128K x 72 Radiation-Hardened Synchronous SRAM / L2 Cache

The 128K x 72 radiation-hardened, synchronous SRAM (SSRAM) is a high-performance, multi-mode, synchronous, static random access memory that is versatile, has wide I/O, and achieves 7.5ns cycle times.

It is fabricated with BAE Systems' radiation-hardened technology and is designed for use in systems operating in radiation environments. The SSRAM operates over the full military temperature range and requires a dual 3.3 V and 1.8V ±10% power supply. The SSRAM is available with CMOS-compatible I/O. Power consumption is typically less than 10 mW/MHz in operation.

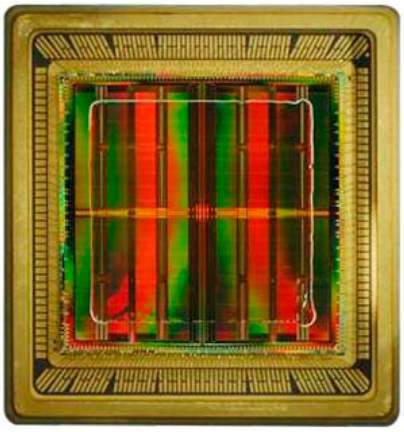
BAE Systems' enhanced bulk CMOS technology is radiation-hardened through the use of advanced and proprietary design, layout, and process hardening techniques.

FEATURES AND CHARACTERISTICS

- 128K x 72 synchronous SRAM multi-mode operation
  - Flow-through mode
  - Register-latch mode
  - Pipeline mode
  - Pipeline late-write mode
  - Burst mode with pipeline late-write
  - DQM mode
  - ZZ mode
- Access times
  - Read and write cycle times ≥166MHz
- Technology
  - 0.15 µm bulk CMOS process
- Radiation levels
  - Total dose hardness through 1x106 rad(Si)
  - Single event hardness
  - Neutron hardness through 1x1014 N/cm2
  - Dynamic and static transient upset hardness through 1x109 rad(Si)/s
  - Soft error rate of < 1x10-11 upsets/bit-day
  - dose rate survivability through 1x1012 rad(Si)/s
  - Latchup immune
- Packaging
  - 340-pin CCGA - ceramic column grid array (26mm x 28mm)
  - Two 128Kx36 die per package
- Compatible with commercial cache designs
- Operating temperatures
  - -55°C to 125°C

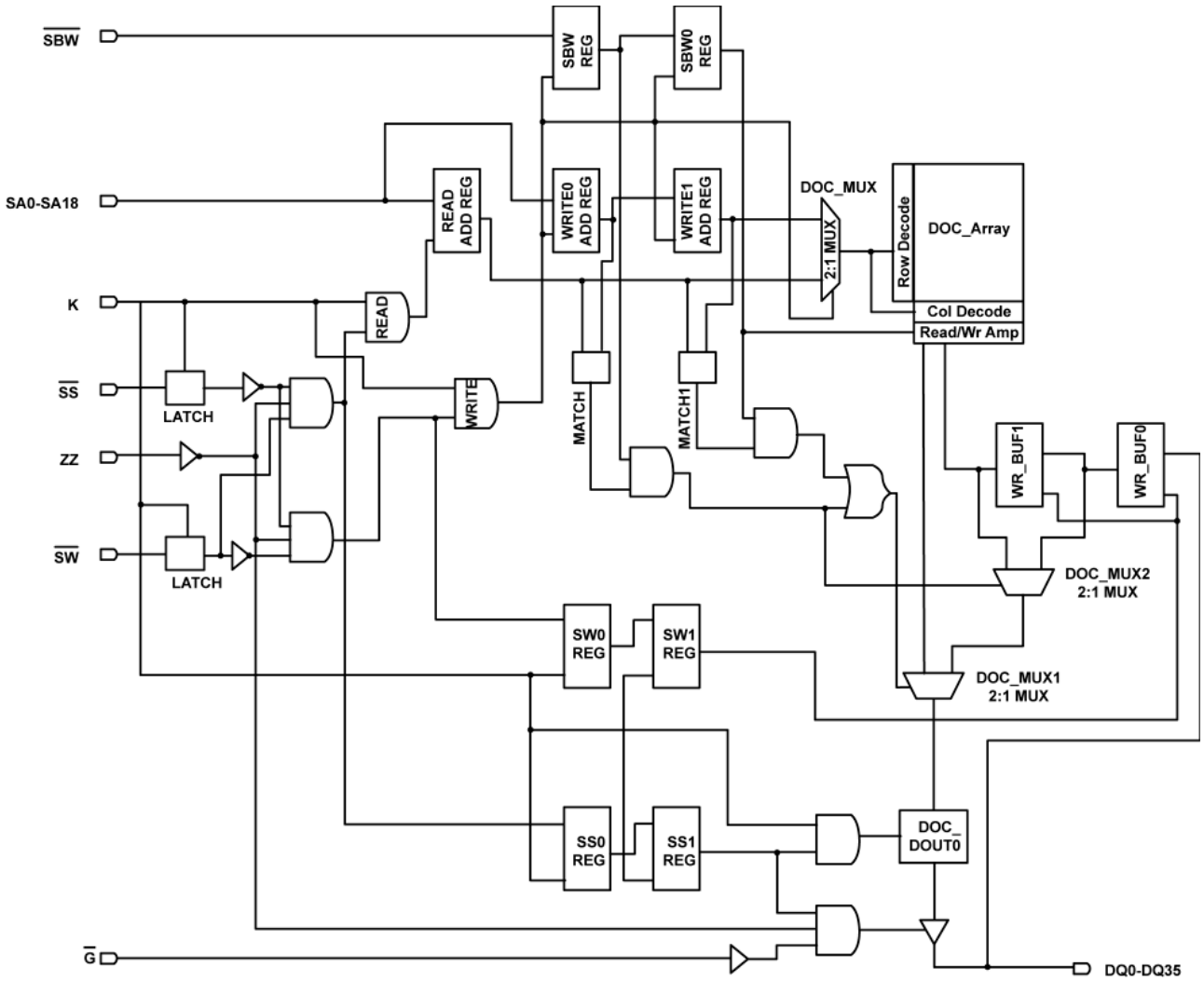
FEATURES AND CHARACTERISTICS

- Dual power supply
  - 3.3 V ±10% I/O
  - 1.8V ±10% core
- CMOS compatible I/O
- Low operating power
  - 10 mW/MHz active current (typ.)
  - ≤50 mW standby (maximum)



Preliminary Information

LOGIC DIAGRAM – PER DIE



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