ACKNOWLEDGEMENT SIGNAL GENERATOR GE1/5 AND 5A

Introduction

The GE1/5 and 5A generate 1·5-kHz two-volt p-p tone which can be fed to a Post Office telephone line[1]. The generator is built in a diecast aluminium box. The difference between the two versions is in the position of a pushbutton switch which operates the unit; in the GE1/5 the button is integral with the unit, whereas a remote button is used with the GE1/5A. Power is supplied by an internal mercury battery.

Test Procedure

1. Check that the battery potential is at least seven volts.
2. Connect the 300-ohm resistor across the output terminals.
3. Operate on/off switch S1.
4. Check that the frequency of the output is between 1490 and 1500 Hz. Resistor R2 (with 2-per-cent tolerance) is selected to obtain the correct frequency.

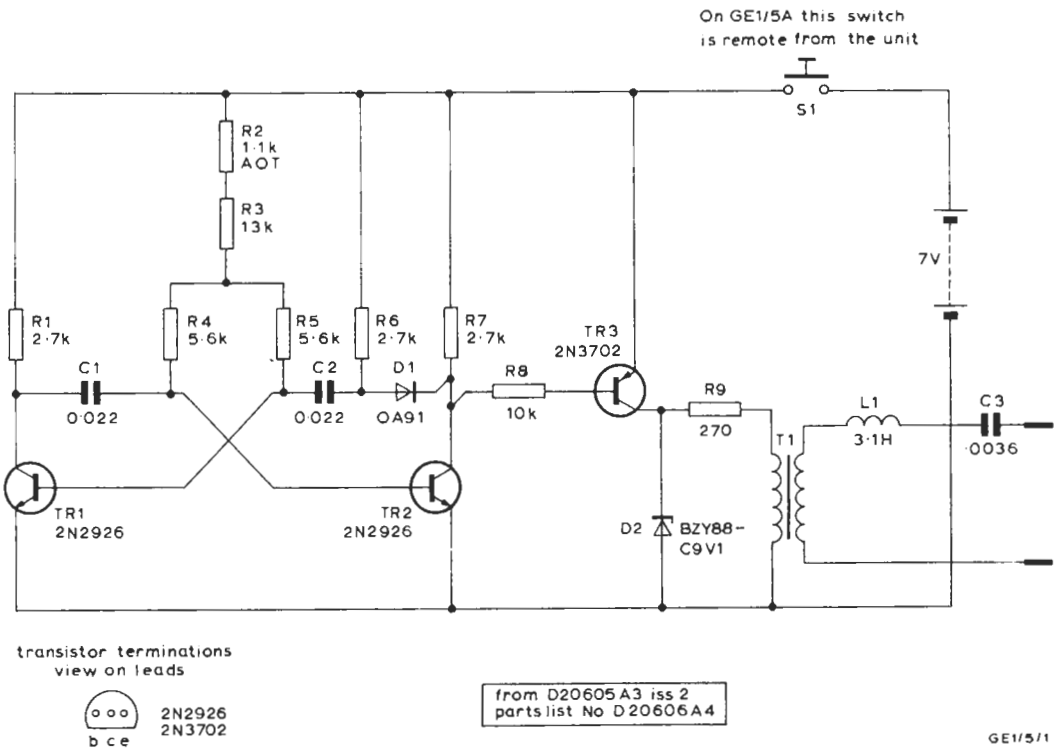

Fig. 1. Circuit of the GE1/5

Circuit Description (Fig. 1)

Fig. 1 is a circuit diagram of the GE1/5 and GE1/5A. The generator comprises a conventional astable multivibrator TR1 and TR2. Transistor TR3 is a common-emmiter amplifier the collector load of which is an isolating transformer T1. L1 and C3 form a series tuned circuit resonant at 1·5 kHz. The output, into a 300 ohm load, should be a sine wave with the second and third harmonic components at least 30 dB below the fundamental.

Test Schedule

Apparatus Required

Oscilloscope
High-impedance valve voltmeter (ATM/1)
Avometer Model 8
300-ohm resistor

5. Adjust choke L1 for maximum output measured across the 300-ohm resistor, and check that the level is between −2 dBm and −4 dBm.
6. Remove the 300-ohm resistor.
7. Check that an open-circuit resistance measurement is obtained across the output terminals.

References

1. Automatic Fault Reporter PA2M/7A.

LPB 7/72