

ideal
keyed
fast-clamp
DC restorer

Fig. 5-8 illustrates a keyed fast-clamp DC restorer very closely approaching the ideal circuit of Fig. 5-6. Through the use of semiconductors, most of the design trade-offs of the previous circuit are not necessary. As in the previous two circuits, the composite video waveform is applied to C1 from a low-impedance source -- in this case an emitter follower. Quiescently, the discharge path for C1 is the combined reverse leakage of D1-D2 and the FET gate. D1 and D2 are low-leakage diodes which, combined with the very low reverse leakage of the FET gate, provides a long discharge time constant between keying pulses. D3 and D4 are both 3-volt zener diodes, reverse-biasing D1 and D2 enough to prevent composite video from forward biasing D1 and D2. When a pulse is applied to the primary of the transformer D1 and D2 conduct. The charge path for C1 is now the source impedance of the emitter-follower (emitter resistance) and the forward resistance of D1 and D2 -- providing a charge time constant of about 1 μ s.

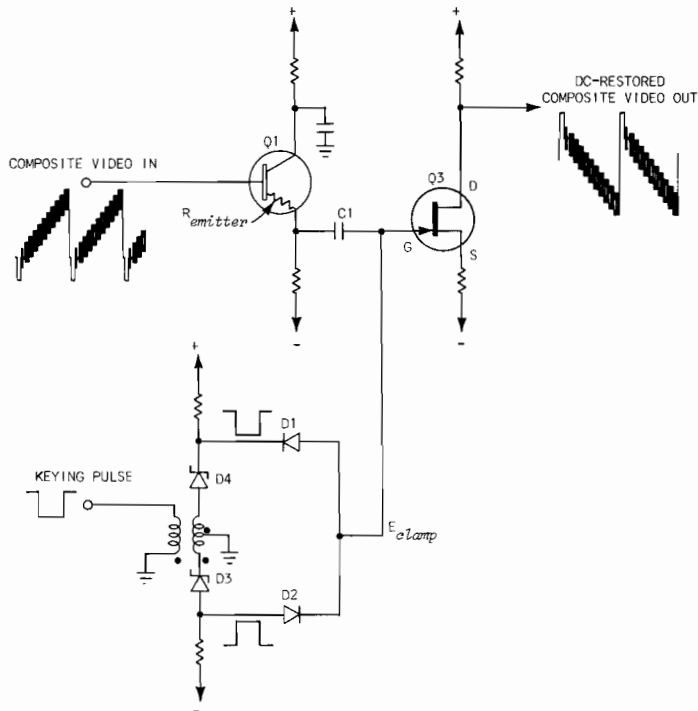


Fig. 5-8. Transistorized keyed clamp circuit-- fast restorer.