

AUDIO LIMITER

Resistors

 $\frac{1}{4}$ W 5% carbon

560 Ω	1	R17
680 Ω	1	R16
1k Ω	2	R2,8
2.2k Ω	1	R24
2.7k Ω	2	R5,6
3.3k Ω	1	R26
4.7k Ω	1	R7
5.6k Ω	1	R15
6.8k Ω	2	R20,22
10k Ω	2	R14,23
12k Ω	1	R12
15k Ω	2	R13,25
22k Ω	1	R27
33k Ω	1	R19
47k Ω	3	R4,10,18
68k Ω	1	R1
82k Ω	1	R3
100k Ω	2	R9,11

 $\frac{1}{2}$ W 10% carbon

2.2M Ω	1	R21
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Capacitors

50V electrolytic, p.c.b. mounting

10 μ F	6	C2,3,5,7,10,14
22 μ F	3	C6,9,11
47 μ F	1	C1
100 μ F	1	C13

25V electrolytic, double-ended

10 μ F	2	C8,12
22 μ F	1	C4

Potentiometers

Min. horizontal-mounting skeleton preset

4.7k Ω	2	VR1,2
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Midget, linear track, 0.5W

25k Ω	1	VR3
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Miscellaneous

Miniature single-core screened cable; printed circuit board; knob to suit VR3; equipment wire; fixings, sockets, etc., to suit individual requirements.

Semiconductors

Diodes

1N4148	2	D1,2
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Transistors

BC108	4	Tr3,4,5,6
BC109	1	Tr1
2N3819	1	Tr2

Integrated circuit

μ A741C	1	IC1
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POWER SUPPLY

Resistors

 $\frac{1}{4}$ W 5% carbon

680 Ω	1	R1
820 Ω	1	R2
4.7k Ω	1	R3

2.5W 5% wirewound

33 Ω	1	R4
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Capacitors

Min. polyester

0.1 μ F	1	C3
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63V electrolytic

100 μ F	2	C2,4 (p.c.b. type)
1000 μ F	1	C1 (double-ended)

Semiconductors

Diodes

BZX61C30V	1	D1
Red l.e.d.	1	D2

Transistor

BFY50	1	Tr1
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Bridge rectifier

100V 1A	1	BR1
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Miscellaneous

Printed circuit board; 3VA 15-0-15V transformer, p.c.b. mounting (RS Type 207-841 or similar); heat shunt for Tr1 (case style TO39); equipment wire; 3-core mains cable, fixings, etc., to suit individual requirements.

Construction

Many constructors will undoubtedly wish to build the limiter into an existing piece of equipment—provided that a d.c. supply of approximately 30V is available, the existing power supply can be used. *Do not exceed 35V or damage to IC1 may occur.*

Because the device is a basic “building block” which can be used in a myriad of applications, the inclusion of details of a case, sockets, etc., is largely pointless—this is also the reason why the p.s.u. has not been built onto the main p.c.b. For those that do wish to build the limiter into a standard box with input and output sockets, Fig. 8 shows the circuit for a suitable power supply; the p.c.b.

details for it are shown in Fig. 6.

For stereo use, two limiters can obviously be employed so that the input to each channel of the main amplifier unit is limited independently of the other—but as this might lead to some rather odd or inconvenient effects with, for example, bassy beat music you may prefer to arrange matters so that both limiters share the same control voltage. Figure 7 shows a way of doing this, but an “overload” on one channel will naturally affect the gain of the other.

So it is very much a case of swings and roundabouts and the constructor will have to determine the method which best suits his purpose and taste!