

Nelson Pass F5 amplifier										
Part description	Ref	No of	Manufactured by	OEM Part code	Value	Supplier	Each £	Total	notes	
FET two-stage Class A push-pull design.										
Output devices. N-Channel MOSFET	Q4	3	Vishay	FQA19N20c	200V, 15-20A	Mouser	£2.05	£6.15	Alternative part is IRFP 240. One spare	
Mosfet output devices	Q3	3	Vishay	FQA12P20		Mouser	£2.09	£6.27	no longer made. 150w, 50v 12A. Alt part is IRFP 9240	
Mosfet - NPN	Q6	4		ZTX450		Mouser	£0.44	£1.76	1st stage gain device. Two spares ;-)	
Mosfet - PNP	Q5	4		ZTX550		Mouser	£0.44	£1.76	Small PNP Bipolar power transistor. Available	
Trans JFET P-CH 20mA 3-Pin TO-92 T/R	Q2	4	Toshiba	2SJ74		Ebay, Audio Wind HKK		12.7	No longer made. Alternative is 2SJ108. transconductance figure of 20 mS	
Trans JFET P-CH 20mA 3-Pin TO-92 T/R	Q1	4	Toshiba	2SK170		Ebay / Mouser	£0.53		No longer made. Alternative is 2SK370. Look on Ebay, watch out for Chinese copies. Audio Wind shop.	
Thermistor, NTC	TH1-2	4	Vishay		4.7K	Mouser	£0.93	£3.71	871-B57164K472J	
Trim Pots	P1-2	4	Bourns 3296		5K	Mouser	£2.43	£9.72		
Trim Pots	P3	2	Bourns 3296		200ohms	Mouser	£2.43	£4.86		
Heatsink Compound 5X1g		1				Mouser	£1.32	£1.32	Great article by Rod Elliott <a href="http://sound.westhost.com/heatsinks.htm">http://sound.westhost.com/heatsinks.htm</a>	
Metal Film Resistors. 0.5W power rating	R1	2	Takman		4.75K	hfc	£0.78	£1.56	Metal film tend to be clean sounding and carbon version warmer...so I can mix them up to suit	
Non magnetic. 1% tolerance	R2	2	Takman		47.5K	hfc	£0.78	£1.56	<a href="http://www.hificollective.co.uk/components/resistors.html">http://www.hificollective.co.uk/components/resistors.html</a>	
0.5W	R3-4	4	Takman		10 ohms	hfc	£0.78	£3.12		
0.5W	R 5-6	4	Takman		2.21K	hfc	£0.78	£3.12		
3W	R7-8	4	Mills		.47 ohm	hfc	£3.00	£12	Kiwame don't have this value in 5W	
R9,10,11,12 - 3W	R9-12	8	Mills		100 ohms	hfc	£3.00	£24	Five watt resistors are recommended for Turbo V1 amp	
R13,14,17,18. 1W	R13	8	Takman		100 ohms	hfc	£1.38	£11.04	Alt is CMF55/RN55	
	R15-16	4	Takman		1K	hfc	£1.38	£5.52	1/4 Watt ones be fine.	
	R19,20	4	Takman		10K	hfc	£1.38	£5.52		
1W	R21-22	4	Takman	REY75	2.21K	hfc	£1.38	£5.52		
Circuit board for all small audio parts		2	Veroboard	485-3892	149x114	RS	£3.00	£6	Point to point wiring. Could use two long thin ones or four small one around each output device. Alt is Toecutter PCB artwork on DIYaudio	
Matrix board pins for test points etc		1			1mm, bag 100	Ebay	£3.00		Consider 2way PCB screw terminal for testing purposes	
RCA sockets and speaker terminals. Nickel free, silver plated		2		CMC				0	Or hard wire existing pure, soft silver cables in. CMC is ok, ultimate is WBT, Ag	
Teflon sleeve, clear for internal cables		2		1.5mm		hfc	£1.56	£3.12		
Silver plated copper wire and teflon. 1.45mm/ 15AWG can handle 28 amps max in a chassis. PSU		1		SP1500S-050	1.5mm, 3 mtrs	Wires	£3.00	£3	large awg for connecting to output devices etc. large currents. 2.0mm dia is too stiff	
Soft silver wire and teflon. 1.0mm/ .AWG		1			1.0mm, x 1mt	Wires	£16.00	16	1mm can handle 14-16amps max in a chassis for audio circuit	
<b>Split Rail (bipolar) Power Supply:</b>										
Toroidal transformer for PSU. Primary 240V, secondary DUAL windings of 18 Volts AC. 6Amp output	TR1	1	Nuvotem, Hammond or Block	223-8162	225-300VA	RS	£34.48	£34.48	Foam disc to isolate mains T. RS code 752-9393. I need 24v DC so multiply by 0.75 to give secondary AC voltage on TR1. For Turbo V1, buy 2x24 secondary windings to give 32v to Amp	
Electrolytic caps - 25V rating min. Solder tags	C1-8	8	Mundorf or Vishay. BHC	683 1989 - 101 PHR-ST	15,000uF	RS	£16.88	£135.04	Vishay. Long life, low ESR & leakage, high ripple current. ALS30 from BHC in some Naim PSU. ALC10S Series with slit foil developed for audio 10,00uF. Need 40 or 63V for Turbo V1	
Polystyrene film caps, 250v AC	C9	1		684-2181	0.0033uF	RS	£2.10	£2.10	3300pF. Pack of 5	
Resistors. Wire wound, non inductive, through hole & 3-5W	R1-8	8	Mills		.47ohms	hfc	£3.00	£24	RS have wirewound 7W resistors, inductive 485-3189	
Resistors. 3W	R9-10	2	Mills		2.2K	hfc	£3.00	£6	Mills are non inductive type. Bought out by Vishay in Sept 2011	
Mains rocker on/off switch, single pole		1				hfc	£1.80	£1.80	SPST. No neon. Black heatshrink to go over terminals. 2:1 from HFC	
Mains socket		1				hfc	£1.80	£1.80	Ultimate is Furutech	
Thermistor, CL60 type. NTC		4			10 ohms	Mouser	£1.10	£4.40	Two per PSU. Bought 4 so have option to go dual mono	
Bridge rectifier - chassis mount 200V		4		GBPC3502	35A	Mouser	£2.19	£8.76	Buy 4 just in case I decided to go dual PSU. spade terminals. Alternative is ultra fast diodes	
Slow blow fuse - 5x20mm		2	Cooper/Bussman		1.25A	Mouser	£2.00	£4	Solder in axial type. Fuse holder <a href="http://www.bluebellaudio.com/">http://www.bluebellaudio.com/</a>	
Aluminium case with side heatsinks to cope with heat from Output devices. 1050A is most heat conductive. 350X100X48mm		2	Silicon Ray, USA enclosure or DIY with 2 Conrad	Flared fin, flat back. MF35-100	180W	Conrad Heatsinks, Australia		74	Silicon Ray has a selection of similar looking cases to the First Watt ones. to cope with heat need larger case Enclosure RE4312H 430X120X411. 12Kg. Aavid or Wakefield 392 Power range. Or <a href="http://www.heatsinkusa.com">http://www.heatsinkusa.com</a> . Rating .6 deg C./watt per device	
Stainless steel bolts for Mosfets and chassis		12			3mm	Ebay	0.5	6	Copper washers or U shaped clamps for Mosfets. Steve Holt updated on 16th June 2012	
Mica or Kapton insulation sheet/tape for output transistors		1	Sumo	One roll Kapton tape	0.25mm	Ebay	4.85	4.85	High Temperature Kapton Polyimide Tape 15mm,	
Birch ply for front with veneer and some for rear of amp.								10	Maybe cut out for sockets. (copper or acrylic)	
							<b>464.762</b>			