Application Note

SST Flash SST39VF020

to

Eon Flash EN29LV040A

Rev. A, Issue Date: 2009/06/26

1. INTRODUCTION

The application note introduces how to implement a system design from SST SST39VF020 Flash to Eon EN29LV040A Flash.

2. GENERAL FUNCTION COMPARISON TABLE:

The following table is major features of these two devices.

Features	EN29LV040A-70SCP	SST39VF020-70-4C-WHE
voltage range	2.7 ~ 3.6	2.7 ~ 3.6
Pin to Pin	32-pin 8mmx14mm TSOP (Type 1) (pin 9=A18, need connected to GND)	32-pin 8mmx14mm TSOP (Type 1) (pin 9=NC)
Sector Architecture	8 sectors of 64K byte	64 sectors of 4K byte
Byte mode	Yes	Yes
Autoselect Information	Yes	No
Erase Suspend/Resume	Yes	No
Access times	70 ns	70 ns
Minimum endurance cycle	100K	100K (typ.)
Package	32-pin 8mmx14mm TSOP (Type 1)	32-pin 8mmx14mm TSOP (Type 1)

3. HARDWARE CONSIDERATIONS

3.1 I_{CC} comparison

Current	EN29LV040A		SST39VF020		Unit
	Typ	Max	Typ	Max	
Read I_{CC1}	7	12	-	20	mA
Write I_{CC3}	15	30	-	30	mA
Standby I_{CC2}	1	5.0	-	15	μA

3.2 Pin Configuration

32 pin TSOP (Type 1)	EN29LV040A-70SCP	SST39VF020-70-4C-WHE
Pin 9	A18	NC

When customer will use to be replaced SST SST39VF020-70-4C-WHE with Eon EN29LV040A-70SCP, the pin 9 of EN29LV040A-70SCP is A18. It must be connected to GND.

4. SOFTWARE CONSIDERATIONS

4.1 Manufacturer, Device Identification and Autoselect Information _

For EN29LV040A autoselect mode table

Description	CE#	OE#	WE#	A18 to A16	A15 to A10	A9[2]	A8	A7	A6	A5 to A2	A1	A0	DQ7 to DQ0
Manufacturer ID: Eon	L	L	H	X	X	V_{ID}	H[1]	X	L	X	L	L	1Ch
Device ID	L	L	H	X	X	V_{ID}	X	X	L	X	L	H	4Fh
Sector Protection Verification	L	L	H	SA	X	V_{ID}	X	X	L	X	H	L	01h (Protected) / 00h (Unprotected)

Note:
1. If a manufacturing ID is read with A8=L, the chip will output a configuration code 7Fh. A further Manufacturing ID must be read with A8=H.
2. A9 = VID is for HV A9 Autoselect mode only. A9 must be ≤ Vcc (CMOS logic level) for Command Autoselect Mode.

For SST39VF020 Manufacture ID and Device ID

- Manufacturer ID : BFH
- Device ID : D6H

	Address	Data
Manufacturer's ID	0000H	BFH
Device ID		
SST39LF/VF512	0001H	D4H
SST39LF/VF010	0001H	D5H
SST39LF/VF020	0001H	D6H
SST39LF/VF040	0001H	D7H

4.2. Sector Architecture

EN29LV040A:

Uniform Sector Architecture:
- 8 sectors of 64-Kbyte
- Any sector or block can be erased individually

SST39VF020:

Uniform Sector Architecture:
- 64 sectors of 4-Kbyte
- Any sector or block can be erased individually

Note： The sector architecture of Eon flash is different with SST flash. But software can be configured to fit both. One or several complete sector erase commands [from cycle 1 ~ cycle 6 (Addr./Data = SA/30h)] must be issued in SST39VF020 depending on the sector size. The correlation table is shown below.

Sector Size	Address Range (x8)	for cycle 6th	
		EN29LV040A-70SCP	SST39VF020-70-4C-WHE
64KByte	00000h-0FFFFh	Issue sector erase (Addr./Data = SA/30h) for sector 0	Issue sector erase (Addr./Data = SA/30h) for sector 0
			Issue sector erase (Addr./Data = SA/30h) for sector 1
			Issue sector erase (Addr./Data = SA/30h) for sector 2
			Issue sector erase (Addr./Data = SA/30h) for sector 3
			⋮
			Issue sector erase (Addr./Data = SA/30h) for sector 12
			Issue sector erase (Addr./Data = SA/30h) for sector 13
			Issue sector erase (Addr./Data = SA/30h) for sector 14
			Issue sector erase (Addr./Data = SA/30h) for sector 15
⋮	⋮	⋮	⋮
64KByte	30000h-3FFFFh	Issue sector erase (Addr./Data = SA/30h) for sector 3	Issue sector erase (Addr./Data = SA/30h) for sector 48
			Issue sector erase (Addr./Data = SA/30h) for sector 49
			Issue sector erase (Addr./Data = SA/30h) for sector 50
			Issue sector erase (Addr./Data = SA/30h) for sector 51
			⋮
			Issue sector erase (Addr./Data = SA/30h) for sector 60
			Issue sector erase (Addr./Data = SA/30h) for sector 61
			Issue sector erase (Addr./Data = SA/30h) for sector 62
			Issue sector erase (Addr./Data = SA/30h) for sector 63

4.3. Address input for command cycles:

EN29LV040A :

use address input 555H and 2AAH for command cycles.

Address bits A_{10}- A_0 are input for 555H and 2AAH, address bits A_{17}- A_{11} are don't cares.

SST39VF020 :

use address input 5555H and 2AAAH for command cycles.

Address bits A_{14}- A_0 are input for 5555H and 2AAAH, address bits A_{17}- A_{15} are don't cares.

The address input in the command sequence for the SST39VF020 can also be used for the EN29LV040A without any change.

Revisions List

Revision No	Description	Date
A	Initial Release	2009/06/26