Product Description

Built with a SMI 3257EN controller, the USB flash drive series is ideal for consumer products and a variety of embedded and industrial applications. It uses highly reliable NAND Flash chips with capacities up to 32GB. Designed for ultimate reliability, UGB90XMHxxxxxx series have an excellent 1 million hour mean time to failure (MTTF) ensuring reliability over long-term usage and dedicated technical and engineering support for OEM clients.

Features

- High capacity in small form factor
  - From MLC 2GB ~ 32GB / (SLC TBD)
- Interface to host
  - 2.54mm Female Header Dual Row 2X5
  - Transport Protocol compatibility USB2.0
- Performance
  - Host transfer rate：480Mb/s
  - Transfer read rate：up to 20MB
  - Transfer write rate：up to 10MB

(Rated speeds may vary slightly depending on the benchmark used, drivers, windows version, bios version, densities and file size.)

- Power consumption
  - Typical read/write active：max. 0.8W
  - Typical idle： max.0.35W

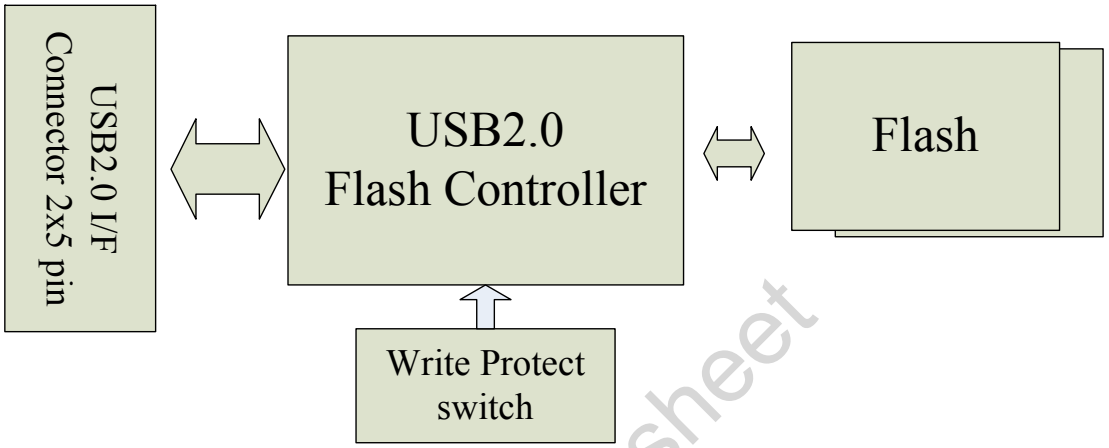
- Highly reliable
  - Mean time to failure (MTTF)：1,000,000 hours,
  - Data reliability：Built-in BCH ECC 72bits
  - Operating shock：1,500G
  - Operating vibration：20G
  - Operating Temperature：-0°C to + 70°C
- Enhanced endurance by wear-leveling:
  - –Flash cell Program/Erase cycles:
    - Single level cell 50K cycles
    - Multi level cell 3K cycles
  - –Read: Unlimited in theory
  - –Data Retention: 10 Years
- System Performance:
  - –Access time: 0.6 ms

Specifications

- Density：2GB up to 32GB
- Dimension：
  - 38mm x 23mm x 10.8mm (Horizontal type)
  - 45mm x 23mm x 6mm (Vertical type)
- Interface：Compliant with USB Revision 2.0
- Connector：2.54mm Female Header Dual Row 2X5
- Power Supply ：5V ± 5 %
- Remote Write Protect and drive Reset Control options available

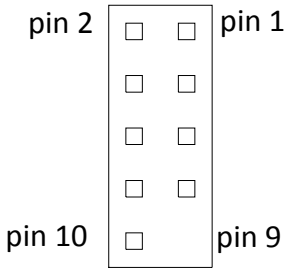
Preliminary Datasheet

Block Diagram



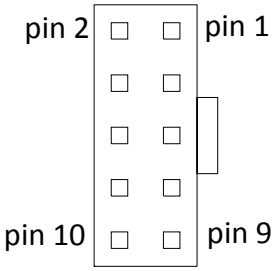
Prelimiary Datasheet

Pin Signal Definition



Horizontal type connector

	Pin NO.	Type	Description
Horizontal type	1	**VCC**	Power 5V input
	3	**DM (D-)**	USB2.0 Data Negative Signal
	5	**DP (D+)**	USB2.0 Data Positive Signal
	7	**GND**	Power Ground
	9	**Block**	Peg Key
	2,4,6,8,10	NC	No Connect



Vertical type connector

	Pin NO.	Type	Description
Vertical type	2	**VCC**	Power 5V input
	4	**DM (D-)**	USB2.0 Data Negative Signal
	6	**DP (D+)**	USB2.0 Data Positive Signal
	8	**GND**	Power Ground
	1,3,5,7,9,10	NC	No Connect

Preliminary Datasheet

Recommended Operating Conditions

Parameters	Symbol	Min	Max	Unit
Operating Temperature	Ta	0	70	°C
Supply Voltage	Vcc	4.5	5.5	V

Environmental and Reliability Characteristics

Shock	1,500 G max. (operating/non-operating)
Vibration	20 G peak to peak max. (operating/non-operating)
Acoustic Noise	0 dB
Humidity	5% to 95%, non-condensing
Altitude	80,000 ft max.
Data Reliability	1 in 1014 bits, read

Preliminary Datasheet

USB Flash Drive Setup Parameters

Formatted capacity	Total Logical Data Bytes
2GB	TBD
4GB	4,042,289,152
8GB	8,078,229,504
16GB	TBD
32GB	TBD
64GB	TBD

NOTE: To calculate the "Capacity in Bytes", use the following formula:

- Unigen defines 1 MBytes = 10_6 bytes. The capacities of all Unigen USB Flash Drives are stated in decimal values.

User capacity may vary depending on operating environments

Parameters in the above table are subject to change without advanced notice.

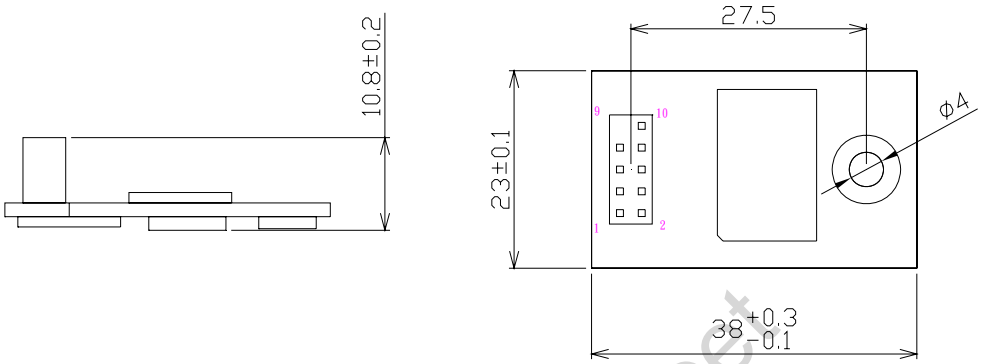
Performance (Vary from flash configurations)

Parameter: MLC 16GB	**Micron MT29F64G08CBAAA**	
Test AP	Sequential Read	Sequential Write
Crystal Disk Mark 3.0	26.7 MB / s	16.9 MB / s
Test AP	Sequential Read	Sequential Write
FDBENCH	26351 KB/s	14083 KB/s

Parameter: MLC 8GB	**INTEL JS29F64G08ACME2**	
Test AP	Sequential Read	Sequential Write
Crystal Disk Mark 3.0	34.0 MB / s	13.0 MB / s
Test AP	Sequential Read	Sequential Write
FDBENCH	33651 KB/s	10501 KB/s

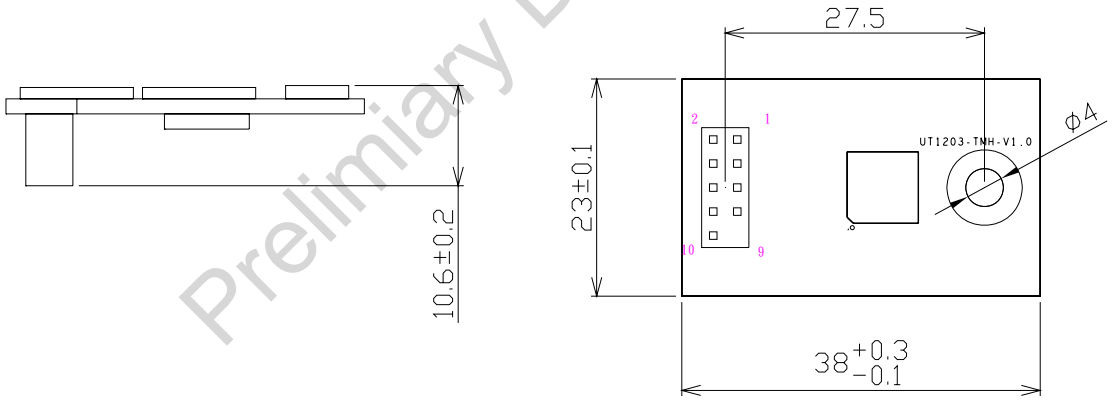
Preliminary Datasheet

Mechanical

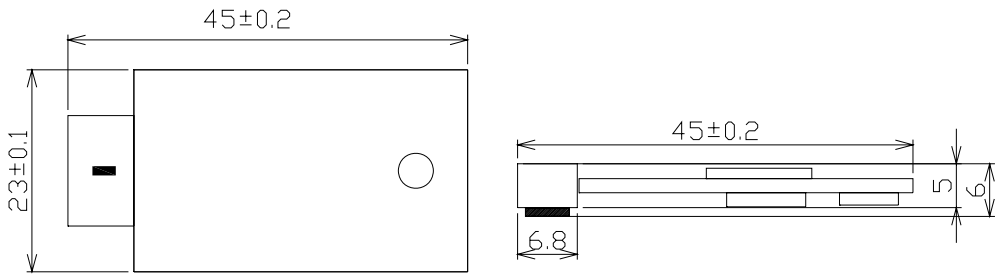


Horizontal type, Left side

Preliminary Datasheet



Horizontal type, Right side



Vertical type

Part Number and Ordering Information

UG	XXX	X	XX	XXXX	XX	XXX	XX
Unigen	Module Type	Product Temp	Assy Code	Density	Firmware	Customer P/N	BOM Configuration
	B90 = embedded UFD	V = MLC Horizontal Right side J = MLC Horizontal Left side M = MLC Vertical U = SLC Horizontal Right side K= SLC Horizontal Left side T = SLC Vertical	MH = w/SM3257	2000 = 2GB 4000 = 4GB 8000 = 8GB 16H0 = 16GB 32H0 = 32GB	T1		

Preliminary Datasheet

Issue Date: Mar 22 , 2012

Revision: X

Revision History

Rev. No.	History	Issue Date	Remarks
X	Prelimiary Datasheet	Mar 22 , 2012	

Prelimiary Datasheet