

# HAMMER Series

## Industrial Semi-Metal USB Flash Disk Generation 3



### Product features


- Tiny and semi-metal casing design
- USB 2.0 Mass Storage compliant
- USB 2.0 interface downwards compatible to USB 1.1
- Capacities from 128MB up to 8GB
- Supports Ready Boost for Microsoft Vista O.S.
- Performance up to 20.5 MB/sec

### Product specifications

- |                                    |   |                               |  |
|------------------------------------|---|-------------------------------|--|
| <b>Compatibility</b>               | USB 2.0 and USB 1.1 backwards   | <b>Functionality</b>          | Supports auto-run function                             |
| <b>Flash technology</b>            | SLC-NAND type flash based   |                               | Supports partition management, password and security   |
| <b>Performance</b>                 |   | <b>Power consumption</b>      |  |
| Data transfer rate                 | USB 2.0 supports transfer rates up to 480 Mb/s (60MB/s)                   | Power requirement             | 5V ± 10% via USB port                                  |
| Sequential read                    | 20.5 MB/sec (Max.)  | Reading mode                  | 78.2 mA (Max.)   |
| Sequential write                   | 18.7 MB/sec (Max.)  | Writing mode                  | 80.5 mA (Max.)   |
| Average access time                | 0.6 ms (estimated)  | Idle mode                     | 68.3 mA (Max.)   |
| <b>Environmental specification</b> |   | <b>Reliability</b>            |  |
| Operating temp.                    | STD. 0°C ~ 70°C / IND. -40°C ~ +85°C                                      | Wear-leveling                 | Dynamic wear-leveling algorithms                       |
| Non-operating temp.                | STD. -20°C ~ +80°C / IND. -50°C ~ +95°C                                   | MTBF                          | > 1,000,000 hours                                      |
| Humidity                           | 10% ~ 95% non-condensing  | ECC                           | 8 bits or 12 bits per 512 bytes block                  |
| Vibration                          | 15G compliance to MIL-STD-810F  | Endurance                     | > 2,000,000 cycles                                     |
| Shock                              | 1,500G compliance to MIL-STD-810F   | <b>Physical specification</b> |  |
| Altitude                           | 70,000 feet   | Weight (max.)                 | 15 g ± 1 g / 0.53 oz.                                  |
| <b>LED Indicator</b>               | Operating with blue light LED   | Dimension(W x L x T)          | 17.60 x 47.30 x 8.40 (mm)                              |
| <b>OS supported</b>                | Windows ME / 2000 / XP / Vista<br>Mac9.x , Mac OS X / Win98SE need driver | <b>Warranty</b>               | Standard grade : 3 years<br>Industrial grade : 5 years |

Operating temperature supports Standard grade 0°C ~ 70°C and Industrial grade -40°C ~ +85°C

### Part number list - Industrial semi-metal USB flash disk - Generation 3

Product Picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SMUFD128M-ACCSC-3	WMUFD128M-ACISI-3
	256MB	SMUFD256M-ACCSC-3	WMUFD256M-ACISI-3
	512MB	SMUFD512M-ACCSC-3	WMUFD512M-ACISI-3
	1GB	SMUFD001G-ACCSC-3	WMUFD001G-ACISI-3
	2GB	SMUFD002G-ACCSC-3	WMUFD002G-ACISI-3
	4GB	SMUFD004G-ACCSC-3	WMUFD004G-ACISI-3
	8GB	SMUFD008G-ACCSC-3	WMUFD008G-ACISI-3

### Part number decoder

X1 X2 X3 X4 X5 X6 X7 X8 X9 — X11 X12 X13 X14 X15 — 3 C

### Example

W M U F D 1 2 8 M — A C I S I — 3 C

**X1** Grade

**S** : Standard grade operating temp. 0°C ~ 70°C  
**W** : Industrial grade operating temp. -40°C ~ +85°C

**X12** Controller version

A,B,C,....

**X2** The material of casing

**M** : Semi-metal / metal casing

**X13** Controller grade

**C** : Commercial grade  
**I** : Industrial grade

**X3 X4 X5** Product category

**UFD** : USB flash disk

**X14** Flash IC

**S** : Samsung SLC-NAND flash IC

**X6 X7 X8 X9** Capacity

**128M** : 128MB      **001G** : 1GB  
**256M** : 256MB      **002G** : 2GB  
**512M** : 512MB      **004G** : 4GB  
                                 **008G** : 8GB

**X15** Flash IC grade

**C** : Commercial grade  
**I** : Industrial grade

**X11** Controller

**A** : Alcor (HAMMER Series)

**3** Generation of housing design

**3** : Generation 3

**C** Reserved for specific requirement

**C** : Option for Conformal-coating on PCBA

CF

Industrial CompactFlash Card

CFast

Industrial CFast Card

ATA

Industrial PCMCIA ATA Card

MIF

Industrial micro IDE Flash Module

MSE

Industrial micro SATA Flash Module

MUM

Industrial micro USB Module

MPM

Industrial mini PCI-e Module

SSD

Industrial Solid State Disk

UFD

Industrial Rugged Metal USB Flash Disk

SD

Industrial SD & SDHC Memory Card

AD

Industrial Adapter Card-Drive

CF

Industrial CompactFlash Card

CFast

Industrial CFast Card

ATA

Industrial PCMCIA ATA Card

MIF

Industrial micro IDE Flash Module

MSE

Industrial micro SATA Flash Module

MUM

Industrial micro USB Module

MPM

Industrial mini PCI-e Module

SSD

Industrial Solid State Disk

UFD

Industrial Rugged Metal USB Flash Disk

SD

Industrial SD & SDHC Memory Card

AD

Industrial Adapter Card-Drive