TEXT,C,55
FUJITSU MEMORY CARDS

Fujitsu as one of the world's leading memory card suppliers fully understands the needs of memory card users. That's why we concentrate on offering customers complete solutions and not just individual elements of a memory card based system. As well as offering a range of cards in 6 technologies, we also supply highly reliable half pitch connectors and a memory card controller IC to ease interfacing to microprocessor based systems. In addition Fujitsu provides comprehensive design support in the form of a controller IC evaluation kit complete with software and memory card introductory kits. And of course all Fujitsu products fully meet the latest standards laid down by JEIDA and PCMCIA giving you the added security of working with industry standards.

By choosing a complete solution from Fujitsu's state-of-the-art semiconductor technology and reputation for excellent service and you've got a supplier who can give you key advantages in your memory card development.

THE FUJITSU ADVANTAGE:
COMPLETE MEMORY CARD SOLUTION

THE CONNECTORS:
Highly reliable half pitch connectors available in a variety of versions including SMT. Fully conformant with JEIDA/PCMCIA standards.

CUSTOM DESIGN:
Create your own label design using your own logo, titling or graphic design. Simply supply artwork to Fujitsu and we do the rest.

THE SUPPORT:
Fujitsu supplies a memory card controller evaluation kit complete with software to let you evaluate MB86301 performance.

Memory card introductory kits are also available.

THE CONTROLLER IC:
The MB86301 single chip memory card controller IC greatly simplifies interfacing in TCs and

embedded systems.

THE COMPANY:
Fujitsu is one of the world's largest semiconductor companies and a technology leader in TSOP packaging which makes memory cards possible.

INTRODUCTION TO PCMCIA/JEIDA

JEIDA (Japanese Electronics Industrial Development Association) and PCMCIA (Personal Computer Memory Card Industrial Association) are the bodies who are setting up world wide standards for memory cards. Formed in 1988 and 1989 respectively both bodies have worked together since 1990 to develop a universally acceptable memory card specification. The adoption and use of such a standard is of great importance for the end users of memory cards as it ensures full compatibility between products from various vendors.

The first specification for the 68 pin memory card was introduced in August 1990. A 68 pin arrangement was chosen as a future oriented specification to allow up to 64 MBytes of memory to be addressed. An enhanced specification known as PCMCIA 2.0 was released in September 1991. Major additions included the adoption of an I/O card specification for modems/fax cards etc. and the addition of a number of options such as a dual voltage specification, an XIP software specification and the addition of two new pins (WAIT and RESET).

THE CARDS

Fujitsu offers a comprehensive range of memory cards in 6 technologies ensuring designers can find the right combination of density and speed for their application. SRAM, OTPROM, EPROM, Mask ROM and Flash are all in 68 pin cards while the DRAM card is an 88 pin configuration.

FEATURES

- Conform to JEIDA 4.1 and PCMCIA 2.0 Standards
- Based upon type 1 and type 2 cards

- 16-bit or 8-bit bus compatibility 16, 18, 32 or 36 bit bus width for DRAM cards
- Attribute Memory option on all 68 pin cards except EPROM
- Custom design of card labels possible (logo, graphic design etc.)
- Battery back-up for SRAM Card, (Battery BR 2325)
- Battery back-up IC MB3790 allows battery to be replaced when card is not plugged into system with no data loss
- Series 2 Flash cards with 64K sector write/erase

SPECIFICATIONS
- Dimensions: 85.6 mm x 54.0 mm x 3.3 mm
- Supply Voltage: +5V +5%
- Operating Temperature: 0 to 50øC
- Storage Temperature : -30 to +70øC
- ESD protection to 25kV
- TTL compatible I/Os
- Three state outputs

INTRODUCTORY KITS
Fujitsu has assembled a number of memory card design kits to allow designers to become familiar with memory card technology and system designs. These are:
MB98A-INTO-L KIT (low density option) containing one each of the following:
- 128 kbyte SRAM card
- 512 kbyte EPROM card
- 1 Mbyte Flash Card
- Thin Card drive and documentation

MB98A-INTRO-H KIT (high density option) containing one each of the following:
- 512 kbyte SRAM card
- 1 Mbyte EPROM card
- 1 Mbyte OTPROM card
- 68 pin Connector
- Thin card drive and documentation

MB98A-DRIVE consists of just the Thin Card Drive and documentation.

These kits allow designers to gain hands on experience of the various Fujitsu memory card technologies and determine the best product for their application.

NOTE ON ATTRIBUTE MEMORY
All Fujitsu memory cards provide the option to include attribute memory in an on-card 8k x 8 EEPROM (MBM28C65). The attribute memory contains card identification data such as the technology, memory capacity and access time. It can be factory programmed or programmed by the user. The customer can specify whether or not attribute memory is required with the last digit (x) of the part no. as follows:

x=2 No attribute memory required.
In this case when the REG pin is brought low, #FF will be output on the data bus.

x=3 Attribute memory required.
When the REG pin is brought low the attribute memory data can be accessed.

* Note: Attribute memory is not included on EPROM cards. i.e. only x=2 is valid.

88 PIN JEIDA/PCMCIA DRAM MEMORY CARDS
DRAM cards have 88 pins and a zigzag connector. This is because these cards will be used as main memory expansion and not for data or program storage. DRAM cards have no logic on-chip and offer a more robust, user friendly alternative to SIMM modules in portable and notebook PCs.