POWER SUPPLIERS PS2/91A-C, PS2/92A, B, PS2/93A-V

Introduction

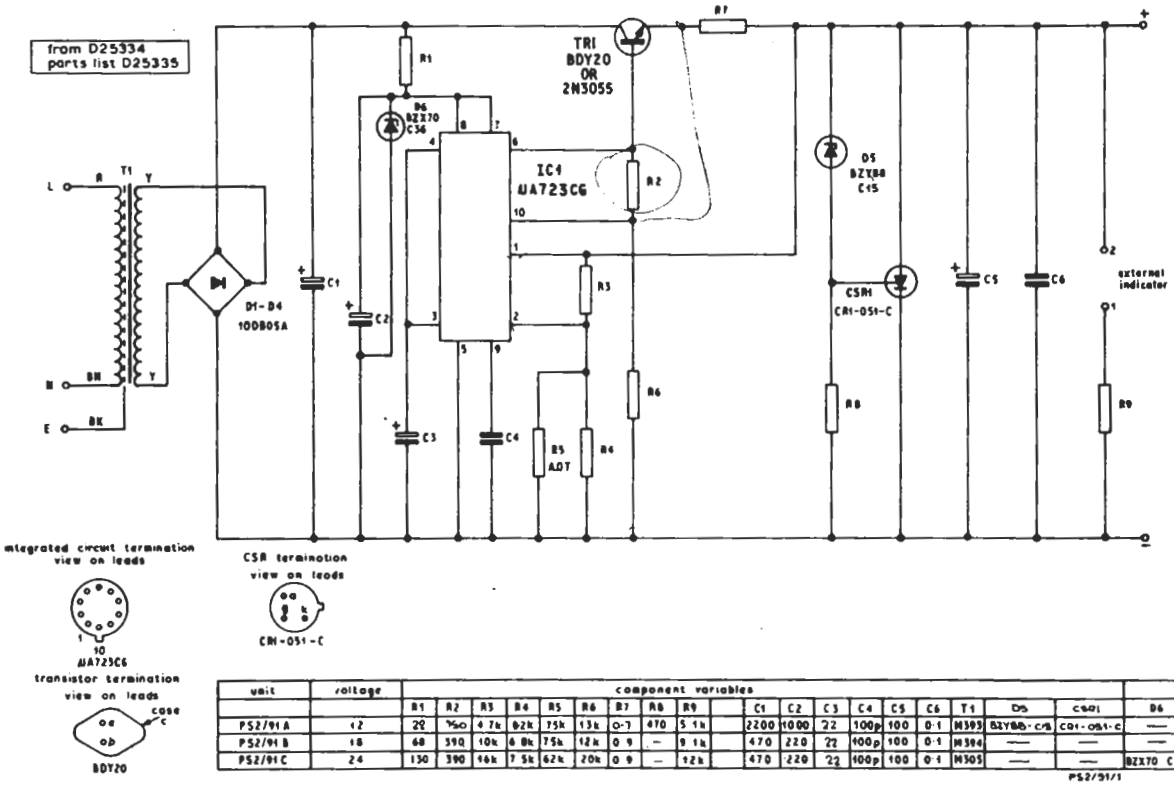
The PS2/91 and PS2/92 series of stabilised power suppliers supersede the PS2/22 A, B and C. The PS2/93A—V supersedes the PS2/13 and PS2/21 series, each consisting of two units from the PS2/91, PS2/92 series. All the supplies have feedback short-circuit current limiters and the PS2/91A and PS2/92A and B have over-voltage protection.

Each PS2/91 or PS2/92 is built onto a printed board and occupies one half of a CH1/12A chassis. Each of the PS2/93 series occupies a full CH1/12A chassis.

General Specification

Mains Input	240 V ±7½%, 50 Hz
Short Circuit Current	25% of full load
Short Circuit Current Limiting starts	130% of full load current
Over Voltage Protection, max. output voltage	125% of nominal
Working Temperature Range	0C to 45 C
Max. Temperature Rise of Heat Sink (above ambient)	45°C
Thermal Stability	1 mV per °C
Regulation (±7½% mains variation)	0·1%
Performance	see table

Nominal Output Voltage V	PS2/93A-V see Fig. 3	PS2/91A 12	PS2/91B 18	PS2/91C 24	PS2/92A 5·25	PS2/92 B 6
Nominal Rated Current mA		650	450	350	1000	1000
Ripple Content at Full Load mV p-p		1	2	2	2	2
Noise (mV p-p)		2	2	3	2	2
Output Impedance (ohms) d.c.		0·07			0·05	
10kHz		0·07			0·07	
100kHz		0·15			0·15	
1MHz		1·0			1·0	
3MHz		3·0			3·0	



integrated circuit termination
view on leads

1 10
UA723CG

transistor termination
view on leads

BDY20

CSR termination
view on leads

CR1-051-C

unit	voltage	component variables																			
		R1	R2	R3	R4	R5	R6	R7	R8	R9		C1	C2	C3	C4	C5	C6	T1	D5	CSR1	D6
PS2/91A	12	22	750	4.7k	82k	75k	13k	0.1	470	5.1k		2200	1000	22	100p	100	0.1	M393	BZY88-C/8	CR1-051-C	—
PS2/91B	18	68	390	10k	6.8k	75k	12k	0.9	—	9.1k		470	220	22	100p	100	0.1	M394	—	—	—
PS2/91C	24	130	390	16k	7.5k	62k	20k	0.9	—	12k		470	220	22	100p	100	0.1	M305	—	—	BZX70 C36

PS2/91/1

Fig. 1. Power Supplier PS2/91

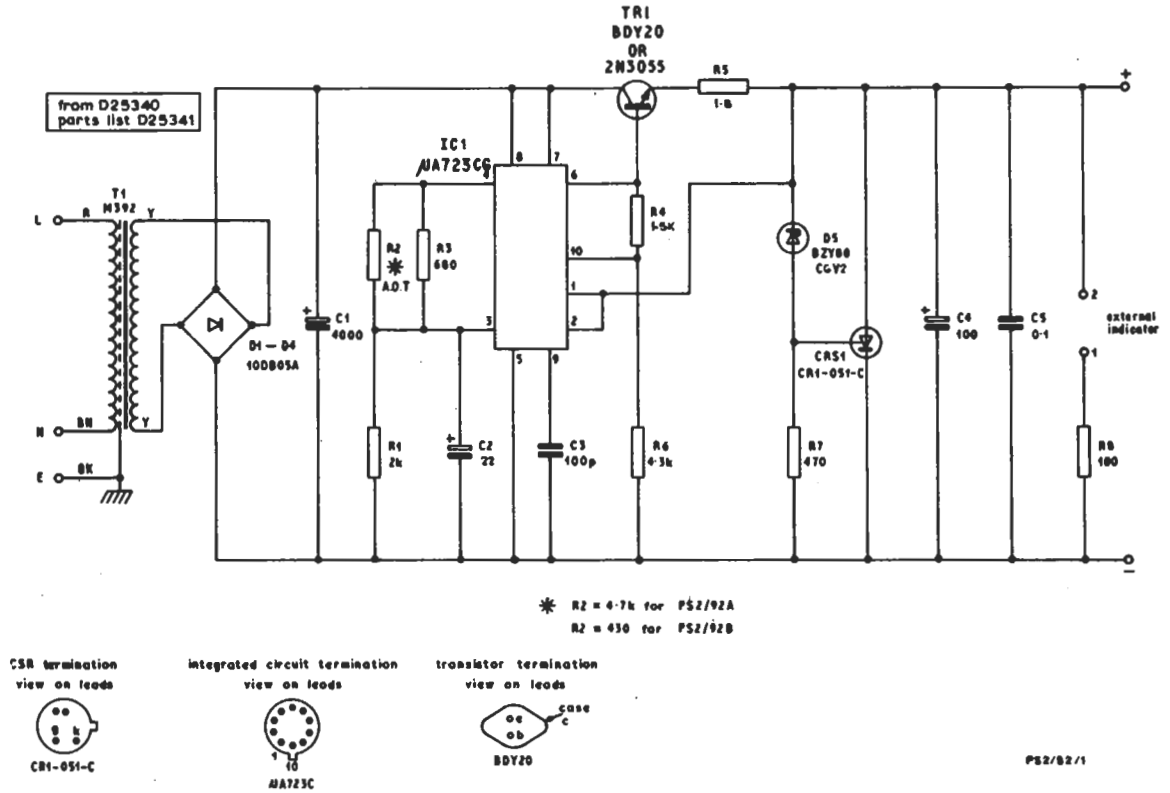


Fig. 2. Power Supplier PS2/92

Circuit Description

The circuit diagrams of the suppliers are given in Figs. 1, 2 and 3.

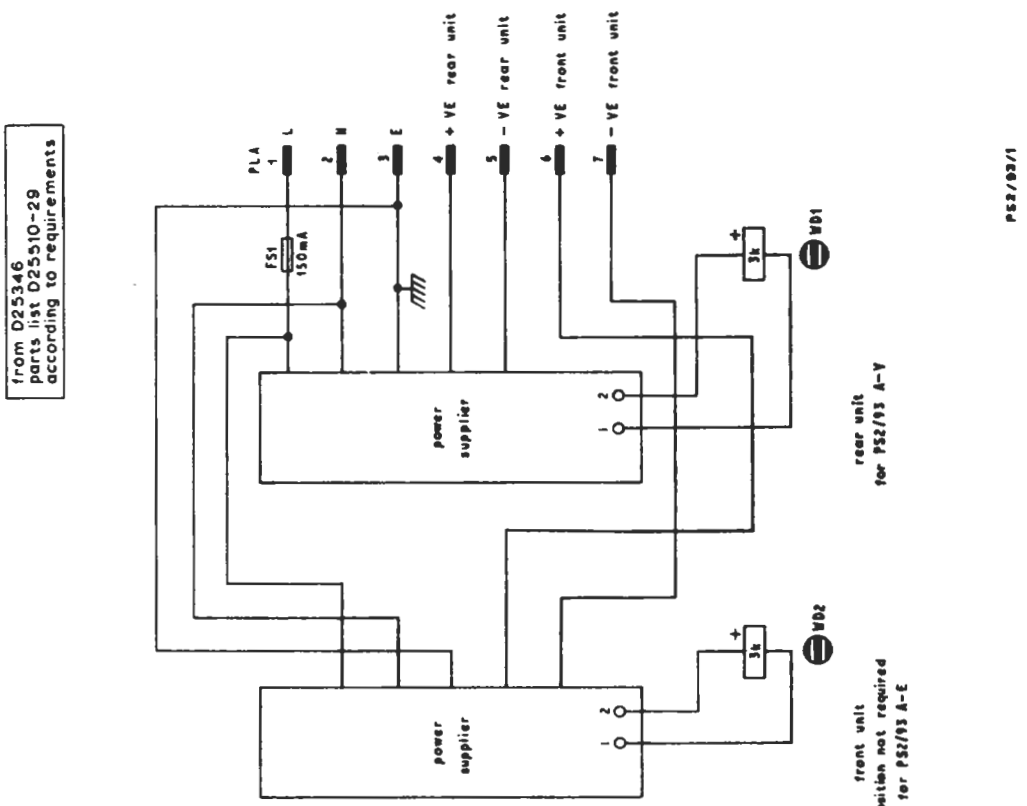
The output voltage is set to be within ±25 mV of the nominal value by adjustment of R2 (PS2/92) or R5 (PS2/91).

Overload protection is given by reduction of current drive to the base of the series regulator TR1, which follows any undue rise of voltage across R5 (PS2/92) or R7 (PS2/91).

The over-voltage protection is given by CRS1 with D5 and R7 (PS2/92) and CRS1 with D5 and R8 (PS2/91). If the voltage across R7 or R8 rises sufficiently, the CRS1 conducts and short-circuits the output. The overload protection then operates and the current is limited to 25% of full load. To reset the over-voltage circuit, the mains power must be removed for a few seconds.

References

1. PS2/91 Designs Department Specification No. 7.170(69).
2. PS2/92 Designs Department Specification No. 7.171(69).
3. PS2/93 Designs Department Specification No. 7.172(69).



PS2/93	Permutation of PS2/91 A-C & PS2/92 A-B	index peg	power suppliers output voltage	
			rear	front
A	PS2/91A only	31 39	12	
B	PS2/91B only	31 40	18	
C	PS2/91C only	32 34	24	
D	PS2/92A only	32 35	5·25	
E	PS2/92B only	32 36	6	
F	PS2/91A PS2/91B	32 37	12	18
G	PS2/91A PS2/91C	32 38	12	24
H	PS2/91A PS2/92A	32 39	12	5·25
J	PS2/91A PS2/92B	32 40	12	6
K	PS2/91A PS2/91A	33 35	12	12
L	PS2/91B PS2/91C	33 36	18	24
M	PS2/91B PS2/92A	33 37	18	5·25
N	PS2/91B PS2/92B	33 38	18	6
P	PS2/91B PS2/91B	33 39	18	18
Q	PS2/91C PS2/92A	33 40	24	5·25
R	PS2/91C PS2/92B	34 36	24	6
S	PS2/91C PS2/91C	34 37	24	24
T	PS2/92A PS2/92B	34 38	5·25	6
U	PS2/92A PS2/92A	34 39	5·25	5·25
V	PS2/92B PS2/92B	34 40	6	6

Fig. 3. Power Supplier PS2/93

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