



Commercial Applications

Commercial iNAND® Embedded Flash Drives

Product	iNAND® MC EU511	iNAND® MC EU311	iNAND® MC EM131	iNAND® CL EM122	iNAND® MC EM111	iNAND® CL EM132
Capacity ¹	64GB to 256GB	32GB to 256GB	32GB to 256GB	8GB to 64GB	16GB to 128GB	16GB to 256GB
Interface	UFS 3.0 Gear 4/2 Lane	UFS 2.1 Gear 3/2 Lane	e.MMC 5.1 HS400		e.MMC 5.1 HS400	
Operating Temp	-25°C to 85°C					
Operating Voltage	Core Voltage (VCC): 2.4–2.7V I/O (VCCQ): 1.14–1.26V	Core Voltage(VCC): 2.7–3.6V I/O (VCCQ2): 1.7–1.95V		Core Voltage (VCC): 3.3V I/O (VCCQ): 1.8V, 3.3V		Core Voltage (VCC): 2.7–3.6V I/O VCCQ: Either 1.7–1.95V or 2.7–3.6V
Sequential R/W (MB/s) ²	Up to 1500/800	Up to 800/550	Up to 300/260	Up to 300/160	Up to 290/160	Up to 310/250
Random R/W (IOPS) ²	Up to 90K/70K	Up to 40K/45K	Up to 20K/15K	Up to 22K/14K	Up to 8.8K/4.1K	Up to 21K/12K
Packages ³		11.5×13×1mm		11.5×13×0.8mm – 11.5×13×1.2mm		
Ordering Information	SDINEDK4-#### SDINEDK4-####G	SDINDDH4-####G	SDINBDA4-####G	SDINBDG4-####G	SDINADF4-####G	SDINBDA6-####G
Formerly Known As	N/A	iNAND® 8521	iNAND® 7550	iNAND® 7250	iNAND® 7232	iNAND® 7550



Commercial microSD™ Cards

Product	Edge CL QD501	Edge CL QD301	Edge CL QD101
Specification	Speed Class V30, U3, A2	Speed Class 10, U1, A1 ⁶	Speed Class 4
Capacity ¹	32GB to 512GB	16GB to 400GB	8GB to 64GB
Interface	SD 5.0 UHS-I 104	SD 3.0 & SD 5.0 UHS-I 104	SD 3.0 UHS-I 50
Operating Voltage	2.7V to 3.6V		
Operating Temperatures	-25°C to 85°C		
Sequential R/W (MB/s) ²	Up to 95/90 MB/s	Up to 95/10 MB/s	Up to 20/5 MB/s
Ordering Information	SDSDQAE-####G	SDSDQAD-####G	SDSDQAB-####G



Commercial Full-size SD™ Cards

Product	Edge CL LD501	Edge CL LD301	Edge CL LD101
Specification	Speed Class V30, U3	Speed Class 10, U1	Speed Class 4
Capacity ¹	32GB to 128GB	16GB to 128GB	8GB to 32GB
Interface	SD 4.0 UHS-I 104	SD 3.0 UHS-I 104	SD 3.0 UHS-I 50
Operating Voltage	2.7V to 3.6V		
Operating Temperatures	-25°C to 85°C		
Sequential R/W (MB/s) ²	Up to 80/50 MB/s	Up to 40/10 MB/s	Up to 20/5 MB/s
Ordering Information	SDSDAE-####G	SDSDAD-####G	SDSDAA-####G



SanDisk® Cruzer USB Flash Drives

Product	Cruzer Edge™ USB flash drive	Cruzer Fit™ USB flash drive	Cruzer UltraFit™ USB flash drive
Capacity ¹	8GB to 64GB	8GB to 64GB	16GB
Compatibility	SanDisk SecureAccess™ software: Windows® XP, Windows Vista®, Windows 7, Windows 8 and Mac OS X v10.5+ (Mac software requires download, see www.sandisk.com/secureaccess) Linux: storage only	SanDisk SecureAccess™ software: Windows® XP, Windows Vista®, Windows 7, Windows 8 and Mac OS X v10.5+ (Mac software requires download, see www.sandisk.com/secureaccess)	SanDisk SecureAccess™ software: Windows® XP, Windows Vista®, Windows 7, Windows 8 and Mac OS X v10.5+ (Mac software requires download, see www.sandisk.com/secureaccess)
USB port	USB 2.0 port	USB 2.0 port	USB 3.0 port
Ordering Information	SDUFD51-####G	SDUFD33-####G	SDUFD43-016G



Industrial Applications

iNAND Embedded Flash Drives for Industrial, IoT & Surveillance

Product	iNAND® IX EU312 XI Extended Temp	iNAND® IX EM122 XI Extended Temp	iNAND® IX EM122 Wide Temp	iNAND® IX EM132 Extended Temp	iNAND® IX EM132 Wide Temp
Capacity ¹	16GB to 256GB	8GB to 64GB		32GB to 256GB	
Interface	UFS 2.1 Gear 3/2 Lane		e.MMC 5.1 HS400		
Operating Voltage	Core Voltage(VCC): 2.7-3.6V I/O (VCCQ2): 1.7-1.95V		Core Voltage (VCC) 2.7-3.6 V I/O (VCCQ) voltage: either: 1.7-1.95V or 2.7-3.6V		Core Voltage(VCC): 2.7-3.6V I/O (VCCQ): Either 1.7-1.95V or 2.7-3.6V
Operating Temp	-40°C to 85°C		-40°C to 85°C	-25°C to 85°C	
Sequential R/W (MB/s) ²	Up to 800/550		Up to 300/160		Up to 310/250MB/s
Random R/W (IOPS) ²	Up to 40K/45K		Up to 22K/14K		Up to 21K/12K
Endurance ⁴	Default: up to 704 TBW, 100% Enhanced LUN Configuration: up to 3600 TBW		Up to 160 TBW		up to 693TBW
Enhanced Features	Advanced Health Report, Manual Refresh, Smart Partitioning, Thermal Protection		Advanced Health Report, Manual Refresh, Smart Partitioning		Advanced Health Report, Auto and Manual Refresh, Smart Partitioning, Thermal Management
Packages ³	11.5x13x1.2mm		11.5x13x0.8mm - 11.5x13.1.2mm		11.5x13x0.8mm - 11.5x13x1.2mm
Ordering Information	SDINDDH6-##G-XI		SDINBDG4-##G-XI1	SDINBDG4-##G-I1	SDINBDA6-##G-XI SDINBDA6-##G-I
Formerly Known As	iNAND® 8521XI Extended Temp		iNAND® 7250XI Extended Temp	iNAND® 7250I Wide Temp	iNAND® 7550-XI and - I



SD and microSD Cards for Industrial, IoT & Surveillance

Product	WD Purple SC QD102 microSD Card Surveillance High Endurance	WD Purple SC QD312 microSD Card Surveillance Extreme Endurance	Industrial IX LD332 SD Card Extended Temp	Industrial IX LD332 SD Card Wide Temp	Industrial IX - 3D Technology LD342 SD Card	Industrial IX QD332 microSD Card Extended Temp	Industrial IX QD332 microSD Card Wide Temp	Industrial IX QD334 microSD Card Extended Temp	Industrial IX - 3D Technology QD342 microSD Card	
Capacity ¹	32GB to 256GB	64GB to 256GB	8GB to 64GB		16GB - 512GB	8GB to 128GB		8GB to 64GB	16GB - 256GB	
Interface	SD 6.0 UHS-I 104	SD 6.0 UHS-I 104	SD 5.1 UHS-I 104		SD 6.0 UHS-I 104	SD 5.1 UHS-I 104		SD 5.1 UHS-I 104	SD 6.0 UHS-I 104	
Operating Temp	-25°C to 85°C	-25°C to 85°C	-40°C to 85°C	-25°C to 85°C	-40°C to 85°C	-25°C to 85°C	-25°C to 85°C	-40°C to 85°C	-25°C to 85°C	
Sequential R/W (MB/s) ²	Up to 100/60	Up to 100/65	Up to 80/50		Up to 100/50 MB/s	Up to 80/50		Up to 90/50	Up to 100/50 MB/s	
Endurance ⁴	Up to 256 TBW	Up to 768 TBW	Up to 192 TBW		Up to 1536 TBW	Up to 384 TBW		Up to 1920 TBW	Up to 768 TBW	
Enhanced Features	Health Status Register		Health Status Register, Host Lock, Programmable String, Secured FFU, Auto and Manual Read Refresh							
Ordering Information	WDD###G1P0A WDD###G1PCA (China)	WDD###G1P1B	SDSDAF3-##G-XI	SDSDAF3-##G-I	SDSDAF4-##G-I	SDSDAQF3-##G-XI	SDSDAQF3-##G-I	SDSDAQED-##G-XI	SDSDAQF4-##G-I	



SSDs for Industrial, IoT & Surveillance

Product	PC SA530		X600		CL SN520		CL SN720
Capacity ¹	256GB to 1TB		128GB to 2TB		128GB to 512GB		256GB to 2TB
Interface	SATA III 6Gb/s		SATA III 6Gb/s		PCIe NVMe Gen3 x2		PCIe NVMe Gen3 x4
Form Factor	SATA 2.5" 7mm	M.2 2280	SATA 2.5" 7mm	M.2 2280	M.2 2242	M.2 2280	M.2 2280
Input Voltage	5V ± 5% 3.3V ± 5%		5V ± 5%	3.3V ± 5%	3.3V ± 5%		3.3V ± 5%
Operating Temp	0°C to 70°C		0°C to 85°C		0°C to 85°C		0°C to 85°C
Sequential R/W (MB/s) ²	Up to 560/530		Up to 560/530		Up to 1,700/1,450		Up to 3,400/2,800
Random R/W (IOPS) ²	Up to 95K/84K		Up to 95K/84K		Up to 275K/270K		Up to 500K/410K
Self Encrypting Drive (SED) TCG Opal 2.01	Optional		Optional		N/A		Supported
Operating Vibration	5gRMS, 10-2000Hz		5gRMS, 10-2000Hz		20G, 20-2000Hz, linear sweep		20G, 20-2000Hz, linear sweep
MTTF ⁵	Up to 1.75M hours		Up to 1.75M hours		Up to 2M hours		Up to 2M hours
UBER	1 bit per 10 ¹⁶ bits read		1 bit per 10 ¹⁷ bits read		1 bit per 10 ¹⁷ bits read		1 bit per 10 ¹⁷ bits read
Endurance ⁴	Up to 400 TBW		Up to 500 TBW		Up to 400 TBW		Up to 1600 TBW
Ordering Information	SDASB8Y-#### SDATB8Y-#### (SED)	SDASN8Y-#### SDATN8Y-#### (SED)	SD9SB8W-#### SD9TB8W-#### (w/SED)	SD9SN8W-#### SD9TN8W-#### (w/SED)	SDAPMUW-####-1022	SDAPNUW-####-1022	SDAQNTW-####-1022 (up to 1TB, SED) SDAQNTX-2T00-1022 (for 2TB, Non-SED)





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Connected Home Applications

Connected Home iNAND® Embedded Flash Drives

Product	iNAND® CH EM123
Capacity ¹	8GB to 64GB
Interface	e.MMC 5.1 HS400
Operating Temp	-25°C to 95°C
Operating Voltage	Core Voltage (VCC) 2.7-3.6V I/O (VCCQ) voltage: either: 1.7-1.95V or 2.7-3.6V
Sequential R/W (MB/s) ²	Up to 300/240 (EUDA)
Endurance ⁴	Up to 448 TBW (UDA) and 1440 TBW (EUDA)
Random R/W (IOPS) ²	Up to 22K/14K
Enhanced Features	Smart Partitioning, Extended Temperature, Advanced Health Report, Manual Refresh
Packages ³	11.5x13x0.8mm – 11.5x13x1.2mm
Ordering Information	SDINBDG4-###G-H
Formerly Known As	iNAND® 7250-H



Connected Home Edge + Removables

Specification	Edge + SD™ Cards		Edge + microSD™ Cards	
Product	CH LD313	CH LD513 ⁷	CH QD313	CH QD513
Capacity ¹	8GB to 128GB	4GB and 32GB	8GB to 64GB	4GB to 64GB
Operating Temperatures	-25°C to 85°C	-25°C to 85°C	-25°C to 85°C	-25°C to 85°C
Sequential R/W (MB/s) ²	Up to 50/30	Up to 50/50	Up to 50/30	Up to 50/50
Endurance ⁴	Up to 896TBW	Up to 450TBW	Up to 640TBW	Up to 3200TBW
Smart Features	Health Status Register, Host Lock, Programmable String, Secured FFU, Auto and Manual Read Refresh			
Ordering Information	SDSDEB-###G	SDSDEC-###G	SDSDQE-###G	SDSDQEC-###G



Connected Home USB

Specification	USB	
Product	CH XB 513	CH XB 313
Capacity ¹	16GB	32GB to 128GB
Operating Temperatures	0°C to 55°C	0°C to 55°C
Sequential R/W (MB/s) ²	7/5	Up to 20/10
Endurance ⁴	Up to 160TBW	Up to 192TBW
Smart Features	Health Status Register, Host Lock, Programmable String, Secured FFU, Auto and Manual Read Refresh	
Ordering Information	SDUFDEC-###G	SDUFDEA-###G





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Automotive Applications

Automotive iNAND® Embedded Flash Devices

Product	iNAND® AT EU312 Grade 3	iNAND® AT EU312 Grade 2	iNAND® AT EM122 Grade 3	iNAND® AT EM122 Grade 2	iNAND® AT EM132 Grade 3	iNAND® AT EM132 Grade 2
Capacity ¹	16GB to 256GB	16GB to 256GB	8GB to 64GB	8GB to 64GB	32GB to 256GB	32GB to 256GB
Interface	UFS 2.1	UFS 2.1	e.MMC 5.1 HS400	e.MMC 5.1 HS400	e.MMC 5.1 HS400	e.MMC 5.1 HS400
Operating Temperatures	-40°C to 85°C	-40°C to 105°C	-40°C to 85°C	-40°C to 105°C	-40°C to 85°C	-40°C to 105°C
Sequential R/W (MB/s) ²	Up to 800/550	Up to 800/550	Up to 300/125	Up to 300/125	Up to 310/250MB/s	Up to 310/250MB/s
Random R/W (IOPs) ²	Up to 35K/40K	Up to 35K/40K	Up to 22K/12K	Up to 22K/12K	Up to 20K/12K	Up to 20K/12K
Enhanced Features	Advanced Health Report, SmartPartitioning, UFS 3.0 automotive features included		Advanced Health Report, Manual Refresh, Smart Partitioning		Advanced Health Report, Auto and Manual Refresh, Smart Partitioning, Thermal Management	
Package ³	11.5×13×1.2mm		11.5×13×0.8mm, 11.5×13×1.0mm, 11.5×13×1.2mm		11.5×13×1.0mm, 11.5×13×1.2mm	
Ordering Information	SDINDDH6-###G-XA	SDINDDH6-###G-ZA	SDINBDG4-###G-XA	SDINBDG4-###G-ZA	SDINBDA6-###G-XA	SDINBDA6-###G-ZA
Formerly Known As	N/A		iNAND® 7250A		iNAND® 7550A	



Automotive Full-size SD Cards⁸

Product	Automotive Grade 3
Capacity ¹	8GB to 64GB
Interface	SD 5.0 UHS-I 104
Operating Temperatures	-40°C to 85°C
Sequential R/W (MB/s) ²	Up to 80/50
Smart Features	Health Status Meter, Enhanced Power Immunity, Read Refresh, Host Lock, Programmable ID, Secure FFU
Ordering Information	SDSDAG3-###G-XA



¹ As used for storage capacity, one gigabyte (GB) = one billion bytes and one terabyte (TB) = one trillion bytes.

² Based on Western Digital internal testing. Read and write speed may vary depending on read/write conditions. 1 megabyte (MB) = 1 million bytes.

³ Package size varies based on capacity.

⁴ TBW (terabytes written) values calculated using JEDEC client workload.

⁵ MTTF = Mean Time To Failure based on internal testing.

⁶ A1 = Application Performance Class. A1 is indicated by A1 logo marking. A1 is not available on 200GB configuration.

⁷ UHS 104 supported for 4GB, UHS 50 supported for 32GB.

⁸ Automotive SD card is sold without a label.

Product specifications subject to change without notice. Not all products are available in all regions of the world.

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