//// HAGIWARA Solutions

SD Memory Card

High speed random access SD Card S Series
Fixed-Main-Parts SD Card K Series

256GB
MLC
CLASS 10 SDXC U1 I
HAGIWARA Solutions

Developed for implementation in industrial devices.The SD cards have a graspable product lifetime

Product features ////

● **High speed random access**
Writing efficiency for small size data is increased, and random access becomes greatly faster.

● **Enhanced Electrical Shut Down Durability**
Even if control information were to be damaged from a power shut down, the backed up control informat ion wi l l self -repai r the logical and physical conversion table by re-bui lding the memory control information so the device will boot up.

● **Speed Stability**
The S Series, the memory management method is specialized for Random Access , which guarantees consistent performance even after extensive use.
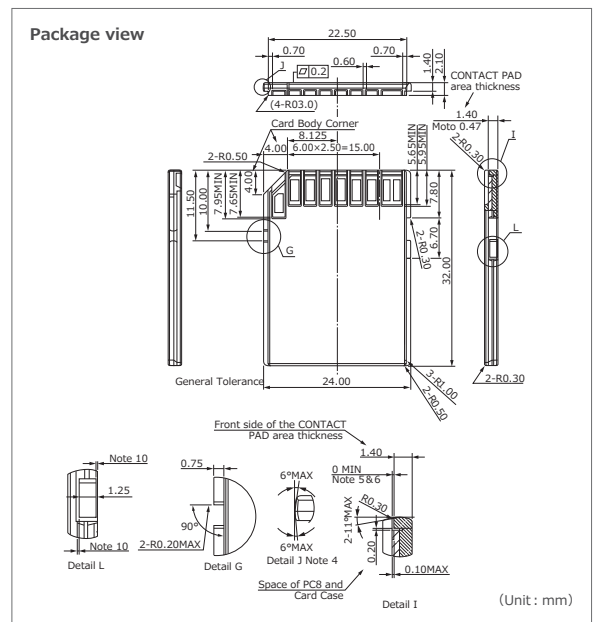
● **Lifespan Diagnosis Support**
We have developed a lifespan diagnostic tool dedicated to SD memory cards which allows our customers to check the state of the SD memory card in their environment setting.
*Only available for the Windows operating system.
Our exclusive reader/writer is required for lifespan diagnos-is.

Exclusive Card Reader for Lifespan Diagnosis
Prod uct M odel C ode: HPC-SDR1AD

Package view

(Unit : mm)

S series	Static wear leveling	Refresh Function	Read retry Function	Power loss guard Function	Off line scan	Fixed specifications	RoHS	FDE (Encryption)	TCG Opal2.0	Lifetime Notification Function	Lifetime Notification LED	DevSleep Function	Power Shut Off Durability	Wide temperature	Environmental Documents	LiveMonitor
SLC	•	•	•	-	-	•	•	-	-	•	-	-	•	•	•	•
Q-MLC	•	•	•	-	-	•	•	-	-	-	-	-	•	•	•	•
MLC	•	•	•	-	-	•	•	-	-	-	-	-	•	•	•	•

K series	Static wear leveling	Refresh Function	Read retry Function	Power loss guard Function	Off line scan	Fixed specifications	RoHS	FDE (Encryption)	TCG Opal2.0	Lifetime Notification Function	Lifetime Notification LED	DevSleep Function	Power Shut Off Durability	Wide temperature	Environmental Documents	LiveMonitor
SLC	•	•	•	-	-	△	-	-	-	-	-	-	•	-	-	-
MLC	•	•	•	-	-	△	-	-	-	-	-	-	•	-	-	-

⠿ Static wear leveling ⊻ Refresh Function ↻ Read retry Function ⌁ Power loss guard Function ◉ Off line scan △ Fixed specifications RoHS RoHS compatibility ⌇ FDE (Encryption) ● :Implementation ○ :Option
🛡 TCG Opal2.0 ◀)) Lifetime Notification Function ◉ Lifetime Notification LED DevSleep Function ⚡ Power Shut Off Durability Wide temperature ▤ Environmental Documents Live MONITOR LiveMonitor

Product Specifications

		S series			K series	
Flash Type		SLC	Q-MLC	MLC	SLC	MLC
Capacity		512MB～32GB	4GB～128GB	8GB～256GB	128MB, 512MB～16GB	2GB～128GB
interface		SD 3.0				
Power SUPPLY Voltage		2.7V～3.6V				
Operating temperature	Standard	-	-25℃～85℃		-25℃～85℃	
	Wide temperature	-40℃～85℃	-		-40℃～85℃	-
Storage temperature		-40℃～85℃			-40℃～85℃	
Operating Humidity		～95％ (non condensing)				
Storage Humidity		～95％ (non condensing)				
Dimensions (mm)		24 × 32 × 2.1				
Performance	Sequential read (MB/s)	[UHS-1] 90	[UHS-1] 88	[UHS-1] 78	[UHS-1] 88	[UHS-1] 90
	Sequential write (MB/s)	[UHS-1] 70	[UHS-1] 80	[UHS-1] 70	[UHS-1] 79	[UHS-1] 63
	Random read (IOPS)	-	-	-	-	-
	Random write (IOPS)	-	-	-	-	-
Current consumption (mA)	Read (Max)	150	170	210	110	120
	Write (Max)	150	140	170	130	180
Warranty peried		1year				

Product lineup

S series		128MB	512MB	1GB	2GB	4GB	8GB	16GB	32GB	64GB	128GB	256GB
SLC	-40～85℃	-	NSD6-512MS (P**SEI	NSD6-001GS (P**SEI	NSD6-002GS (P**SEI	NSDB-004GS (N**SEI	NSDB-008GS (N**SEI	NSDB-016GS (N**SEI	NSDB-032GS (N**SEI	-	-	-
Q-MLC	-25～85℃	-	-	-	-	NSDB-004GS (N**Q*S	NSDB-008GS (N**Q*S	NSDB-016GS (N**Q*S	NSDB-032GS (N**Q*S	NSDB-064GS (N**Q*S	NSDB-128GS (N**Q*S	-
MLC	-25～85℃	-	-	-	-	-	NSDB-008GS (N**M*S	NSDB-016GS (N**M*S	NSDB-032GS (N**M*S	NSDB-064GS (N**M*S	NSDB-128GS (N**M*S	NSDB-256GS (N**M*S

K series		128MB	512MB	1GB	2GB	4GB	8GB	16GB	32GB	64GB	128GB	256GB
SLC	-25～85℃	NSD2-128MK (L**SEI	NSD6-512MK (L**SEI	NSD6-001GK (L**SEI	NSD6-002GK (L**SEI	NSDB-004GK (L**SEI	NSDB-008GK (L**SEI	NSDB-016GK (L**SEI	-	-	-	-
	-40～85℃	-	NSD6-512MK (L**SEZ	NSD6-001GK (L**SEZ	NSD6-002GK (L**SEZ	NSDB-004GK (L**SEZ	NSDB-008GK (L**SEZ	NSDB-016GK (L**SEZ	-	-	-	-
MLC	-25～85℃	-	-	-	NSD6-002GK (L**MHI	NSDB-004GK (L**MHI	NSDB-008GK (L**MHI	NSDB-016GK (L**MHI	NSDB-032GK (L**MHI	NSDB-064GK (L**MHI	NSDB-128GK (L**MHI	-

＊management number

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