

STABILISED POWER SUPPLIER PS2/504

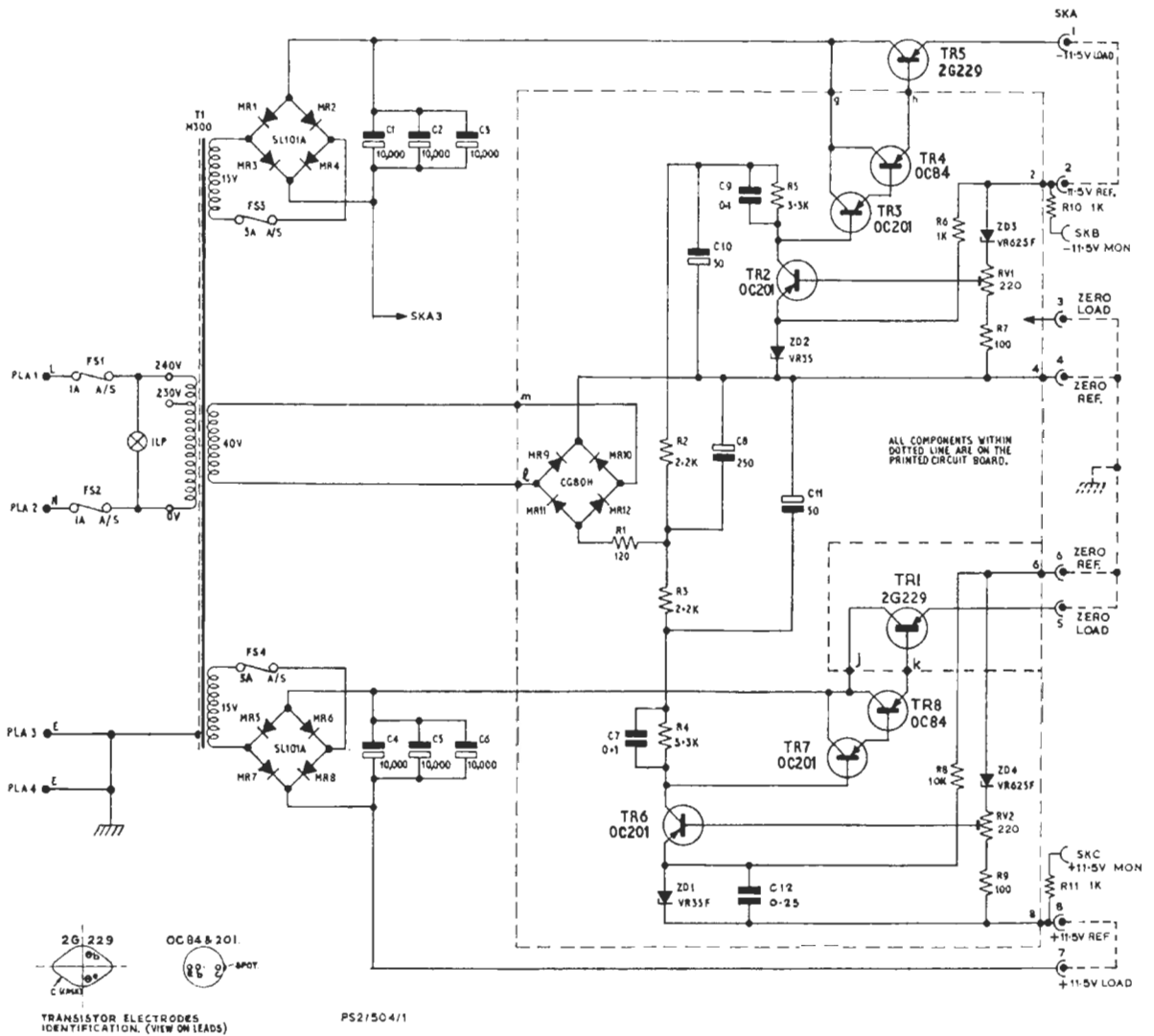


Fig. 1. Circuit of the PS2/504

Introduction

This unit provides outputs at +11.5 volts and -11.5 volts, both at 4 amps, from a mains input. The power supplier is an integral part of the Video Matrix PA9/504.

Circuit Description

The circuit of the PS2/504 is given in Fig. 1. Each stabilised supply has an output impedance of

5 milliohms and, to make full use of this, the amplifiers associated with each power supply are provided with separate terminals and connected to points on the matrix unit, adjacent to the fuse panels, at which this low output impedance is required.

Positive and negative supplies have identical circuits and so only the negative supply is described in detail.

An a.c. supply at 15 volts is rectified by a full-wave bridge circuit using MR1-MR4 and the output is smoothed by capacitors C1, C2 and C3. A low-impedance output is provided by the compound emitter-follower TR3, TR4 and TR5. Variations in voltage across the load are applied to the base of the shunt amplifier TR2. The reference voltage is obtained from a Zener diode ZD2 and is applied to the emitter of TR2. The load potential variations are direct-coupled to the base of TR2 using Zener diode ZD3.

To give TR2 a reasonable internal gain, the remote end of the collector load R5 is taken to a

more negative potential than that existing on the collectors of TR3-TR5. This is provided by the full-wave bridge rectifier MR9-MR12 which is fed from a 40-volt winding on T1. The positive side of this subsidiary supply is taken to the positive line of the main negative supply. Since pins 3, 4, 5 and 6 of SKA are normally connected together and earthed on the main PA9/504 chassis, the positive side of the subsidiary supply is also connected to the negative end of the positive supply. This results in there being a higher potential across R4 than across R5 but, in practice, this is not significant.

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