



Application Note

Eon Flash EN29PL032 VS Spancion Flash S29PL032J



Eon Silicon Solution Inc.

1. INTRODUCTION

The application note introduces how to implement a system design from Spansion S29PL032J Flash to Eon EN29PL032 Flash.

2. GENERAL FUNCTION COMPARISON TABLE:

The following table highlights the major features of these two devices.

Features	EN29PL032	S29PL032J
voltage range	2.7 ~ 3.6	2.7 ~ 3.6
Page Access time	25ns	20ns, 25ns, 30ns
Random access time	70ns	55ns, 60ns, 70ns
Read buffer length	4 Words	8 Words
Bank and Sector Architecture	Four Banks 4M Bits: 4Kw x 8 + 32Kw x 7 12M Bits: 32Kw x 24 12M Bits: 32Kw x 24 4M Bits: 4Kw x 8 + 32Kw x 7	Four Banks 4M Bits: 4Kw x 8 + 32Kw x 7 12M Bits: 32Kw x 24 12M Bits: 32Kw x 24 4M Bits: 4Kw x 8 + 32Kw x 7
V _{HH} range	8.5 - 9.5	8.5 - 9.5
V _{ID} range	8.5 - 9.5	11.5 -12.5
V _{IO}	No	Yes, V _{IO} = V _{CC}
Simultaneous read/write	Yes	Yes
Autoselect Command	Yes	Yes
WP#/ACC	Yes	Yes
Secured silicon sector	64 Words user	64 words factory + 64 words user
CFI Compliant	Yes	Yes
JEDEC Data# polling & toggle bit command	Yes	Yes
Erase Suspend / Resume	Yes	Yes
Program Suspend / Resume	Yes	Yes
Multi sector erase	No	Yes
Persistent Protection Bit (PPB)	Yes	Yes
PPB Lock Bit	Yes	Yes
Dynamic Protctn Bit (DYB)	No	Yes
Password Sector Protection	No	Yes
High Voltage Sector Protection	Yes	Yes
Temporary Sector Unprotect	Yes	Yes
Minimum endurance cycle	100K	100K



3. HARDWARE & PERFORMANCE CONSIDERATIONS

3.1 I_{CC} comparison

Current	EN29PL032		S29PL032J		Unit
	Typ	Max	Typ	Max	
Read I _{CC1} (@10MHz)	20	55	45	55	mA
Write I _{CC2}	15	25	15	25	mA
Standby I _{CC3}	0.2	10	0.2	5	μA

3.2 Max V_{HH} and V_{ID} comparison

EN29PL032: V_{HH} = V_{ID} range is 8.5V ~ 9.5V

S29PL032J: V_{HH} range is 8.5V ~ 9.5V; V_{ID} range is 11.5V ~ 12.5V

Any voltage level higher than chip spec would damage the device, possibly.

3.3 Different Page access speed @ Random access speed 70ns

EN29PL032: 25ns.

S29PL032J: 30ns.



4. SOFTWARE CONSIDERATIONS

4.1 Manufacturer ID, Device Identifications comparison

Eon		Spansion	
Manufacture ID: 007Fh (A8 = "0"), 001Ch (A8 = "1").		Manufacture ID: 0001h	
Part No.	Device ID	Part No.	Device ID
EN29PL032	227Eh / 220Ah / 2201h	S29PL032J	227Eh / 220Ah / 2201h

4.2 Multi-sector (block) erasure commands

EN29PL032: No supported. (Users must issue another sector erase command for the next sector to be erased after the previous one is completed).

S29PL032J: Support Multi-Sector Erase Modes.

4.3 Dynamic Protection Bit (DYB)

EN29PL032: No supported.

S29PL032J: supported.

4.4 Password Sector Protection

EN29PL032: No supported.

S29PL032J: supported.



5. PERFORMANCE DIFFERENCES

5.1 Power-on and Reset Timings.

Parameter	Description	EN29PL032	S29PL032J
t _{VCS}	Vcc Setup Time (min)	50μs	50μs
t _{RP1}	RESET# Pulse Width (During Embedded Algorithms) (min)	10μs	*None
t _{RP2}	RESET# Pulse Width (NOT During Embedded Algorithms) (min)	500ns	500ns
t _{RH}	Reset# High Time Before Read (min)	50ns	50ns
t _{RB1}	RY/BY# Recovery Time (to CE#, OE# go low) (min)	0ns	0ns
t _{RB2}	RY/BY# Recovery Time (to WE# go low) (min)	50ns	*None
t _{READY1}	Reset# Pin Low (During Embedded Algorithms) to Read or Write (max)	20μs	20μs
t _{READY2}	Reset# Pin Low (NOT During Embedded Algorithms) to Read or Write (max)	500ns	500ns

Note*: There is no clear description in datasheet.



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Revisions List

Revision No	Description	Date
A	Initial Release	2009/09/10