

## Mobile RAM

<http://www.elpida.com>

### Description

Elpida Memory has unveiled a new family of synchronous DRAM, "Mobile RAM".

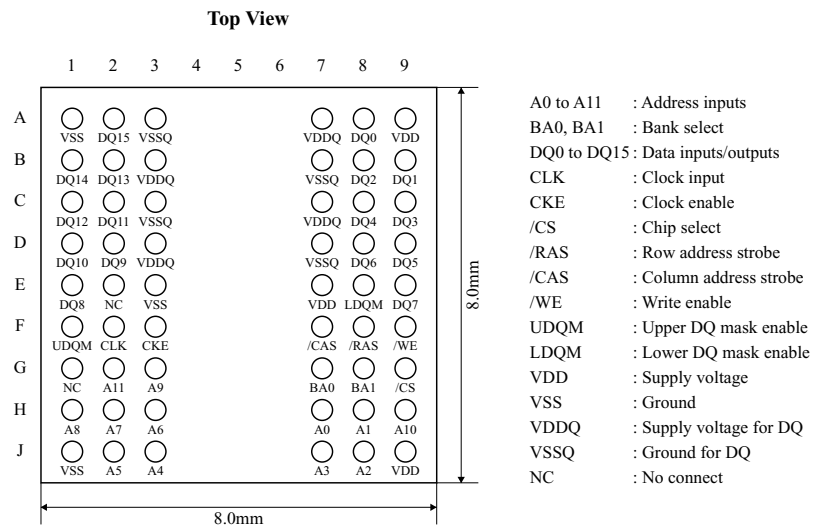
Mobile RAM achieves low power consumption via three special low power functions, and extends the battery life in mobile applications. Additional advantages of Mobile RAM are that it saves space in the system by the adoption of a 54-ball FBGA (Fine-pitch Ball Grid Array) package, and that it offers a high-speed data transfer rate using pipeline architecture.

Mobile RAM contributes to a better environment by adopting lead-free solder balls.

### Suitable Applications

- Mobile cellular handset
- PDA, wireless PDA
- Handheld PC
- Digital still camera
- Digital camcorder
- and more...

### Pin Configuration (54-ball FBGA)



### Product Lineup and Production Status

Density (bits)	Organization (words × bits × banks)	Self Refresh Current (μA (MAX.))	Supply Voltage (V)	Supply Voltage for DQ (V)	Maximum Clock Frequency (MHz)	Part Number	Sample Status
128M	2M × 16 × 4	350	2.5 ± 0.2	1.8 ± 0.15	133	EDL1216AASA-75-E	Now available
			2.5 ± 0.2	2.5 ± 0.2	133	EDL1216BASA-75-E	
			1.8 ± 0.15	1.8 ± 0.15	100	EDL1216CASA-75-E	

## Features

### 1. Low Power-Supply Voltage:

	Mobile RAM			Standard SDRAM
Supply Voltage (VDD)	2.5V ± 0.2V		1.8V ± 0.15V	3.3V
Input/output Voltage (VDDQ)	1.8V ± 0.15V	2.5V ± 0.2V	1.8V ± 0.15V	3.3V

### 2. Low Power Operation:

#### 2-1. Normal self refresh current

	Mobile RAM	Standard SDRAM
Self Refresh Current (IDD6) (MAX.)	350μA	2,000μA

#### 2-2. Mobile RAM-specific function for low power consumption

- **Partial Array Self Refresh:**  
Refreshes only a certain portion of the memory cell array to reduce the self-refresh current.
- **Temperature Compensated Self Refresh:**  
Adjusts the refresh frequency in response to changes in temperature to reduce the self-refresh current.
- **Deep Power Down:**  
Cuts internal voltage supply to achieve maximum power reduction.

### 3. High-Speed Operation:

- 100MHz at CAS Latency 3 (CL = 3) (VDD = 1.8V)
- 133MHz at CAS Latency 3 (CL = 3) (VDD = 2.5V)

### 4. Wide Temperature Range:

	Mobile RAM	Standard SDRAM
Operating Temperature	-25 to +85 °C	0 to 70 °C

### 5. Organization: 16-bit organization

### 6. Small Package:

54-ball FBGA (Fine-pitch Ball Grid Array) 8.0mm × 8.0mm × 1.0mm, 0.8mm ball pitch

### 7. Lead Free (Su – Ag – Cu)

### 8. Fully compatible with JEDEC Low Power SDRAM