

ISOLATING AMPLIFIER AM1/43

General

The AM1/43 is a subunit originally fitted on telephone panels in the Type-D range, for example the PA8/308. It is for use in cue programme feeds, to prevent the accidental paralleling of the ring mains, in circuits with multiple source selection. It has a high input impedance and requires a high-impedance load, and in these conditions provides a gain of about 0 dB.

The amplifier is constructed on a printed circuit board with dimensions of 3 by 2 inches, and is mounted by four 6-BA screws on centres of 2½ by 1½ inches.

D.C. Test

Connect the power supplier to terminals 5 and 6 (positive) with the Avometer in series. The current consumption should be 17.5 ± 2 mA.

A.C. Tests

1. Apply 1-kHz tone at 0 dB to terminals 1 and 2. Measure with high-impedance ATM/1 on terminals 3 and 4. The level should be 0 dB +0 -1 dB. Increase the input and, using the oscilloscope across the output terminals, observe the point at which clipping occurs. This should be

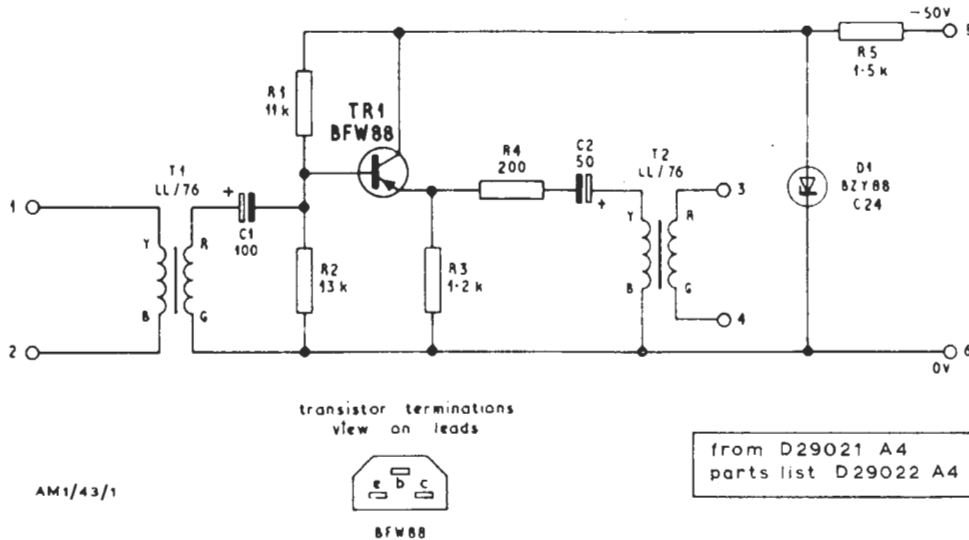


Fig 1. Circuit of the AM1/43

Circuit Description (Fig. 1)

The amplifier is a conventional single-transistor emitter-follower stage working between Type-LL/76 input and output transformers. It operates from a normal 50-volt power supply, the working voltage being derived from a 24-volt zener diode in series with a 1.5-kilohm resistor R5.

Test Procedure

Apparatus Required

- Tone source TS/10
- Amplifier test meter ATM/1
- 50-volt d.c. power supplier
- Oscilloscope
- Avometer Model 8
- 300-ohm resistor

- not less than +16 dB.
- 2. Repeat the gain measurement at 30 Hz and 10 kHz. The limits are:
30 Hz: 0 dB +0 -1.5 dB
10 kHz: 0 dB +0 -1 dB
- 3. Remove the tone and connect the 300-ohm resistor across terminals 1 and 2. Measure the noise at terminals 3 and 4 using the T.P.M. section of the high-impedance ATM/1. The noise volume should not be greater than -80 dB with respect to a peak reading of 6 on the meter.
- 4. Apply 1-kHz tone at 0 dB to terminals 3 and 4. Measure the level across the 300-ohm resistor on terminals 1 and 2. The level should not exceed -40 dB.

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