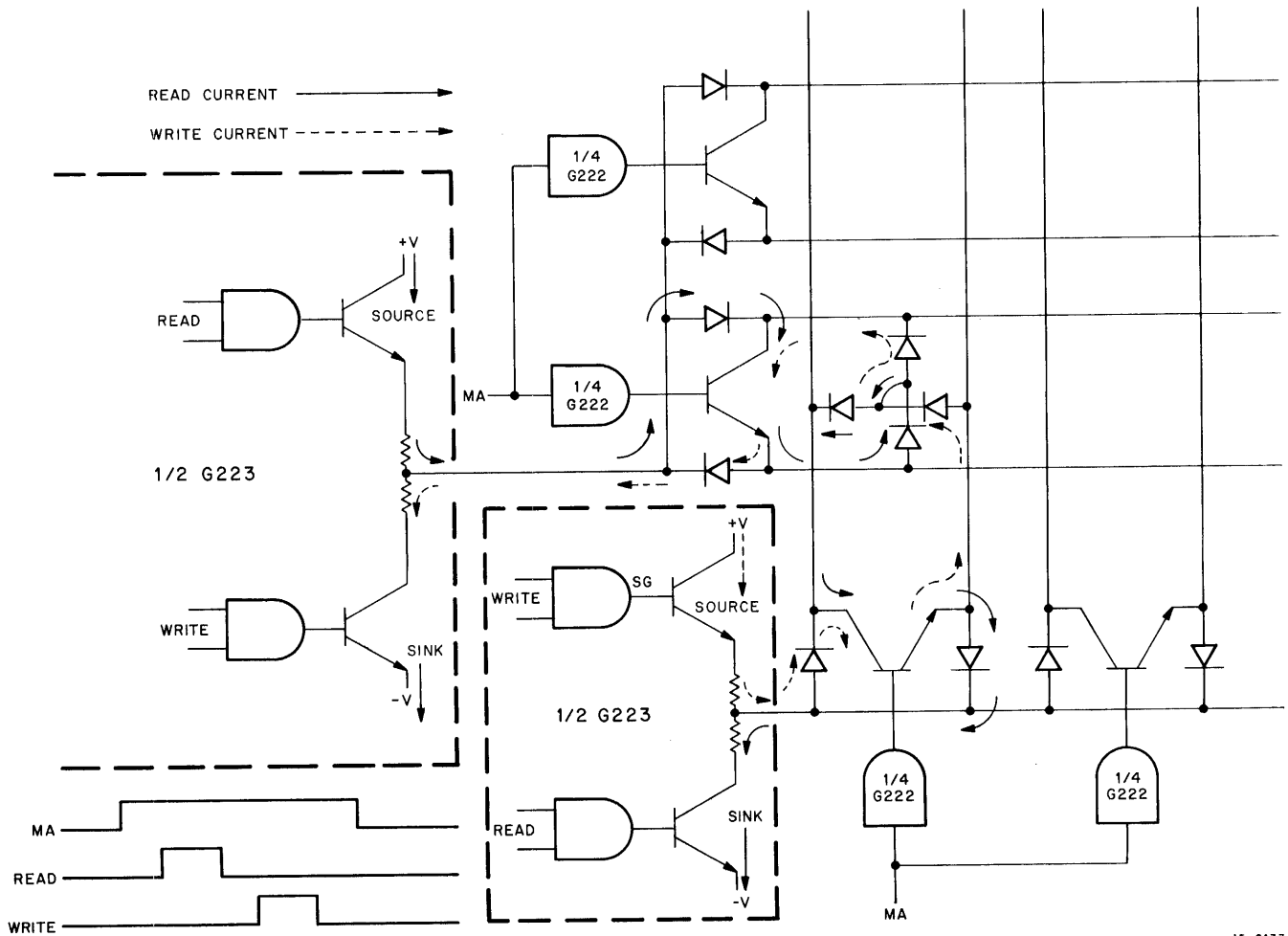


G223 Read/Write Driver

The G223 module contains two read/write drivers. Two of these modules are used in the PDP-15 for each 4K memory stack; one provides the drive for the X plane and the other provides the drive for the Y plane. (Refer to Engineering Drawings D-BS-MM15-0-6 and D-BS-MM15-0-7.) The G223 and G222 modules work together (see illustration) in that the current path selection through the core memory is established by the G222 modules, and



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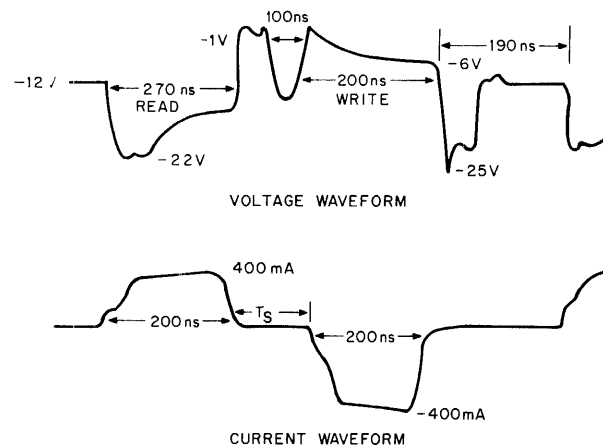
G223 Simplified Diagram

the drive current for reading and writing is supplied by the G223 module. Reading and writing currents travel in opposite directions. Each read/write driver consists of two input control NAND gates and two current switches connected in series with a common output. The read and write commands and the page select command are applied to the input control NAND gates, turning on the corresponding current switches and establishing a current path from ground to -24V. The balun network at the output of the driver ensures equality of input and output current through the stacks at all times.

The following are the input and output characteristics of the G223 module.

INPUTS: The READ and WRITE inputs (pins E1 and F1) each present 1.25 unit loads. The page-select input (pin D1) presents 2.5 unit loads.

OUTPUTS: The measured read/write voltage waveform and its current waveform for the worst case pattern take the form shown below for an 800 ns memory cycle time.



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G223 Current and Voltage Waveforms

The current-rise time to get to 400 mA for both reading and writing is approximately 100 ns, while the fall time is 40 ns. The stagger time (T_s) between read and write currents is approximately 130 ns.