Product Change Notification

Type of Notification: Product Discontinuance

ISSUE DATE	LAST BUY DATE	NOTIFICATION NO.	LAST SHIP DATE
December 1st, 2005	August 31st, 2006	PCN-20051201-1	November 30th, 2006

This is to advise you that the following products have been discontinued.

Product ID (Description):
8Mb
LH28F008SA series (example: LH28F008SAT-ZW)
LH28F008SC series (example: LH28F008SCHT-TE)

16Mb
LH28F016SC series (example: LH28F016CT-ZR)
LH28F160S3 series (example: LH28F160S3HNS-TV)
LH28F160S5 series (example: LH28F008S5HT-TW)

32Mb
LH28F320S3 series (example: LH28F320S3HNS-ZM)
LH28F320S5 series (example: LH28F320S3HNS-ZP)
LH28F320SKTD series (example: LH28F320SKTD-ZR)

Description of Change:
Sharp Microelectronics of the Americas (SMA) is discontinuing our Symmetrical Flash products manufactured on 0.35µm -0.40µm lithography process technology.

Effect of Change:
The list of part numbers is for reference. If a particular part number of this series is not included in the list, it is still considered to be included in the EOL.

Timeframe of Customer Purchase Order Terms and Conditions
• New orders placed on / or after March 31st, 2006 will be NCNR (Non Cancelable, Non Returnable).
• All current orders on backlog will be converted to NCNR on March 31st, 2006.
• Sharp's standard 1 year warranty will apply.
• Last Time Buy date: August 31st, 2006
• Last Ship date: November 30th, 2006

Suggested Alternate Devices and/or Manufacturers:

The discontinuance of these old products is not a reflection of Sharp's commitment to the NOR Flash market. We continue to introduce new products at smaller geometries and higher densities. We encourage our customers to design in our newer technology MLC and Boot Block Flash products.

Although there are no drop-in replacement parts for the discontinued family, these newer products using much smaller architecture, can serve as replacements. Switching to these new families will likely result in changes to the PCB as well as potential programming modifications.

The following table suggests possible replacements from new product families for the products being discontinued.

Use this as a basis to determine which part is best for your application, as well as ascertaining the necessary hardware and software modifications.

Since the discontinued devices are symmetrical, our 64Mb MLC (and higher densities) Symmetrical Flash are the closest replacements to maintain a symmetrical architecture. The suggested 64Mb MLC is the LH28F640SPHT-PTLZ8 (56pin TSOP).

Our 16Mb and 32Mb ELEM devices are Boot Blocks but they are a good choice to maintain smaller densities for the current Legacy Flash designs of 8Mb to 32Mb. The 16Mb ELEM series part numbers are LHF00L24 through LHF00L31. The 32Mb ELEM series part numbers are LHF00L08 through LHF00L15

OBSOLETED SHARP PART NO.	SUGGESTED ALTERNATE PART NO.	ALTERNATE MANUFACTURER
LH28F008SAT-ZW	LHF00L31 425-1888-NO	None
LH28F008SCHT-TE	LHF00L31	None
LH28F008SCN-TF	LHF00L31	None
LH28F016SCT-ZH	LHF00L31	None
LH28F016SCT-ZJ	LHF00L31	None
LH28F016SCT-ZK	LHF00L31	None
LH28F016SCT-ZR	LHF00L31	None
LH28F160S3HNS-TR	LH28F640SPHT-PLTZ8	None
LH28F160S3HNS-TV	LH28F640SPHT-PLTZ8 425-1878-NO	None
LH28F160S3HT-TF	LH28F640SPHT-PLTZ8	None
LH28F160S5HNS-S1	LH28F640SPHT-PLTZ8	None
LH28F160S5HNS-TL	LH28F640SPHT-PLTZ8	None
LH28F160S5HT-TW	LH28F640SPHT-PLTZ8	None
LH28F320S3HNS-ZM	LH28F640SPHT-PLTZ8	None
LH28F320S5HNS-ZP	LH28F640SPHT-PLTZ8	None
LH28F320SKTD-ZR	LH28F640SPHT-PLTZ8	None

The following is a table with Suggested Replacement Part Number Details.

THESE ARE NOT DROP-IN REPLACEMENTS:

Legacy Symmetrical Flash EOL Part Numbers (0.35μm to 0.40μm process size)								Alternative Part
Part Number	PART DESCRIPTION	Internal Part Number	Read Supply Voltage (Vcc)	Program Supply Voltage	Process Size	Type	PKG TYPE	Replacement Part Number
LH28F008SAT-ZW	8M Dual,64k Block, 85ns	LHF08SZW	5V	12V	0.38μm	Symmetrical	40 TSOP	LHF00L31
LH28F008SCHT-TE	8M Smart,64k Block, 85ns	LHF08CTE	3V or 5V	3V, 5V, or 12V	0.38μm	Symmetrical	40 TSOP	LHF00L31
LH28F008SCN-TF	8M Smart,64k Block. 85ns	LHF08CTF	3V or 5V	3V. 5V, or 12V	0.38μm	Symmetrical	44 SOP	LHF00L31
LH28F016SCT-ZH	16M Smart,64k Block, 95ns	LHF16CZH	3V or 5V	3V, 5V, or 12V	0.38μm	Symmetrical	40 TSOP	LHF00L31
LH28F016SCT-ZJ	16M Smart,64k Block, 95ns	LHF16CZJ	3V or 5V	3V, 5V, or 12V	0.38μm	Symmetrical	40 TSOP	LHF00L31
LH28F016SCT-ZK	16M Smart,64k Block, 90ns	LHF16CZK	3V or 5V	3V, 5V, or 12V	0.38μm	Symmetrical	40 TSOP	LHF00L31
LH28F016SCT-ZR	16M Smart,64k Block, 90ns	LHF16CZR	3V or 5V	3V, 5V, or 12V	0.38μm	Symmetrical	40 TSOP	LHF00L31
LH28F160S3HNS-TR	16M Smart,64k Block, 100ns. Pin 29 is Grounded	LHF16KTR	3V	3V or 12V	0.35μm	Symmetrical	56 SSOP	LH28F640SPHT-PLTZ8
LH28F160S3HNS-TV	16M Smart,64k Block, 100ns. Pin 29 is Grounded	LHF16KTV	3V	3V or 12V	0.35μm	Symmetrical	56 SSOP	LH28F640SPHT-PLTZ8
LH28F160S3HT-TF	16M Smart,64k Block, 100ns	LHF16KTF	3V	3V or 12V	0.35μm	Symmetrical	56 TSOP	LH28F640SPHT-PLTZ8
LH28F160S5HNS-S1	16M Smart,64k Block, 70ns	LHF16KS1	5V	5V or 12V	0.35μm	Symmetrical	56 SSOP	LH28F640SPHT-PLTZ8
LH28F160S5HNS-TL	16M Smart,64k Block, 70ns	LHF16KTL	5V	5V or 12V	0.35μm	Symmetrical	56 SSOP	LH28F640SPHT-PLTZ8
LH28F160S5HT-TW	16M Smart,64k Block, 70ns	LHF16KTW	5V	5V or 12V	0.35μm	Symmetrical	56 TSOP	LH28F640SPHT-PLTZ8
LH28F320S3HNS-ZM	32M Smart,64k Block, 110ns	LHF32KZM	3V	3V or 12v	0.4μm	Symmetrical	56 SSOP	LH28F640SPHT-PLTZ8
LH28F320S5HNS-ZP	32M Smart,64k Block, 90ns	LHF32KZP	5V	5V or 12V	0.4μm	Symmetrical	56 SSOP	LH28F640SPHT-PLTZ8
LH28F320SKTD-ZR	32M Smart Volt, Dual Works, 70ns	LHF32KZR	3V or 5V	3V, 5V, or 12V	0.38μm	Symmetrical	56 TSOP	LH28F640SPHT-PLTZ8

Replacement Part Numbers Details. These are not drop in replacements.								
Replacement Part Number	PART DESCRIPTION	Internal Part Number	Read Supply Voltage (Vcc)	Program Supply Voltage	Process Size	Type	PKG TYPE	Temperature Range
LHF00L31	16M (x16) Bottom Boot Block, 70ns	LHF00L31	3V	3V or 12V	0.18μm	Bottom Boot Block	48 TSOP	Industrial, -40C to +85C
LH28F640SPHT-PLTZ8	64M Multi Level Cell 120ns	LHF64PZ8	3V	3V or 12V	0.18μm	Symmetrical	56 TSOP	Industrial, -40C to +85C

Product Change Notification (cont'd)

Customers must notify Sharp Microelectronics of the Americas in writing 90 days before the last buy date if they consider the discontinued product to be "Single Source". Sharp Microelectronics and the customer may negotiate an appropriate End-of-Life Agreement.

In case of further questions, please contact your SHARP sales representative.

Customer Acknowledgement of receipt of product discontinuance.

Acceptance:

Name   Title

Company   Date