

BST4D8G08

DRAM DDR4 8G Product Overview

I. Functional Description

The BST4D8G08 8Gb synchronous dynamic random-access memory (SDRAM) is a double-bit-rate DDR4 DRAM circuit fabricated using a high-speed CMOS process. It employs a four-bank group, four-bank structure, with each bank sized at 64M x 8 bits. The circuit's command and address signals are synchronized with an external clock (CLK), while the circuit's data signal is synchronized with the DQS signal. The logic state of each signal is determined by sampling on the rising edge of CLK.

The operating instruction sequences and packaging of the BST4D8G08 circuit are compatible with Micron's MT40A1G8.

II. Overview

- Operating voltage: $V_{CC}=V_{CCQ}=1.2V\pm0.06V$ $V_{PP}=2.5V$ (2.375V ~ 2.75V)
- Storage capacity : 8Gbit
- Storage structure: 64Mbx8x4banksx4bank group
- Data rate : 2666Mbps
- Double rate: data signal is latched on both edges of the system clock
- Programmable CAS Latency
- Burst Lengths: 8 or 4 (BC)
- Supports self-refresh and auto-refresh modes
- Auto refresh interval:
 - 64ms, TC less than 85 °C
 - 32ms, TC greater than 85 °C
 - 16ms, TC greater than 95 °C
- Package type: BGA78 (plastic package)
- Temperature range: -55 °C ~ +125 °C
- Quality grade: Enhanced temperature grade, QB grade, Aerospace grade
- Radiation resistance:
 - Total dose (TID) ≥ 100 Krad (Si)
 - Single event lock-up (LET) ≥ 15 MeV-cm²/mg

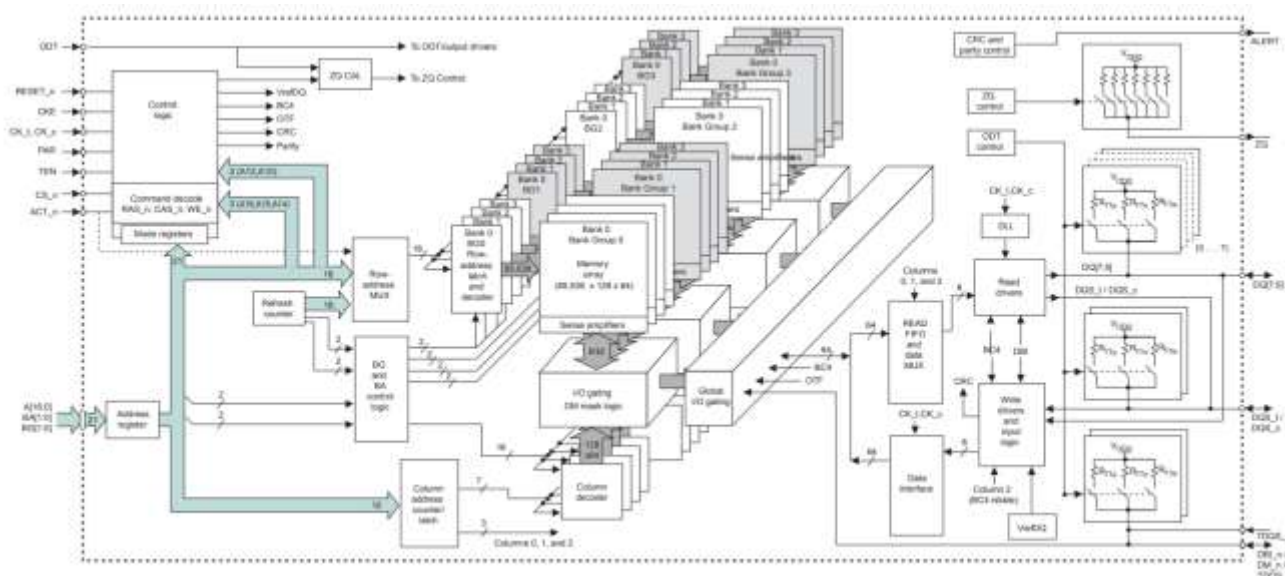
III. Recommended operating conditions

- Power supply voltage (V_{DD} , V_{DDQ}): $1.2 \pm 0.06V$
- Power supply voltage (V_{PP}): $2.5V$ ($2.375V \sim 2.75V$)
- Reference voltage (V_{REFCA} (DC), V_{REFDQ} (DC)): $0.5V_{DD} \pm 0.01V_{DD}$
- Input high level voltage (V_{IH}): $0.665V$
- Input low level voltage (V_{IL}): $0.535V$
- Operating temperature range (T_A): $-55^{\circ}C \sim +125^{\circ}C$
- Operating frequency (f): $1333MHz$

IV. Operational measures

- The device should be operated on an anti-static workbench or with finger cots;
- Test equipment and apparatus should be grounded;
- Do not touch the device leads;
- Devices should be stored in containers made of conductive materials (e.g., special boxes for integrated circuits);
- Avoid using plastics, rubber or silk fabrics that may cause static electricity during production, testing, use and transportation;
- The relative humidity should be kept above $50\% \pm 30\%$ as much as possible

V. Principle Block Diagram



Picture 1.