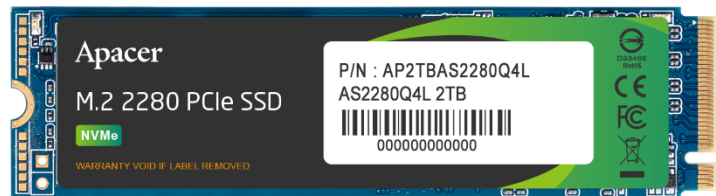


RoHS Compliant
PCI Express Flash Drive
Consumer AS2280Q4L Product Specifications



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Version 1.3

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Specifications Overview:

- **PCIe Interface**
 - Compliant with NVMe 1.4
 - Compatible with PCIe Gen4 x4 interface
- **Capacity**
 - 256, 512 GB
 - 1, 2 TB
- **Performance¹**
 - Sequential Read/Write
 - 256 GB: 3,300/1,300 MB/sec
 - 512 GB: 3,600/3,000 MB/sec
 - 1 TB: 3,600/3,000 MB/sec
 - 2 TB: 3,600/2,800 MB/sec
 - 4K Random Read/Write IOPS
 - 256 GB: 360K/150K
 - 512 GB: 410K/600K
 - 1 TB: 430K/740K
 - 2 TB: 400K/600K
- **Flash Management**
 - Bad Block Management
 - S.M.A.R.T.
 - Power Failure Management
 - TRIM
 - Over-provisioning
- **NAND Flash Type:** 3D NAND
- **MTBF:** >1,500,000 hours
- **Terabytes Written**
 - 256 GB: 150 TB
 - 512 GB: 300 TB
 - 1 TB: 600 TB
 - 2 TB: 1,200 TB
- **Temperature Range**
 - Operating: 0°C to 70°C
 - Storage: -40°C to 85°C
- **Supply Voltage**
 - 3.3V ± 5%
- **Power Consumption¹**
 - Active mode: 5 W (max.)
 - Power State 4: 5 mW (max.)
- **Connector Type**
 - 75-pin M.2 module pinout
- **Physical Characteristics**
 - Form factor: M.2 2280
 - Dimensions (unit: mm):
 - Single-sided: 80.00 x 22.00 x 2.15_(max.)
 - Double-sided: 80.00 x 22.00 x 3.50_(max.)
 - Net weight (unit: g ± 5%):
 - Single-sided: 7.6
 - Double-sided: 10.2
- **Shock & Vibration²**
 - Shock: 1,500 G
 - Vibration:
 - Frequency/Displacement: 20Hz~80Hz/1.52mm
 - Frequency/Acceleration: 80Hz~2000Hz/20G
- **RoHS Compliant**

Notes:

1. Varies from capacities. The values for performances and power consumptions presented are typical and may vary depending on flash configurations or platform settings.
2. Non-operating

1. General Description

Apacer AS2280Q4L (M.2 2280) is the next generation modularized Solid State Drive (SSD) with the shape of all new M.2 form factor, aimed to be the more suitable for mobile and compact computers with standard width at only 22.00 mm. AS2280Q4L appears in M.2 2280 mechanical dimensions and is believed to be the leading add-in storage solution for future host computing systems.

The M.2 SSD is designed with PCIE connector pinouts, providing full compliance with the latest PCIe Gen4 x 4 interface specifications. Aside from PCIe compliance, AS2280Q4L delivers exceptional performance and power efficiency. On the other hand, the extreme thin and light form factor makes AS2280Q4L the ideal choice for mobile computing systems, which appears to be the trend in near future.

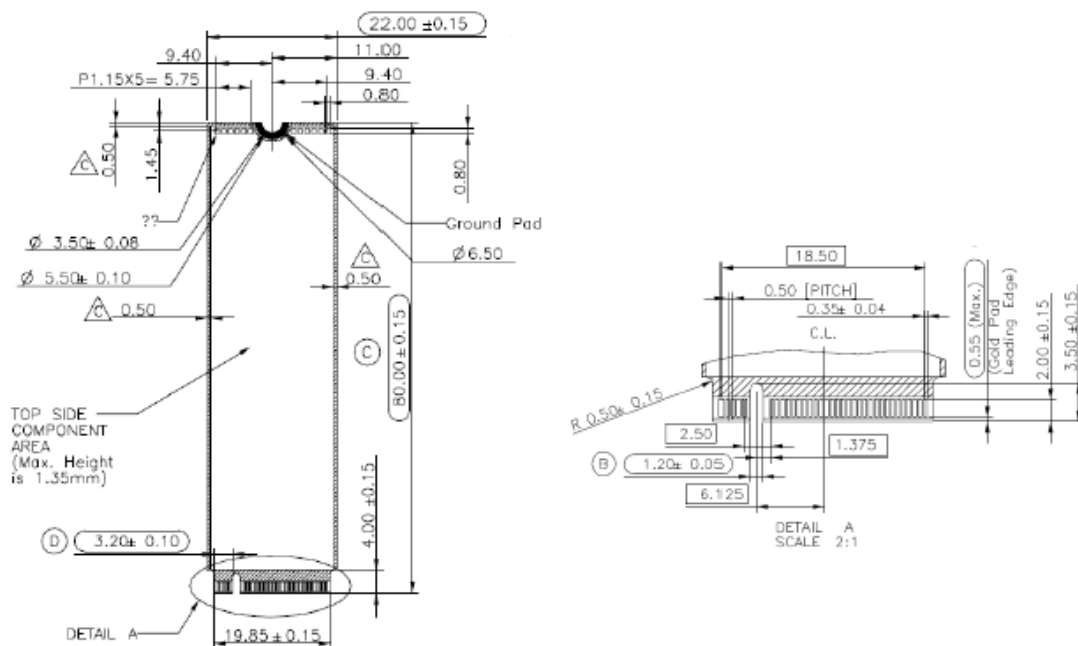
Regarding reliability, AS2280Q4L is built with a powerful PCIe controller that supports on-the-module ECC as well as efficient wear leveling scheme. In terms of power efficiency, AS2280Q4L is compliant with PCIe Gen4 x 4 interface standard so that it can operate on power management modes, which greatly save on power consumption.

2. Mechanical Specifications

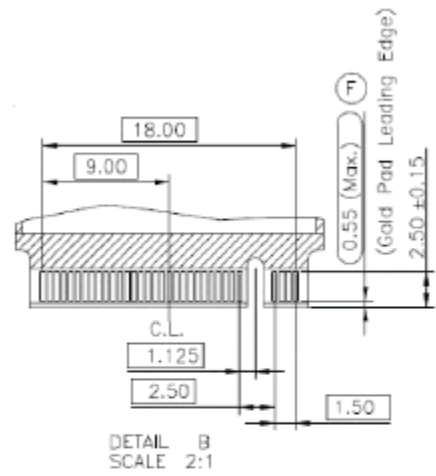
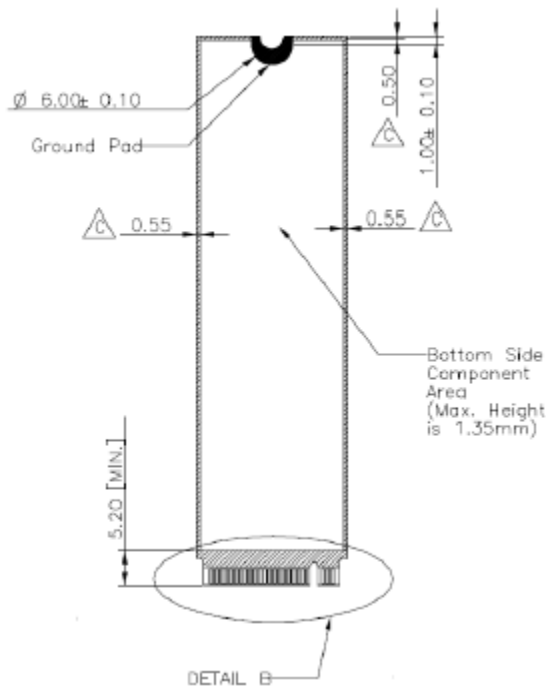
2.1 Single-sided Dimensions

Parameter	Unit	256GB	512GB	1TB	2TB
Length	mm	80.00 ± 0.15			
Width		22.00 ± 0.15			
Height (Max.)		2.15			
Weight	g ± 5%	7.6			

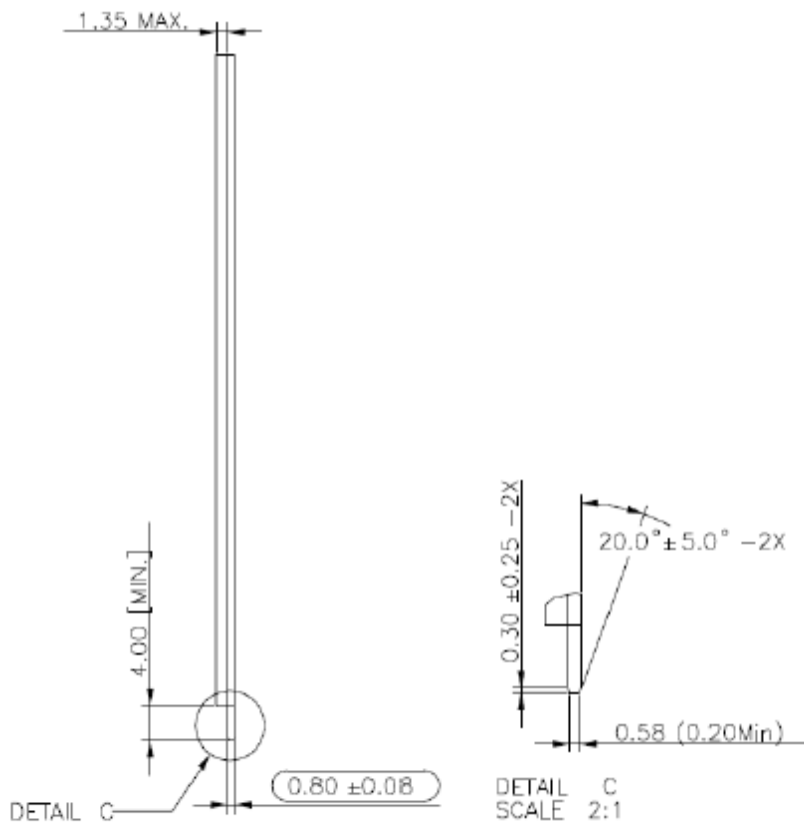
Top View



Bottom View



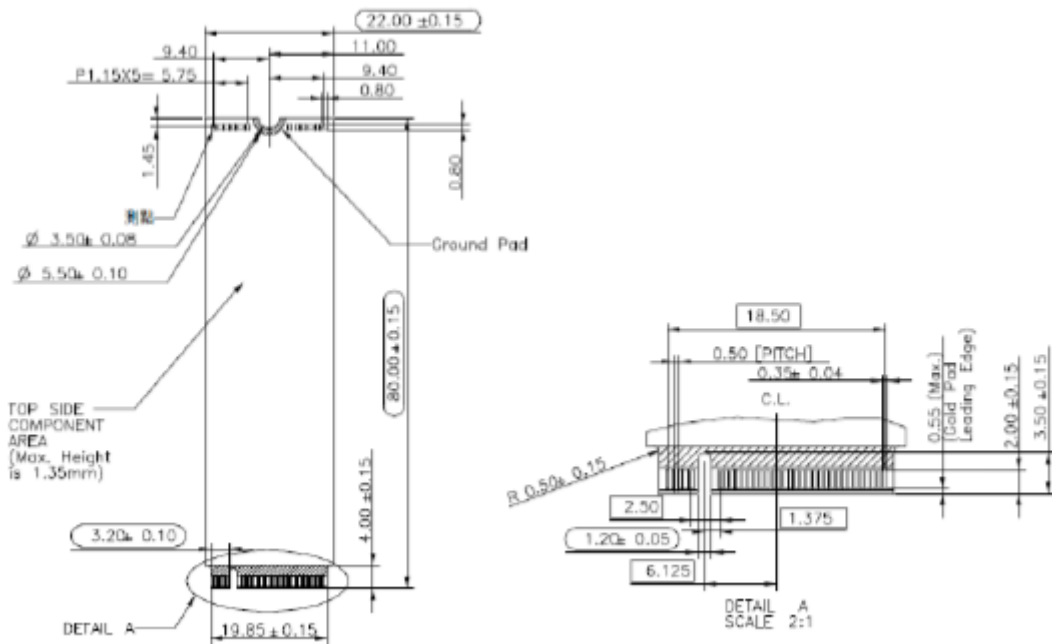
Side View



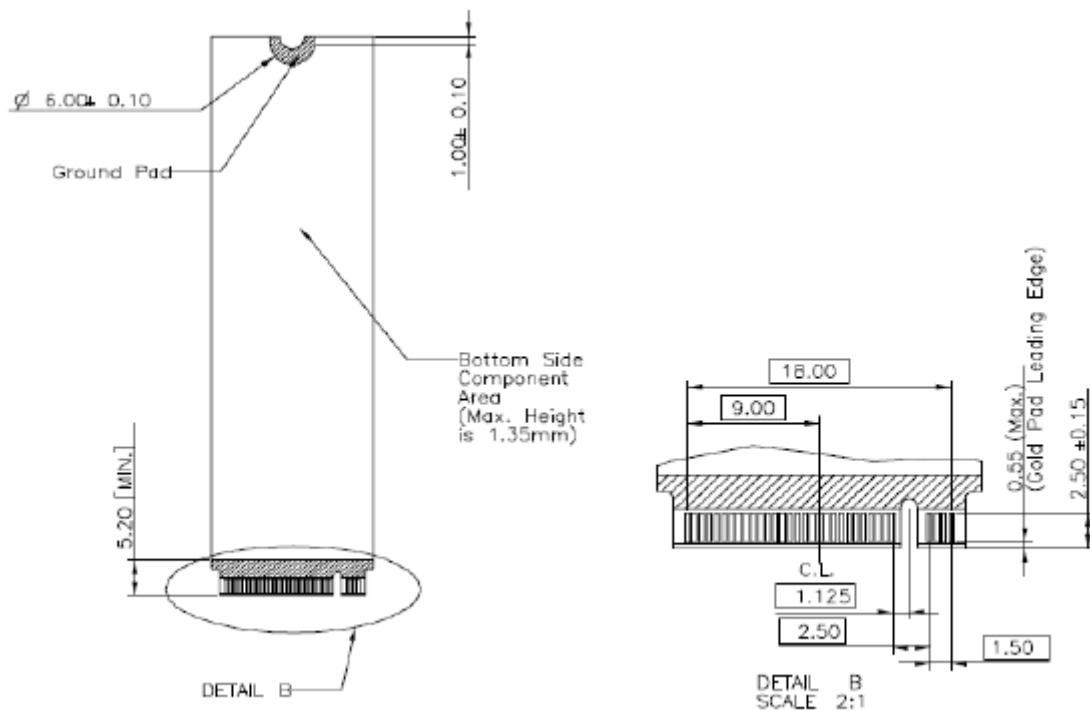
2.2 Double-sided Dimensions

Parameter	Unit	256GB	512GB	1TB	2TB
Length	mm	80.00 ± 0.15			
Width		22.00 ± 0.15			
Height (Max.)		3.50			
Weight	g ± 5%	10.2			

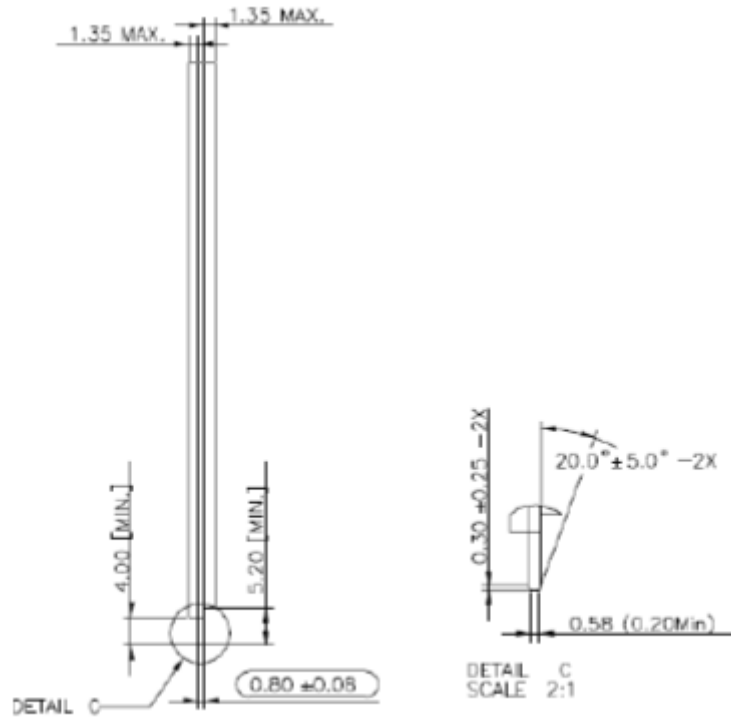
Top View



Bottom View



Side View



3. Product Ordering Information

Capacity	Bulk P/N	Retail P/N
256GB	AP256GAS2280Q4L	AP256GAS2280Q4L-1
512GB	AP512GAS2280Q4L	AP512GAS2280Q4L-1
1TB	AP1TBAS2280Q4L	AP1TBAS2280Q4L-1
2TB	AP2TBAS2280Q4L	AP2TBAS2280Q4L-1

Revision History

Revision	Description	Date
1.0	Initial release	4/19/2023
1.1	Updated Performance and Endurance on Specifications Overview page	7/14/2023
1.2	Updated Power Consumption on Specifications Overview page	7/23/2024
1.3	Added 256GB support	2/12/2025

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