

The Most **Reliable**  
Storage For Industries

**PV93E-E1S**



## Overview

Apacer PV93E-E1S is a high-performance and high endurance NVMe SSD designed as the standard EDSFF E1.S form factor utilizing 112-layer 3D TLC NAND Flash. PV93E-E1S supports PCIe Gen4 x4 interface and provides full compliance with NVMe 1.4 specifications, allowing the PCIe SSD to operate more effectively than SATA SSDs and greatly save on power consumption.

### PV93E-E1S



PV93E-E1S delivers outstanding, stable performance up to 7,460 MB/s for sequential read and 6,415 MB/s for sequential write and ultra-low latency with optimized QoS. PV93E-E1S also presents better energy efficiency than traditional hard drives, extended endurance of more than 1 drive writes per day for 5 years and all the advantages of NAND Flash management technologies to ensure data integrity and highest levels of reliability, making it particularly suited for read-intensive, mixed-use workload applications.

PV93E-E1S features enterprise-class reliability features implemented on both hardware and firmware levels. On the hardware level, PV93E-E1S is not only built with a powerful PCIe controller that supports on-the-module ECC as well as LDPC (Low Density Parity Check) ECC engine to extend SSD endurance and increase data reliability, but also designed with a heatsink to help keep an SSD cool and functioning correctly, while still allowing the drive to deliver high-speed performance.

With the support of CorePower, PV93E-E1S ensures data integrity and stability of data transmission in the event of unexpected power loss. This is achieved by implementing a backup power supply with tantalum capacitors, which provide sufficient time to transfer all cached data to NAND flash. To increase product reliability and resistance to various thermal and mechanical shocks, PV93E-E1S also provides Sidefill technology to ensure that products continue to operate normally in high vibration and under extreme environmental changes.

## Features

- Low-Density Parity-Check (LDPC) Code
- Global Wear Leveling
- Flash Bad-block Management
- Flash Translation Layer: Page Mapping
- DataDefender™
- S.M.A.R.T. Function
- TRIM
- Hyper Cache Technology
- Over-Provisioning
- SMART Read Refresh™
- Signed Firmware
- CorePower
- Thermal Sensor
- Thermal Throttling
- End-to-End Data Protection
- Sidefill Technology
- Heatsink design

## Specifications

<b>Model Name</b>	PV93E-E1S
<b>Interface</b>	PCIe Gen4 x4
<b>Connector</b>	EDSFF 1C (56 Pin)
<b>Form Factor</b>	EDSFF E1.S (9.5mm)
<b>NAND Flash Type</b>	3D TLC
<b>Capacity</b>	480GB~3840GB
<b>External DRAM</b>	Yes
<b>Sustained Read Performance (MB/sec.)</b>	Up to 7460
<b>Sustained Write Performance (MB/sec.)</b>	Up to 6415
<b>Sustained Read Performance (IOPS)</b>	926K
<b>Sustained Write Performance (IOPS)</b>	85K
<b>ECC Engine</b>	Low-Density Parity-Check (LDPC) Code
<b>IOPS (4K Random Read/Write)</b>	1083K
<b>Random R/W Latency</b>	65/77 $\mu$ s
<b>Random R/W QoS</b>	0.102/0.342 ms
<b>Standard Operating Temperature ( °C )</b>	0°C ~ 70°C
<b>Storage Temperature ( °C )</b>	-55°C ~ + 100°C
<b>Thermal Sensor</b>	Yes
<b>Shock</b>	Operation: Acceleration, 50(G)/11(ms)/half sine (Compliant with MIL-STD-202G) Non-operation: Acceleration, 1500(G)/0.5(ms)/half sine (Compliant with MIL-STD-883K)
<b>Vibration</b>	Operation: 7.69 GRMS, 20~2000 Hz/random (Compliant with MIL-STD-810G) Non-operation: 4.02 GRMS, 15~2000 Hz/random (Compliant with MIL-STD-810G)
<b>Operating Voltage</b>	12V $\pm$ 5%
<b>Power Consumption</b>	Active Mode: 10.96W/ Idle Mode: 2.01W
<b>Dimension (L x W x H )</b>	33.75 x 118.75 x 9.05 mm
<b>MTBF (Hours)</b>	>3,000,000

