

# HAMMER-D Series

## Industrial Semi-Metal USB Flash Disk Generation 3



### Product features


- Tiny and semi-metal casing design
- USB 2.0 interface downwards compatible to USB 1.1
- Supports Ready Boost for Microsoft Vista O.S.
- USB 2.0 Mass Storage compliant
- Capacities from 128MB up to 8GB
- Performance up to 20.1 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                    | 20.1 MB/sec (Max.)   | Reading mode                  | 78.2 mA (Max.)   |
| Sequential write                   | 20.0 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 15 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 / Win 7<br>Mac9.x , Mac OS X / Win9SE 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-ADCSC-3	WMUFD128M-ADISI-3
	256MB	SMUFD256M-ADCSC-3	WMUFD256M-ADISI-3
	512MB	SMUFD512M-ADCSC-3	WMUFD512M-ADISI-3
	1GB	SMUFD001G-ADCSC-3	WMUFD001G-ADISI-3
	2GB	SMUFD002G-ADCSC-3	WMUFD002G-ADISI-3
	4GB	SMUFD004G-ADCSC-3	WMUFD004G-ADISI-3
	8GB	SMUFD008G-ADCSC-3	WMUFD008G-ADISI-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 D 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,....D

**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