



INTEGRATED SILICON SOLUTION, INC.

PowerSaver™ Mobile SDRAMs

High Performance with Low Power

Market Drivers

As demand keeps growing for mobile consumer electronics like GPS navigation devices, sophisticated cell phones, digital cameras, and gaming units, more dynamic memories (DRAMs) are needed for fast access & processing of the multimedia content. At the same time, mobile applications are getting smaller, and as batteries shrink, the power drain has to be minimized. Mobile DRAMs tend to best fit these needs. Other types of electronic systems, especially portable medical and industrial applications can also take advantage of these low power DRAMs for the maximum benefit to the system. In order to satisfy these requirements, ISSI is introducing a line of quality mobile SDR and mobile DDR DRAMs that will be available for the long-term.



ISSI Mobile SDRAM Advantages

Low Power	Less power than standard SDRAMs with low standby current and self refresh options to maximize battery life and reduce heat
High Performance	Lower voltage & power options than standard SDRAMs at high data rates
Wide Temperature Ranges	Extended temperature ranges support industrial applications
Product Portfolio	Full range of Mobile SDR products, ball compatible with standard SDR products. Mobile DDR1 products planned for higher data throughput applications.
Long Term Support	ISSI fully committed to support legacy applications including x16/x32, 1.8V, 2.5V and 3.3V products

Products Available

Part No.	Density	Org.	V _{DD}	Max Speed	Package(s)
IS42VM16200C	32M	2M x16	1.8V	166MHz	BGA(54)
IS42VM32100C		1M x32	1.8V	166MHz	BGA(90)
IS42VM16400G	64M	4M x16	1.8V	166MHz	BGA(54)
IS42VM32200G		2M x32	1.8V	166MHz	BGA(90)
IS42SM16800F	128M	8M x16	3.3V	166MHz	BGA(54)
IS42RM16800F		8M x16	2.5V	166MHz	BGA(54)
IS42VM16800F		8M x16	1.8V	133MHz	BGA(54)
IS42SM32400F		4M x32	3.3V	166MHz	BGA(90)
IS42RM32400F		4M x32	2.5V	166MHz	BGA(90)
IS42VM32400F		4M x32	1.8V	133MHz	BGA(90)
IS42SM16160D	256M	16M x16	3.3V	143MHz	TSOP2(54), BGA(54)
IS42RM16160D		16M x16	2.5V	143MHz	TSOP2(54), BGA(54)
IS42VM16160D		16M x16	1.8V	133MHz	TSOP2(54), BGA(54)
IS42SM32800D		8M x32	3.3V	133MHz	TSOP2(86), BGA(90)
IS42RM32800D		8M x32	2.5V	133MHz	TSOP2(86), BGA(90)
IS42VM32800D		8M x32	1.8V	133MHz	TSOP2(86), BGA(90)
IS42SM32160C	512M	16M x32	3.3V	143MHz	BGA(90)
IS42RM32160C		16M x32	2.5V	133MHz	BGA(90)
IS42VM32160C		16M x32	1.8V	133MHz	BGA(90)

VM for V_{DD} = 1.8V, RM for V_{DD} = 2.5V, SM for V_{DD} = 3.3V

ISSI Mobile SDRAM Features

Features	Benefits	
Densities	32Mb - 512Mb (SDR) 32Mb - 512Mb (DDR)*	Support legacy applications as well as new designs
Configurations	x8, x16, and x32	Support applications from legacy 8-bit to 32-bit wide data bus designs.
V_{DD}	1.8V / 2.5V / 3.3V	Full range of V _{DD} supported. Enables direct replacement of standard SDRAMs
Speed Grade / Clock Frequency	Up to 166MHz	High-speed data frequencies with Mobile DRAMs, but lower power than standard products
Special Mobile Features	Temperature Compensated Self Refresh (TCSR)	Adjust refresh rate based on ambient temperature. Minimizes power consumption at lower temperatures.
	Partial Array Self Refresh (PASR)	Eliminates unnecessary row activations Full, 1/2, 1/4, 1/8 and 1/16 array options.
	Deep Power Down (DPD)	Provides a low power state when data retention is not required to maximize battery life
	Programmable Drive Strength (DS)	Adjusts output drive strength to actual bus loading to minimize power consumption. Full, 1/2, and 1/4 drive strength options.
Temperature Ranges	0°C to +70°C (Commercial) -25°C to +85°C (Extended) -40°C to +85°C (Industrial)	High performance for wide range of end markets / applications
Packages	TSOPII	Cost effective solution; easy "lower power upgrade" for existing SDRAMs
	BGA	Smaller footprint for space-critical designs
	Known Good Die (KGD)	Support die-level applications including MCP solutions

* Mobile DDR products will be introduced in the second half of 2009

ISSI Mobile SDRAM Part Number Decoder

