

### PULSE MATRIX OUTPUT AMPLIFIER AM1/513

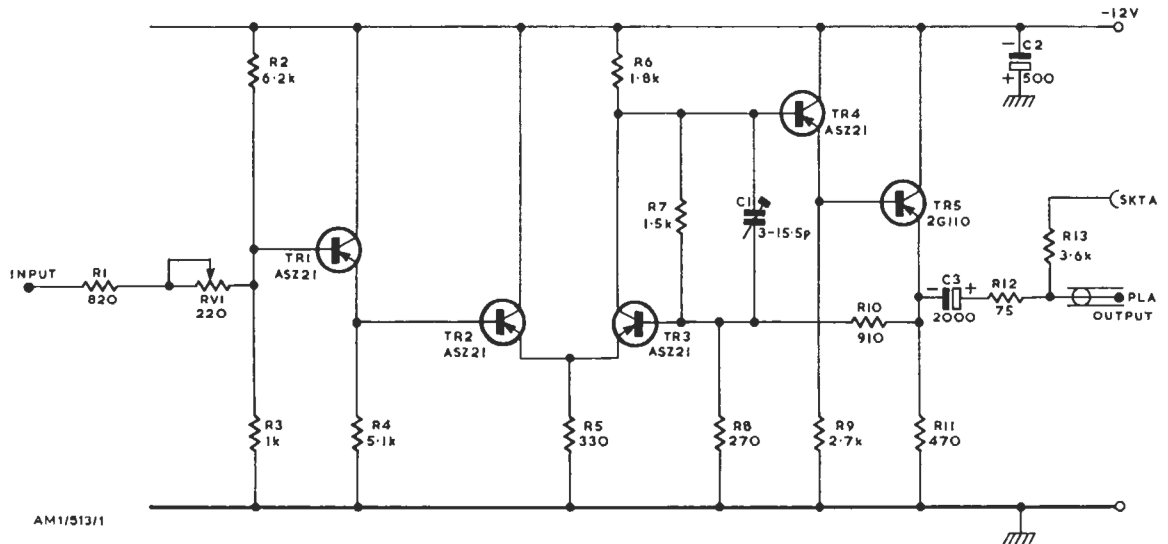


Fig. 1. Circuit of the AM1/513

#### Introduction

The AM1/513 was designed as an isolating amplifier to accept the pulse signal from an output bus-bar of a Matrix Unit PA9/503 and to provide a 75-ohm output. The amplifier is constructed on a special chassis which is bolted to the frame of the Matrix Unit.

#### Circuit Description

The circuit of the AM1/513 is given in Fig. 1. This is a direct-coupled amplifier using germanium pnp transistors. The input impedance is 1.8 kilohms, the output impedance is 75 ohms and the gain is 0 dB.

The input signal is fed through R1 and RV1 to the base of TR1. R1 provides isolation for other destinations if amplifier failure results in a short-circuit; RV1 is a fine gain control. The bias

chain R2-R3 maintains the potential at the base of TR1 at about 2.5 volts when connected to an input amplifier and about 1.6 volts when not connected.

TR1 is an emitter-follower and feeds the signal to the base of TR2; transistors TR2 and TR3 form an emitter-coupled pair and the signal developed across the collector load of TR3 is applied to the base of TR4. The emitter of TR4 is connected to the base of TR5 and the two transistors form a compound emitter-follower output stage. Negative feedback from the emitter of TR5 is applied to the base of TR3; this feedback reduces the output impedance of TR5 to a fraction of an ohm so that the effective output impedance of the amplifier, provided by R12, is 75 ohms.

Power is required from an external -12 volt supply at about 30 mA.

TES 9/65