VIDEO MATRIX INPUT AMPLIFIER AM1/514

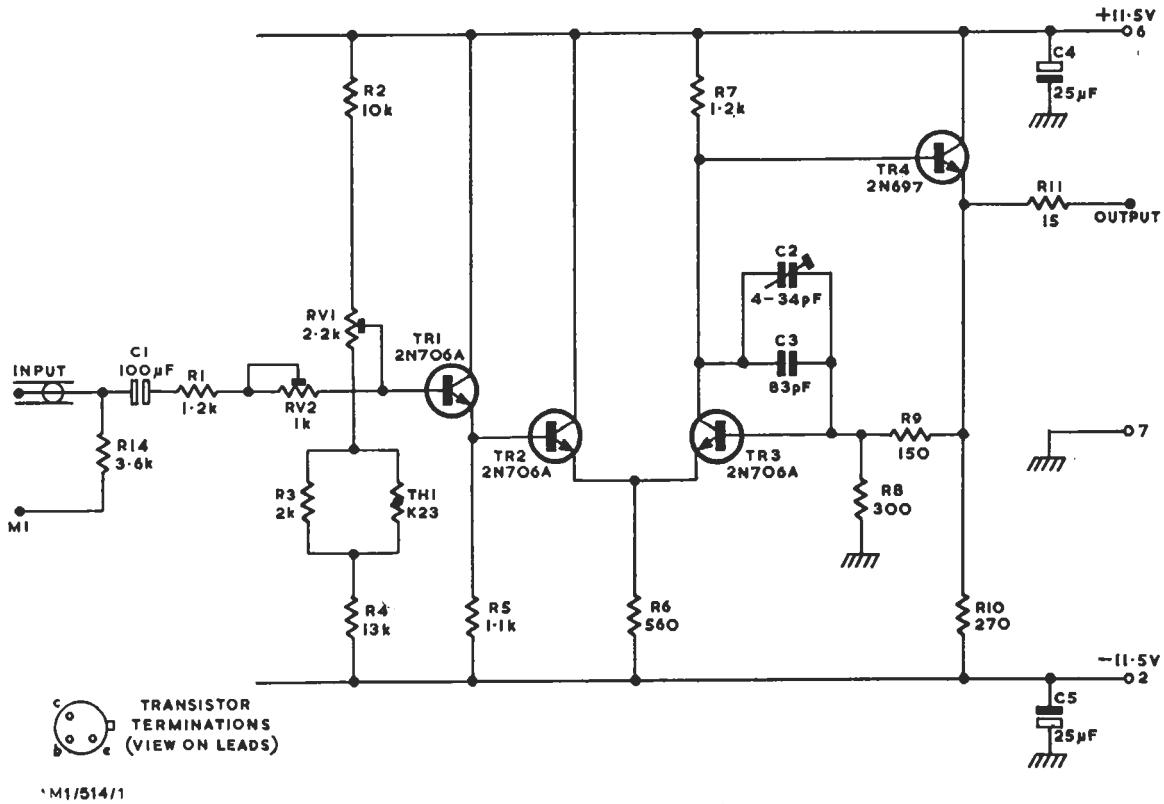

Fig. 1. Circuit of the AM1/514

Introduction

The AM1/514 was designed as an isolating amplifier for use with a relay panel PA17/505 a number of which are used to make a video-signal routing matrix PA9/504. It has a high input impedance to enable several units to be connected in parallel to the same video source; it has a low output impedance to enable each relay panel to feed several destinations simultaneously. The amplifier is constructed on a special chassis and is bolted directly to the relay panel.

Circuit Description

The circuit of the AM1/514 is given in Fig. 1. The amplifier is direct-coupled and uses npn silicon transistors. It will handle either colour or monochrome video signals on the 405-line, 525-line and 625-line standards. The input impedance is about 8 kilohms, the output impedance is 15 ohms and the normal load is 150 ohms in parallel with 560 pF. The gain is 0 dB.

The input signal is fed through the fine gain control RV2 to the two cascaded emitter followers TR1 and TR2 which provide the high input impedance. Transistors TR2 and TR3 form an emitter-coupled pair and the signal developed at the collector of TR3 is fed to the base of TR4 which is the output emitter-follower. Negative feedback is taken from the emitter of TR4 and applied to the base of TR3 via the potential divider chain R9 and R8.

RV1 controls the d.c. potential on the base of TR1 and is adjusted to bring the mean potential at the output of the amplifier to zero. Maintenance of the d.c. conditions at the output depends on the circuit being temperature-compensated; this is achieved by means of thermistor TH1 which varies the bias of TR1 according to the ambient temperature. Capacitors C2 and C3 control the high-frequency response of the amplifier.

A balanced power supply of $\pm 11{\cdot}5$ volts is required from a stabilised power supply. Because of the resistance of fuses (approximately 4 ohms) the supply rails are decoupled to earth. Current consumption is 90 mA from each rail.

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