

BST4D8G16

DRAM DDR4 8G Product Overview

I. Functional Description

The BST4D8G16 - 16-bit 8Gb synchronous dynamic random-access memory (SDRAM) is a double-bit DDR4 DRAM fabricated using a high-speed CMOS process. It employs a two-bank group, four- bank structure, with each bank sized at 64M x 16 bits. The circuit's command and address signals are synchronized with an external clock (CLK), while the circuit's data signals are synchronized with the DQS signal. The logic state of each signal is determined by sampling on the rising edge of CLK.

BST4D8G16 circuit's various operating instruction sequences and packaging are compatible with Micron 's MT40A512M 16.

II. Main indicators

• Operating voltage: $V_{CC} = V_{CCQ} = 1.2V \pm 0.06V$, $V_{PP} = 2.5V$ (2.375V to 2.75V)

Memory capacity:

8Gbit

• Memory structure: 64Mb x 16 x 4 banks x 2 bank groups

• Data rate: 2666Mbps

Double data rate:
 Data signal latched on both system clock edges

Programmable CAS latency

Burst lengths:
 8 or 4 (BC)

- Supports self-refresh and auto-refresh modes
- Auto-refresh interval:
 - 64ms, TC < 85°C
 - 32ms, TC > 85°C
 - 16ms, TC > 95°C

Package:
 BGA96 (plastic package)

• Operating temperature range: -55°C C~ +125°C

Quality Grades: Enhanced temperature grade, QB grade, Aerospace grade

Radiation Resistance:

• Total Dose (TID) ≥ 100krad (Si)

Single Event Lockup (LET)
 > 15MeV ⋅ cm²/mg



III. Recommended operating conditions

• Supply voltage (V_{DD} , V_{DDQ}): 1.2 ± 0.06V

• Supply voltage (V_{PP}): 2.5V (2.375V to 2.75V)

Reference voltage (V_{REFCA} (DC), V_{REFDQ} (DC)): 0.5V_{DD} ± 0.01V_{DD}

• Input high voltage (V_{IH}): 0.665V

• Input low voltage (V_{IL}): 0.535V

Operating temperature range (T_A):
 -55°C to +125°C

Operating frequency (f):

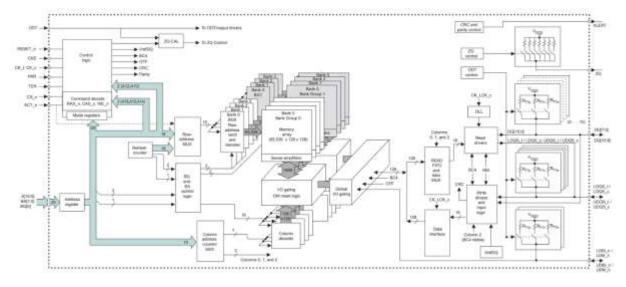
1333MHz

IV. Operational measures

Handle devices on an anti-static workbench or with finger cots;

- · Test equipment and instruments should be grounded;
- Do not touch device leads;
- Store devices in containers made of conductive materials (e.g., special boxes for integrated circuits);
- Avoid using plastics, rubber, or silk fabrics that generate static electricity during production, testing, use, and transportation;
- Maintain relative humidity above 50% ± 30% whenever possible.

V. Principle Block Diagram



Picture 1.