



# **Application Note**

## **Eon Flash**

### **EN29LV010 vs. EN39LV010**



# Eon Silicon Solution Inc.

## 1. INTRODUCTION

The application note introduces how to implement a system design from Eon EN29LV010 Flash to EN39LV010 Flash.

## 2. GENERAL FUNCTION COMPARISON TABLE:

The following table is major features of these two devices.

Features	EN29LV010	EN39LV010
voltage range	2.7 ~ 3.6	2.7 ~ 3.6
Pin to Pin	34-ball 4mm x 6mm WFBGA 32-pin PLCC 32-pin 8mmx14mm TSOP (Type 1)	34-ball 4mm x 6mm WFBGA 32-pin PLCC 32-pin 8mmx14mm TSOP (Type 1)
Access time	45ns Regulated range 3.0V~3.6V 55ns / 70ns / 90ns	45ns Regulated range 3.0V~3.6V 70ns
Sector Architecture	8 sectors of 16K byte	32 sectors of 4K byte
Byte mode	Yes	Yes
VID and VHH Max	10.5V – 11.5V	10.5V – 11.5V
Erase Suspend/Resume	Yes	Yes
Minimum endurance cycle	100K	100K
Package	34-ball 4mm x 6mm WFBGA 32-pin PLCC 32-pin 8mmx20mm TSOP (Type 1) 32-pin 8mmx14mm TSOP (Type 1)	34-ball 4mm x 6mm WFBGA 32-pin PLCC 32-pin 8mmx14mm TSOP (Type 1)



## 3. HARDWARE CONSIDERATIONS

### 3.1 I<sub>CC</sub> comparison

Current	EN29LV010		EN39LV010		Unit
	Typ	Max	Typ	Max	
Read I <sub>CC1</sub>	7	12	7	12	mA
Write I <sub>CC3</sub>	15	30	15	30	mA
Standby I <sub>CC2</sub>	1	5.0	1	5.0	μA

### 3.2 The 34-ball (6mm x 8mm) WFBGA, 32-pin PLCC, and 32-pin 8mmx14mm TSOP (Type 1) package pin out comparison

For EN39LV010, all of the pin-out and package outline (including the package type of WFBGA, PLCC and TSOP (Type-I) etc.) are the same as EN29LV010. So the customer can replace EN29LV010 with EN39LV010 on PCB for system design directly.



# Eon Silicon Solution Inc.

## 4. SOFTWARE CONSIDERATIONS

Autoselect functions for EN29LV010 and EN39LV010 are the same except the device ID.

### 4.1 Manufacturer, Device Identification and Autoselect Information

#### For EN39LV010 autoselect mode table

Description	CE#	OE#	WE#	A16 to A14	A13 to A10	A9 <sup>2</sup>	A8	A7	A6	A5 to A2	A1	A0	DQ7 to DQ0
Manufacturer ID: Eon	L	L	H	X	X	V <sub>ID</sub>	H <sup>1</sup>	X	L	X	L	L	1Ch
							L						7Fh
Device ID	L	L	H	X	X	V <sub>ID</sub>	X	X	L	X	L	H	D5h
Sector Protection Verification	L	L	H	SA	X	V <sub>ID</sub>	X	X	L	X	H	L	01h (Protected)
													00h (Unprotected)

#### For EN29LV010 autoselect mode table

Description	CE#	OE#	WE#	A16 to A14	A13 to A10	A9 <sup>2</sup>	A8	A7	A6	A5 to A2	A1	A0	DQ7 to DQ0
Manufacturer ID: Eon	L	L	H	X	X	V <sub>ID</sub>	H <sup>1</sup>	X	L	X	L	L	1Ch
							L						7Fh
Device ID	L	L	H	X	X	V <sub>ID</sub>	X	X	L	X	L	H	6Eh
Sector Protection Verification	L	L	H	SA	X	V <sub>ID</sub>	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.



## 4.2. Sector Architecture

### EN39LV010:

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

### EN29LV010:

- Uniform Sector Architecture:
- 8 sectors of 16-Kbyte
  - Any sector or block can be erased individually

## 4.3. Sector Erasure

**EN39LV010:** Sector or Chip erasable

**EN29LV010:** Sector or Chip erasable

**Note :** In the condition of erasing the uniform sector of EN29LV010 to be replaced with EN39LV010, one or several complete sector erase commands [from cycle 1 ~ cycle 6 (Addr./Data = SA/30h)] must be issued in EN39LV010 depending on the sector size. The correlation table is shown below.

Sector Size	Address Range (x8)	for cycle 6th	
		EN29LV010	EN39LV010
16KByte	00000h-03FFFh	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
16KByte	04000h-07FFFh	Issue sector erase (Addr./Data = SA/30h) for sector 1	Issue sector erase (Addr./Data = SA/30h) for sector 4
			Issue sector erase (Addr./Data = SA/30h) for sector 5
			Issue sector erase (Addr./Data = SA/30h) for sector 6
			Issue sector erase (Addr./Data = SA/30h) for sector 7
⋮	⋮	⋮	⋮
16KByte	18000h-1BFFFh	Issue sector erase (Addr./Data = SA/30h) for sector 6	Issue sector erase (Addr./Data = SA/30h) for sector 24
			Issue sector erase (Addr./Data = SA/30h) for sector 25
			Issue sector erase (Addr./Data = SA/30h) for sector 26
			Issue sector erase (Addr./Data = SA/30h) for sector 27
16KByte	1C000h-1FFFFh	Issue sector erase (Addr./Data = SA/30h) for sector 7	Issue sector erase (Addr./Data = SA/30h) for sector 28
			Issue sector erase (Addr./Data = SA/30h) for sector 29
			Issue sector erase (Addr./Data = SA/30h) for sector 30
			Issue sector erase (Addr./Data = SA/30h) for sector 31



# Eon Silicon Solution Inc.

---

---

## Revisions List

Revision No	Description	Date
A	Initial Release	2009/06/11