

SQUARE WAVEFORM GENERATORS GE6/501 AND GE6/501A

Introduction

Both the GE6/501 and the GE6/501A generate 11-kHz square waves with a 1:1 mark/space ratio¹. The output level is 1 volt p-p at an impedance of 75 ohms. Both units are constructed on printed-wiring cards and require a power supply of -18 volts².

The GE6/501A supersedes the GE6/501 and can be used as a direct replacement for it. The change in design has been necessary because of changes in the specification of MR2A zener diodes; when fitted with recently manufactured diodes of this type the original circuit has not been satisfactory.

Circuit Description GE6/501

A circuit diagram is given in Fig. 1. Transistors TR1 and TR2 form a free-running multivibrator with an operating frequency of about 11 kHz. If required the oscillator can be synchronised to an external waveform by applying negative-going trigger pulses to the base of TR1. If this is done the value of C4 must be adjusted to make the free-running frequency of the generator slightly lower than the frequency of the locking waveform.

The oscillator output is taken from the collector of TR2 and fed, via buffer amplifier TR3, to the common-emitter output stage TR4-TR5. Zener diode D1 stabilises the signal amplitude at the base of TR4.

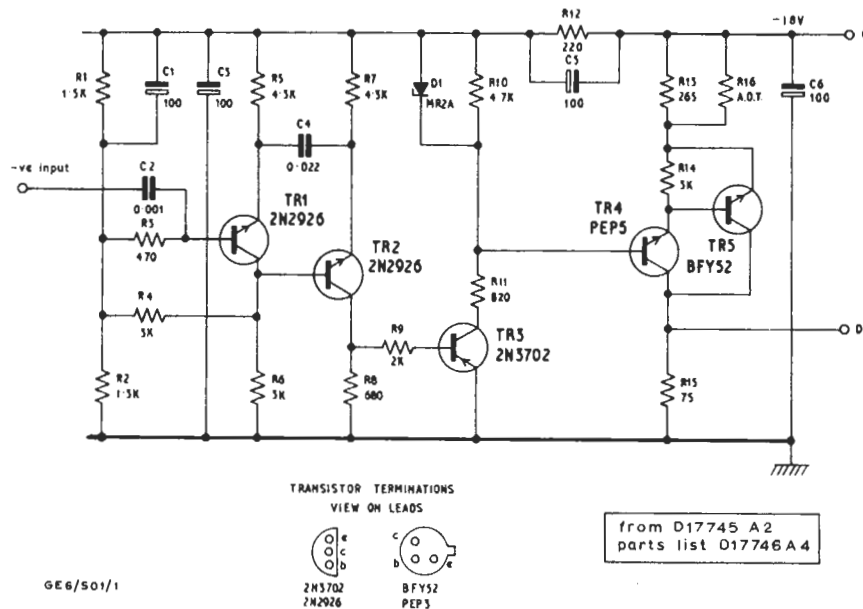


Fig. 1 Circuit of Square Waveform Generator GE6/501

Circuit Description GE6/501A

A circuit diagram is given in Fig. 2. The four AND gates contained in integrated circuit IC1 form a free-running multivibrator with an operating frequency of 11 kHz. The waveform developed in the integrated circuit is fed via buffer amplifier TR2 to the base of TR3, at which point the signal amplitude is stabilised by zener diode D2. The output is taken from the collectors of TR3 and TR4.

Transistor TR1 acts as a voltage stabiliser in con-

junction with zener diode D1 and holds the voltage across the integrated circuit at 6.2 volts.

The GE6/501A, unlike the GE6/501, does not have a trigger input; however, one can readily be provided, if required, by using input 2 of the first AND gate.

References to Typical Associated Equipment

1. Colour Calibrator UN2/503.
2. Stabilised Power Supplier PS2/22C.

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Fig. 1. Circuit of the Square Waveform Generator GE6/501A

