of pulses, adjustably spaced in times T_1 through T_4.

This application envisions as a pulse generator one that consists of a 50-ohm charge line operated with a mercury-wetted reed switch.

GR874 Air Lines can be used for minute delays (up to 1 ns), and GR874 Attenuators are available to achieve compensatory losses, where required, for pulse bursts of uniform amplitude.

The TYPE 874-G6 (6 dB or 2×) Attenuator bears the most convenient relation to the insertion loss in the divider.

Patch cords, ells, adaptors, and other elements needed to complete the system are available.

— THOMAS E. MACKENZIE

Credits

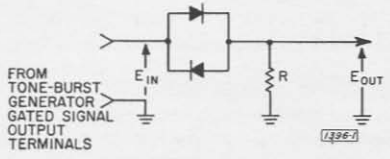
The writer gratefully acknowledges the contributions of time-domain applications of the GR874 elements provided by J. K. Skilling and D. S. Nixon, Jr. of the GR engineering staff.

MEASUREMENT BRIEFS

A Note on the Tone-Burst Generator Reduction of Gate Feedthrough

Some users of the TYPE 1396-A Tone-Burst Generator may require a ratio of open- to closed-gate signal greater than the 40 dB we specify (43 dB typical). It is not possible to modify the design of the instrument in this respect without sacrificing switching-noise suppression and gate speed (maximum frequency).

Addition of the circuit shown below, however, can reduce the feedthrough by introducing a small amount of distortion in the output. This circuit is an attenuator for small voltages (less than ±1 volt), and it passes other voltage levels with little attenuation. Since feedthrough is in the ±1-volt range, it is attenuated, but the desired signal (assumed at maximum level of ±7 volts) has only a small amount of distortion near the zero crossings. This distortion looks much like crossover distortion and may be quite acceptable in some applications.



With germanium diodes, 1N455-type, and a value of R of 1.0 kilohm, the feedthrough varies from −55 dB at 500 kc/s to −58 at 20 kc/s and below. With silicon diodes, 1N459A-type, and a value of R of 10 kilohms, the feedthrough drops to −63 dB at 500 kc/s, −77 dB at 20 kc/s, and less than −80 dB at 2 kc/s and below. The silicon diodes, however, introduce more distortion than the germanium diodes. By the addition of bias sources in series with the silicon diodes it should be possible to effect a compromise between distortion and attenuation of feedthrough.

— J. K. SKILLING