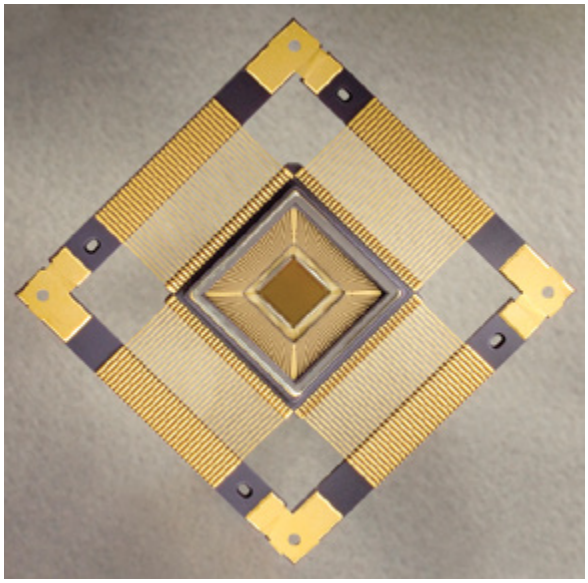
BAE SYSTEMS

1K x 36 synchronous FIFO first-in first out radiation-hardened memory



The 1K × 36 FIFO is a radiation-hardened, high-speed, low-power, first-in first-out memory with clocked read-and-write interfaces.

Description

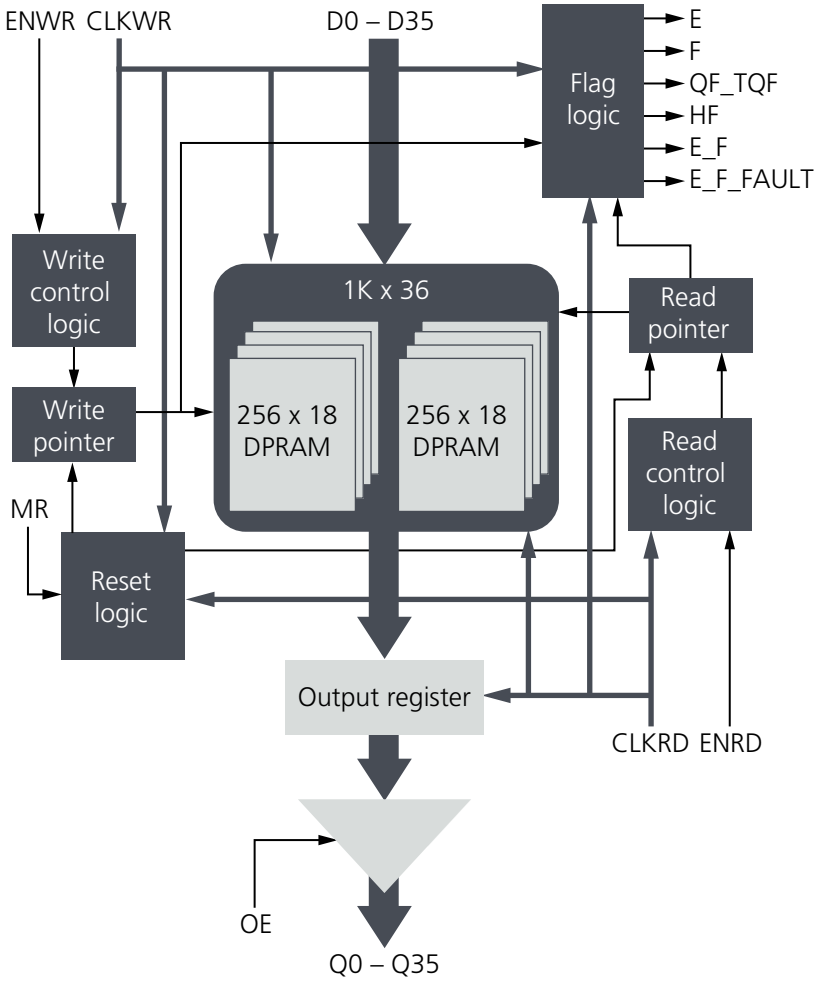
BAE Systems' FIFO provides solutions for a wide variety of data-buffering needs, including high-speed data acquisition, multiprocessor interfaces, and communication buffering. The company's complementary metaloxide semiconductor (CMOS) technology is radiation-hardened through the use of advanced and proprietary design-, layout-, and process-hardening techniques. The 1K × 36 FIFO is designed for use in systems operating in radiation environments.

Key features

- Standard microcircuit drawing #5962G08208
- Fabricated with radiation-hardened RH25 bulk CMOS 0.25 µm process
- Read/write cycle times 13 ns (75 MHz)
- Six flag outputs: empty, full, half full, one-quarter full, three-quarter full, and error
- Single 3.3V±10 percent power supply
- CMOS or transistor-to-transistor logic compatible cold spare I/O
- Radiation levels
  - TID >5×10^5 rad(Si)
  - SEU <1×10^{-9} upsets/bit day
- Dynamic and static transient upset hardness through 1×10^9 rad(Si)/s
- Dose-rate survivability through 1×10^{12} rad(Si)/s
- Neutron fluence >2×10^{13} rad (Si)
- Latchup immune ≤120 MeV-cm^2/mg

System definitions

Input ports are controlled by a free-running clock (CLKWR) and a write-enabled pin (ENWR). When ENWR is asserted, data is written into the FIFO on the rising edge of the CLKWR signal. While ENWR is held active, data is continually written into the FIFO on each CLKWR cycle. Output port is controlled by a free-running clock (CLKRD) and a read-enable pin (ENRD). In addition, the FIFO has an output enable pin (OE) and a master reset pin (MR). The read (CLKRD) and write (CLKWR) maybe tied together for single-clock operation, or the two clocks may be run independently for asynchronous read/write applications.



Specifications	
FIFO family of products	1K x 36 configuration
	132-lead quad flatpack

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