+52.0	1.3	1.2	30	28	6300
ZVE-3W-83	2000-8000	30.0	±2.0	+33.0	+20	5.8	+42.0	1.5	1.4	45	15	1500
ZVE-3W-83X	2000-8000	30.0	±2.0	+33.0	+20	5.8	+42.0	1.5	1.4	45	15	1500

VARIABLE GAIN up to +13 dBm output NF from 12 dB, Control Range 30 dB

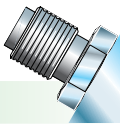
ZFL-1000G	10-1000	17.0	±1.5	+3.0	+10	12.0	+13.0	2.0	2.0	30	15	100
ZFL-1000GH	10-1200	24.0	±1.5	+13.0	+10	15.0	+25.0	2.2	2.0	24	15	170

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		Min.	Flatness Max.	Output (1 dB Comp.) Min.	Input (no damage)						VOLT (V)	CURRENT (mA) Max.

RF INSTRUMENT

TIA-1000-1R8	0.50-1000	35.0	±2.0	+32.0	+7	8.0	+45.0	1.9	2.5	44	110	1300
TIA-1000-1R8-2	0.50-1000	35.0	±2.0	+32.0	+7	8.0	+45.0	1.9	2.5	44	220	650
TIA-1000-4	100-1000	19.0	±1.5	+36.0	+25	12.0	+48.0	2.5	2.5	38	110	3700
TIA-1000-4-2	100-1000	19.0	±1.5	+36.0	+25	12.0	+48.0	2.5	2.5	38	220	1850





MODEL PREFIX	FREQUENCY (MHz)	GAIN, (dB)		RISE/ FALL TIME (ns) Max.	PULSE WIDTH (µs) Max.	MAXIMUM POWER (dBm) Typ.		NOISE FIGURE (dB) Typ.	IP3 (dBm) Typ.	VSWR Typ. (:1)		ACTIVE DIRECTIVITY (dB) Typ. Midband	DC OPERATING POWER	
		Flatness Min.	Max.			Output (1 dB Comp.)	Input (no damage)			In	Out		VOLT (V) Nom.	CURRENT (mA) Max.

PULSE AMPLIFIERS Inverting and Non-Inverting +22 dBm output NF from 7.2 dB

ZPUL-21	0.0025-700	21	±1.0	1.5	6	22.0	+10	7.3	+34.0	2.0	2.0	27	24	350
ZPUL-30P	0.0025-700	29	±1.0	1.5	6	22.0	+10	7.2	+34.0	2.0	2.0	37	24	400

