

SECTION 19

PULSE GENERATOR GE2/519

Introduction

The GE2/519 accepts a feed of mixed-sync pulses and produces:

- (a) amplified positive-going sync pulses
- (b) wide clamping pulses
- (c) narrow clamping pulses

See also AM3/503, AM18/513 (Instruction V.7) and GE2/504.

The unit is constructed on a CH1/12A chassis with index peg positions 4 and 25. Power supplies at +12 volts, +4 volts and -4 volts are obtained from a PS2/10A Stabilised Power Supplier (Instruction G.2).

General Specification

See AM18/513, Instruction V.7.

Circuit Description

A circuit diagram is shown in Fig. 19.1.

Incoming mixed-syncs are applied, via inverter-amplifier TR1, to the base of TR2. Transistors TR2 and TR3 form an emitter-coupled window or slicer stage in which both positive and negative extremities of the signal are clipped. Two outputs are taken from TR3; the signal appearing at the collector constitutes the sync pulse output of the unit and the signal which appears at the junction of R11 and R12 is fed to the base of TR4.

Emitter-follower TR4 drives a series-connected delay network comprising delay-lines DN1 and DN2. Each line has a delay of 1.0 μs and is tapped at 0.2 μs intervals; the output of DN2 is connected to the +4 volt line and is thus short-circuited to

signals. A positive-going voltage pulse transmitted along the delay network is inverted in polarity on reaching the short-circuit and reflected back to the emitter of TR4, which it reaches 4 μs after the start of the pulse. Thus the waveform at the emitter of TR4 consists of 4- μs pulse followed after a short period by a 4- μs negative pulse.

A signal is taken from the 0.8- μs tap on DN1 and fed to the base of TR6. This signal starts 0.8 μs later than, and finishes 0.8 μs sooner than, the signal at the emitter of TR4; consequently it has a duration of 2.4 μs . Thus signals with a pulse duration of 2.4 μs are produced at the emitter of TR6, these constitute the wide clamp pulse output of the unit. Only the negative-going pulse is used, the residual positive-going pulse is removed in the subsequent unit.

A second signal, taken from a tap 0.4 μs further along the delay line, is applied to the base of TR5; the pulses at this point have a duration of 1.6 μs . The pulses produced at the emitter of TR5 constitute the narrow clamp pulse output of the unit. As before, the residual positive-going pulse is removed in the subsequent unit.

Specification

See AM18/513, Instruction V.7.

Maintenance

See AM18/513. The waveforms shown in Fig. 19.1 are for 405-line operation and represent conditions when the unit is functioning as part of a stabilising amplifier.

TES 2/67

See overleaf for Fig. 19.1

Instruction V.10
Part 2, Section 19

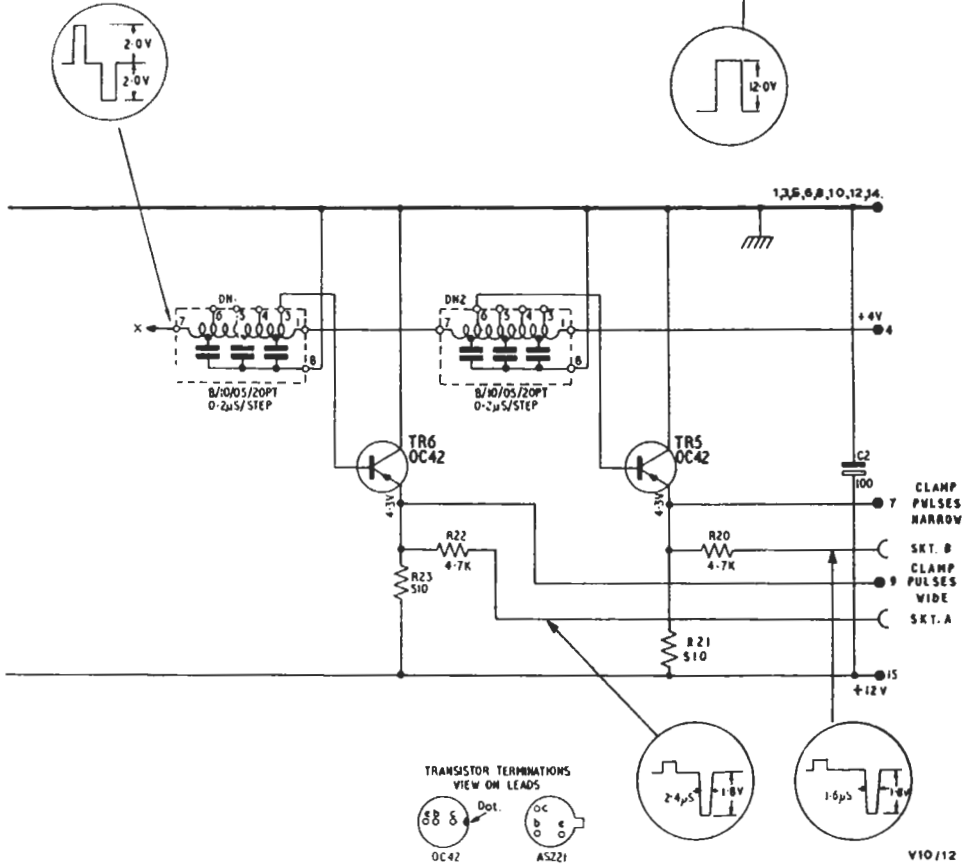
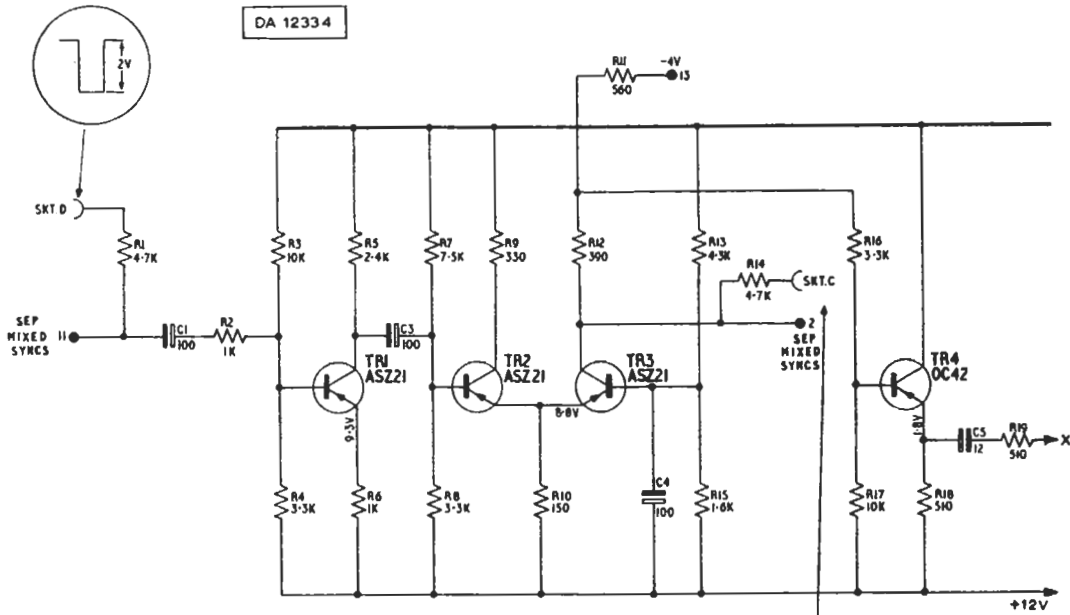


Fig. 19.1 Circuit of the GE2/519