

Infineon Specialty DRAMs

Mobile-RAM



www.infineon.com



Never stop thinking.

Mobile-RAM – A new Memory for handheld Applications

- Ultra-low power for battery-powered systems
- Extra-small Chip-Scale Package for space-constrained applications
- Organized x16 (and x8) for today's & tomorrow's PDA buses
- Ideal 128Mbit memory density for the next generation of PDAs, Smart Phones and palm-sized computers

Infineon is leading the way to support the memory requirements of handheld applications such as Smart phones, Personal Digital Assistants (PDAs) and Digital Still Cameras.

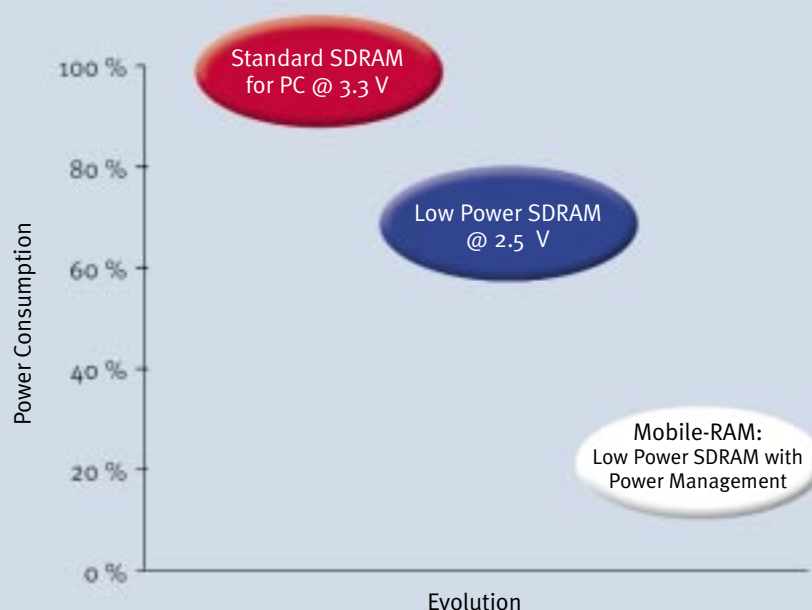
The new Mobile-RAM product line combines three important features specifically needed in handheld battery-powered applications: very low power consumption, small form factor and low cost per bit.

The world market for Personal Digital Assistants, the largest of the markets for the Mobile-RAM, was around 10 million units in 2000, and is projected by Gartner Dataquest to grow approximately 46 percent per year to reach 34 million units in 2004. High-end PDAs today come with up to 64 Mbytes of DRAM, but with software becoming more sophisticated and large numbers of applications becoming available at a quick pace, memory content per system is expected to grow above the industry average.

The Infineon Mobile-RAM is an ultra-low power SDRAM offering innovative features to achieve the lowest possible power consumption with a cost-efficient dynamic RAM.

Power consumption of the Mobile-RAM is reduced by up to 80 % depending on the operating conditions and system design. This reduction is achieved by the Mobile-RAM's low operating voltage of 2.5 V and I/O voltage of 1.8 V, and by the unique and innovative integrated power management features. The built-in power management enables the user to switch off unused parts of the Mobile-RAM and to adapt the refresh rate to the device's actual environment. (Note: in standard DRAMs the refresh rate is set to work at highest temperatures, i.e. worst conditions.)

The result is an energy-miserly RAM offering the cost structure of a DRAM but the power bill of an SRAM. What is more, it also helps saving valuable space using a chip-size package.



Mobile-RAM Features

The Mobile-RAM is a low power SDRAM mounted in a chip-size Ball-Grid-Array package (BGA). Initially based on the 128M DRAM density, this product ideally fulfills the requirements of handheld applications such as Smart Phones, Personal Digital Assistants (PDAs) and palm-sized computers. The 8Mx16 organization of the first member of the Mobile-RAM family allows it to be used in 16-bit and 32-bit bus environments.

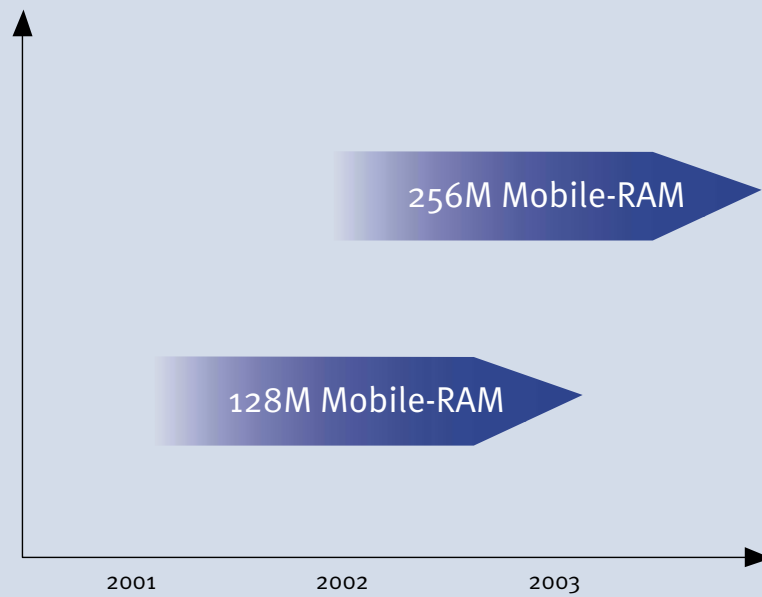


Small Package for small form-factor portable Applications

Compared to DRAMs mounted in the standard TSOP-II package, the form factor of the Mobile-RAM is reduced by more than a factor of three by using a Chip-Scale Package (CSP) which is only marginally larger than the dimensions of the silicon chip.

Infineon's highly competitive die sizes enable us to offer the smallest CSP-packaged 128M devices in the industry. The resulting footprint of the 128M Mobile-RAM is only 8mm x 9mm. That is small enough for even the most space-constrained handheld organizer or Smart Phone application.

The Fine-Pitch Ball Grid Array (FBGA) used for the Mobile-RAM is based on Infineon's proprietary wire-bonding Board-on-Chip (BOC) technology which combines the rigidity of inexpensive lead-frame bonding techniques with the space-saving features of CSP.



Mobile-RAM Roadmap

Samples of the 128M Mobile-RAM are available now. Start of volume production is in the 2nd half 2001.

In 2002 and 2003, the 128M and the 256M version of the Mobile-RAM will be available in large volumes.

INFINEON MOBILE-RAM PART NUMBERS:		
HYB 25L128160AC	8M x 16	0 ... +70 degr. C temp.
HYB 25L128800AC	16M x 8	0 ... +70 degr. C temp.
HYE 25L128160AC	8M x 16	-25 ... +85 degr. C temp.
HYE 25L128800AC	16M x 8	-25 ... +85 degr. C temp.

The 128M Mobile-RAM in FBGA package offers a footprint of only 8mm x 9mm





Industry-wide Standard

Infineon has worked together with partners in the industry to achieve standardization of the low-power features and the 54-ball FBGA package of the Mobile-RAM in JEDEC (Joint Electron Device Engineering Council), the semiconductor engineering standardization body of the Electronic Industry Alliance (EIA). With JEDEC standardization achieved, a number of compatible parts are going to emerge in due course. Consequently, with alternative sources secured, the Mobile-RAM is on its track to become a widely-used, high-volume DRAM.

Information about controller and ASIC vendors supporting the new Mobile-RAM feature set standard is available on request.

Find the latest information and datasheet updates on our web page:

www.infineon.com



