VARIABLE INDUCTANCE FREQUENCY MODULATOR MD3/2

The MD3/2 accepts a phase-split modulating frequency input and produces a frequency-modulated output with a centre frequency of 2·6 MHz. The modulator, including its output amplifier, is constructed on a printed circuit board and is normally maintained at a constant temperature in an oven which forms part of the parent unit[1,2].

General Specification

Modulation Frequency Range	30 Hz-53 kHz
Input Level	About 2 volts p-p for ±75-kHz deviation
Input Impedance	600 ohms balanced Note: D.C. bias potentials are present at the input terminals when power is applied to the modulator
Output Centre Frequency	2·6 MHz
Output Level	Typically 120-200 mV p-p when terminated by 75 ohms
Output Impedance	75 ohms unbalanced
Power Requirement	About 20 mA at 12 volts

Circuit Description

The modulator circuit is shown in Fig. 1. The f.m. oscillator comprising TR1 to TR4 stages is fully described in Designs Dept Technical Memorandum No. 12.12(67): The Variable Inductance Frequency Modulator, Theory and Design. The oscillator output is taken from the junction of R7 and R8 to a three-transistor buffer amplifier TR5 to TR7. Adjustment of an MD3/2 is done as part of the overall setting-up procedure applicable to its particular parent unit.

Test Note: The a.m. content in the MD3/2 output may be much higher than indicated by the specification of the parent unit. The overall performance is maintained because the modulator is usually followed by successive limiting stages.

References to Typical Association Equipment

1. Modulator and Oven Unit UN22/1
2. V.I.F.M. Drive Equipment EP7/7

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See page 3 for Fig. 1

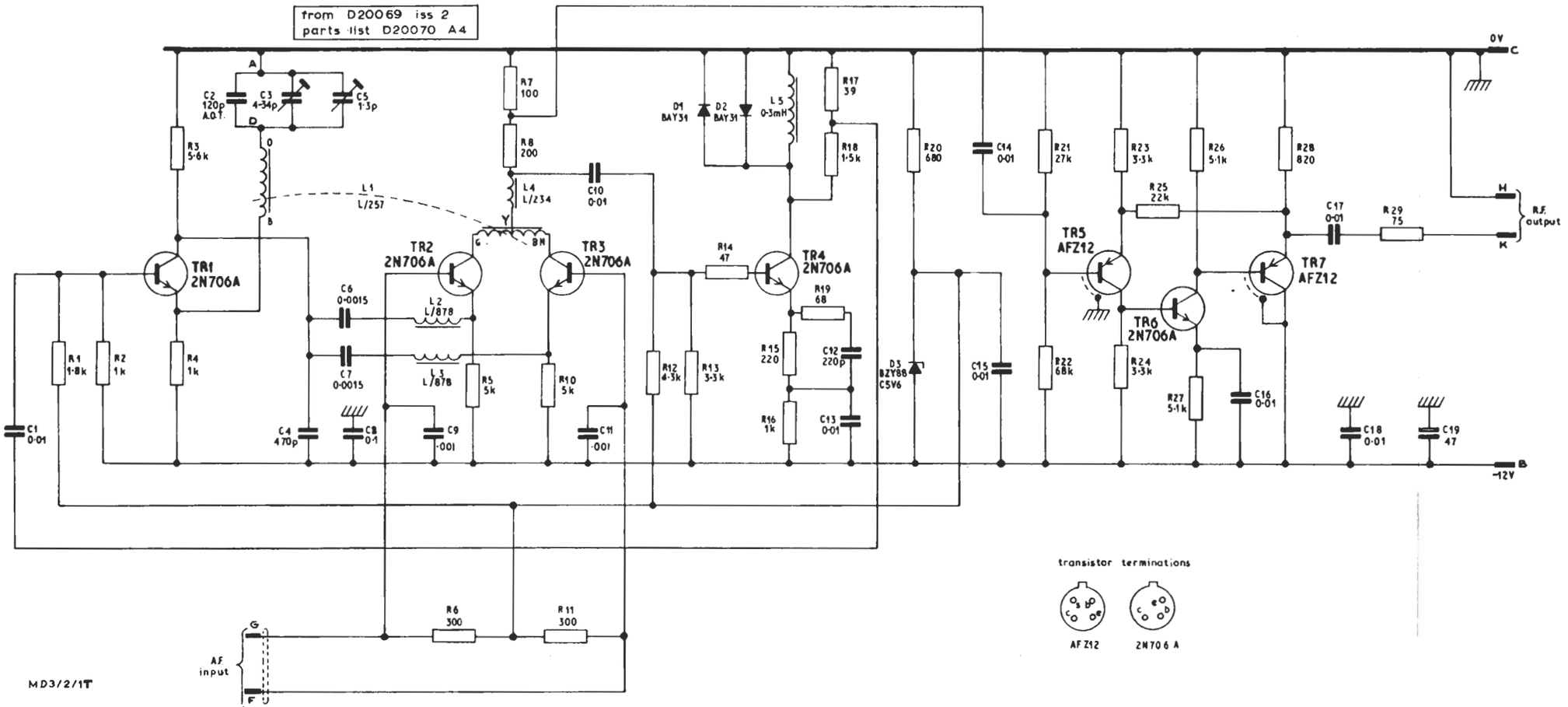

Fig. 1 Circuit of the MD3/2