



Application Note

Eon Flash EN29GL128H/L VS MXIC Flash MX29GL128EH/L



1. INTRODUCTION

The application note introduces how to implement a system design from MXIC MX29GL128EH/L Flash to Eon EN29GL128H/L Flash.

2. GENERAL FUNCTION COMPARISON TABLE:

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

| Features | EN29GL128H/L | MX29GL128EH/L |
|---|--|--|
| voltage range | 2.7 ~ 3.6 | 2.7 ~ 3.6 |
| Pin to Pin | Compatible (for 56 TSOP) Compatible (for 64 FBGA) | Compatible (for 56 TSOP) Compatible (for 64 FBGA) |
| Page Access time | 25ns | 25ns |
| Write buffer length | 64 Byte | 64 Byte |
| Sector Architecture | Uniform 128K Byte | Uniform 128K Byte |
| Byte/Word mode | Yes | Yes |
| Page read buffer length | 16 Byte | 16 Byte |
| CFI Compliant | Yes | Yes |
| VLKO range | 2.3V~2.5V | 2.3V~2.5V |
| Persistent methods of advanced sector protect | Yes | Yes |
| JEDEC Data# polling & toggle bit command | Yes | Yes |
| Erase Suspend / Resume | Yes | Yes |
| Program Suspend / Resume | Yes | Yes |
| Minimum endurance cycle | 100K | 100K |
| Package | 56-pin 14mm x 20mm TSOP 64 ball 11mm x13mm FBGA | 56-pin 14mm x 20mm TSOP 64 ball 11mm x13mm FBGA |



3. HARDWARE & PERFORMANCE CONSIDERATIONS

3.1 I_{CC} comparison

| Current | EN29GL128H/L | | MX29GL128EH/L | | Unit |
|-------------------------------|--------------|-----|---------------|-----|------|
| | Typ | Max | Typ | Max | |
| Read I _{CC1} (@5MHz) | 15 | 30 | 30 | 50 | mA |
| Write I _{CC2} | 20 | 30 | 26 | 35 | mA |
| Standby I _{CC3} | 1.5 | 10 | 30 | 100 | μA |

3.2 Max VID comparison

MX29GL128EH/L VID range is 9.5V~10.5V. But EN29GL128H/L doesn't support VID function. Any voltage level higher than chip spec would damage the device, possibly. (Using high voltage into Autoselect mode)

3.2 Max access time comparison

EN29GL128H/L access time: 70ns.
MX29GL128EH/L access time: 90ns.

3.3 Different secure silicon lengths

EN29GL128H/L: 256 byte.
MX29GL128EH/L: 16 Byte.

3.4 Different V_{HH} level (for accelerating programming functions)

EN29GL128H/L voltage level: 8.5V~9.5V.
MX29GL128EH/L voltage level: 9.5V~10.5V.



4. SOFTWARE CONSIDERATIONS

4.1 Except of Manufacturer ID, Device Identifications are the same

For EN29GL128H/L: manufacture ID: 007Fh (A8 = "0"), 001Ch (A8 = "1"); device ID: 227Eh / 2221h / 2201h.

For MX29GL128EH/L: manufacture ID: 00C2h, device ID: 227Eh / 2221h / 2201h.

4.2. Password protection commands

EN29GL128H/L: No support.

MX29GL128EH/L: Support.

4.3. Deep power down commands

EN29GL128H/L: No support.

MX29GL128EH/L: Support.

4.4. Different PPB protect range

EN29GL128H/L: Sector 0~3 and 124~127 have PPB for each sector. Sector 4~123 are 1 PPB per 4 sectors.

MX29GL128EH/L: A non-volatile protection bit (SPB) is assigned to each block.

4.5. Multi-sector erasure

EN29GL128H/L: No supported. (Users must issue another sector erase command for the next sector to be erased after the previous one is completed)

MX29GL128EH/L: Support



5. PERFORMANCE DIFFERENCES

5.1 Power-on and Reset Timings

| Parameter | Description | EN29GL128H/L | MX29GL128EH/L |
|--------------|--|--------------|---------------|
| t_{VCS} | Vcc Setup Time (min) | 50 μ s | 500 μ s |
| t_{RP1} | RESET# Pulse Width (During Embedded Algorithms) | 10 μ s | 10 μ s |
| t_{RP2} | RESET# Pulse Width (NOT During Embedded Algorithms) | 500ns | 500ns |
| t_{RH} | Reset# High Time Before Read | 50ns | 200ns |
| t_{RB1} | RY/BY# Recovery Time (to CE#, OE# go low) | 0ns | 0ns |
| t_{RB2} | RY/BY# Recovery Time (to WE# go low) | 50ns | 50ns |
| t_{READY1} | Reset# Pin Low (During Embedded Algorithms) to Read or Write | 20 μ s | 20 μ s |
| t_{READY2} | Reset# Pin Low (NOT During Embedded Algorithms) to Read or Write | 500ns | 500ns |



Eon Silicon Solution Inc.

Revisions List

| Revision No | Description | Date |
|-------------|-----------------|-----------|
| A | Initial Release | 2009/6/16 |