

Pulse generator for 63XX PROM programming

The Signetics 63XX series of PROMs offers high capacities and access times of about 55ns, so the devices are suitable for such applications as fixed colour palettes in a colour video display and chip enable decoding in memory arrays. The circuit shown generates the necessary pulses to burn one single fusible link inside a 63XX PROM and only requires two power supply rails.

The 6349-1 is a typical 63XX series device. It is a 512 x 8 bit memory with 9 address lines, 8 data lines, VCC, GND and a chip enable/program pin. All of the bits in the device initially start in the logic one state and can be irreversibly programmed to a zero with the application of two tightly specified programming pulses. In order to program a specific bit of a specific byte to a zero, the normal +5V is applied to the vcc line of the PROM and the address of the byte is set up on the address inputs. Then the two waveforms shown in figure 1 are simultaneously applied to the program pin and to the data output line of the bit to be changed to a zero. These pulses can be conveniently provided by the

accompanying circuit either under computer control or, for small amounts of data, by manual switches.

The pulse generator circuit, figure 2, is based around the constant current generator TR1. When the monostable is fired, TR2 enables the constant current generator and about 100mA is sourced into capacitor C3. This gener-

ates the ramp making up the rise of the programming pulse. When the voltage on C3 reaches 30.7V TR1 saturates and this causes the flat top of the programming pulse. After a further 20µs or so, the monostable expires, turning on TR3 which discharges C3 and forms the back edge of the pulse. Transistors TR4 and TR5

buffer the voltage on C3 so that current peaks of some 450mA can be provided to fuse the link in the PROM. These current peaks can be provided from a reservoir capacitor across C2 if the external supply for the +31.5V rail can only produce low currents.

*D. Greaves
Romsey
Hants.*

