Densities: 64Mb, 128Mb, and 256Mb

Availability: **Production Now**

Applications: Automotive, IoT, Industrial/Medical

DRAM technology based solution with Hidden Refresh and OPI(Octal Peripheral Interface) Protocol

Very Low Signal Count: 11(12) pins for Functions (CS#, SCLK..) and 8 IOs. (Optional ERR# for 128Mb)

Up to 200MHz DDR Operation: 400MB/s @ 1.70~1.95V & Up to 166MHz DDR Operation: 322MB/s @ 2.70~3.6V,

Variable Latency or Fixed Latency, Burst Read/Write Operation & features Read Data Training (16-bit Pattern for Training Purpose).

Automotive Temperature: Up to A2= -40°C to 105°C for 256Mb & Up to A3 = -40°C to 125°C for 128Mb

Optional On Chip ECC for 128Mb: 1-bit Correction, 2-bit detection

Small Foot Print: 6mm x 8mm 24-ball TFBGA (5x5 ball array)

Features

Industry Standard Octal Serial Interface

- Double Transfer Rate (DTR) Operation
- Source Synchronous Output signal during Read Operation (DQSM)
- Data Mask during Write Operation (DQSM)
- Configurable Drive Strength
- Supports Deep Power Down mode

Burst Operation

- Configurable Wrapped Burst Length: 16, 32, 64, and 128
- Word Order Burst Sequence
- Continuous Burst Operation:
    - Continues Read operation until the end of array address
    - Continues Write operation even after the end of array address

Low Power Consumption

- Single 1.7V to 1.95V Voltage Supply
- Single 2.7V to 3.6V Voltage Supply
- 40 mA Active Read Current
- 1200 µA Standby Current (105°C)
- 30 µA Deep Power Down (1.8V, 105°C)

Hardware Features

- **SCLK Input:** Serial clock input
- **SIO0 - SIO7:** Serial Data Input or Serial Data Output
- **DQSM:**
    - Output during command, address transactions as Refresh Collision Indicator
    - Output during read data transactions as Read Data Strobe
    - Input during write data transactions as Write Data Mask
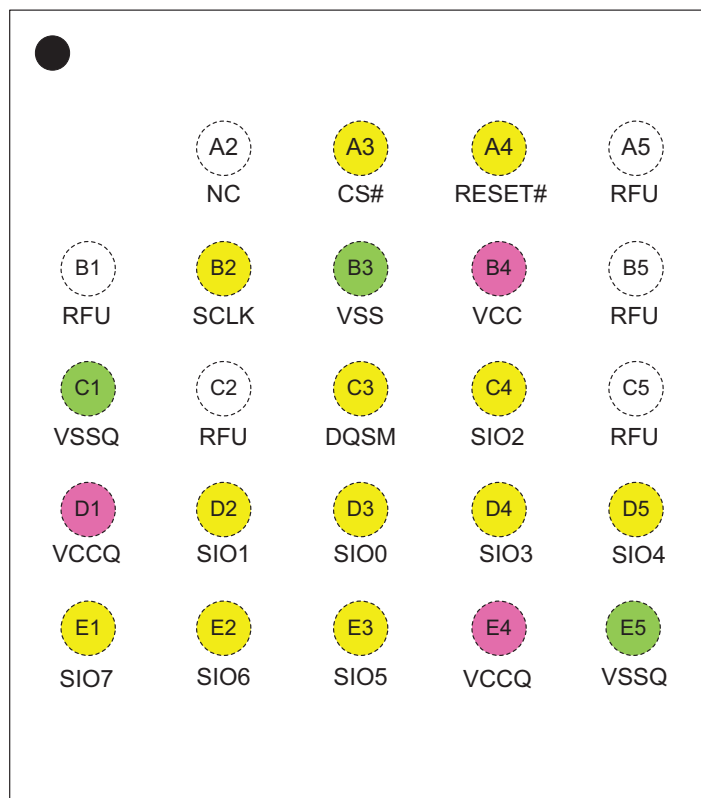   - RESET#: Hardware Reset pin

Temperature Grades

- Industrial: -40°C to +85°C
- Auto (A1) Grade: -40°C to +85°C
- Auto (A2) Grade: -40°C to +105°C
- Auto (A3) Grade: -40°C to +125°C for 128Mb

Industry Standard PACKAGE

- 24-Ball BGA
- KGD (Call Factory)

PIN CONFIGURATION
24-ball TFBGA (5x5 ball array)

A2 NC	A3 CS#	A4 RESET#	A5 RFU	
B1 RFU	B2 SCLK	B3 VSS	B4 VCC	B5 RFU
C1 VSSQ	C2 RFU	C3 DQSM	C4 SIO2	C5 RFU
D1 VCCQ	D2 SIO1	D3 SIO0	D4 SIO3	D5 SIO4
E1 SIO7	E2 SIO6	E3 SIO5	E4 VCCQ	E5 VSSQ

Top View, Balls Facing Down