

Controller

**PS3111-S11T**

Features	Specifications
<b>Host Interface</b>	<ul style="list-style-type: none"> <li>• SATA III (Bandwidth: 6Gb/s)</li> <li>• Compliance with SATA Revision 3.2</li> </ul>
<b>Processor</b>	<ul style="list-style-type: none"> <li>• Single-CPU architecture with built-in 32-bit microcontroller</li> <li>• UMC 40nm process technology</li> </ul>
<b>Flash Controller</b>	<ul style="list-style-type: none"> <li>• Up to 2 Channels with 16 chips enable (CE)</li> <li>• Flash transfer rate up to 533MT/s</li> <li>• Capacity up to 1TB</li> <li>• Support 2D SLC/MLC, and 3D TLC/QLC NAND flash memory</li> <li>• Compliance with Toggle 2.0 and ONFi 4.0</li> <li>• Flash I/O operating voltage supply 1.2V/1.8V</li> </ul>
<b>DRAM Controller</b>	<ul style="list-style-type: none"> <li>• DRAM-less</li> </ul>
<b>Data Reliability</b>	<ul style="list-style-type: none"> <li>• Phison 2nd generation LDPC ECC engine</li> <li>• End-To-End Data Path Protection</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>• Sequential Read up to 550MB/s</li> <li>• Sequential Write up to 500MB/s</li> <li>• 4K Random Read up to 90K IOPS</li> <li>• 4K Random Write up to 85K IOPS</li> </ul>
<b>Power Management</b>	<ul style="list-style-type: none"> <li>• DEVSLP &lt; 5mW</li> </ul>
<b>Temperature Range</b>	<ul style="list-style-type: none"> <li>• Operating range: 0~70°C</li> <li>• Storage range: -40~85°C</li> <li>• Operating junction temperature: -40~125°C</li> </ul>
<b>Package</b>	<ul style="list-style-type: none"> <li>• 169-ball LFBGA, 9 mm x 9 mm</li> </ul>
<b>Peripheral</b>	<ul style="list-style-type: none"> <li>• GPIO pins</li> <li>• Built-in JTAG function</li> <li>• Built-in UART function</li> <li>• I2C and SPI for external ROM</li> </ul>

## Solutions

## PS3111-S11T

Capacity <sup>1</sup>	30/32GB	60/64GB	120/128GB	240/256GB	480/512GB	960/1024GB
Interface	SATA III 6Gb/s					
Form Factor	2.5", M.2					
NAND Flash	2D MLC/TLC, 3D MLC/TLC/QLC					
<b>Performance (Up to)<sup>2,3</sup></b>						
Sequential Read	300 MB/s	550 MB/s	550 MB/s	550 MB/s	550 MB/s	550 MB/s
Sequential Write	125 MB/s	255 MB/s	450 MB/s	490 MB/s	500 MB/s	500 MB/s
4K Random Read	18K IOPS	35K IOPS	65K IOPS	77K IOPS	85K IOPS	90K IOPS
4K Random Write	29K IOPS	61K IOPS	81K IOPS	84K IOPS	85K IOPS	85K IOPS
<b>Power</b>						
Supply Voltage	2.5" 5V ± 5% ; M.2 3.3V ± 5%					
Active (Average)	1000 mW	1200 mW	1300 mW	1800 mW	2000 mW	2100 mW
Idle	325 mW	320 mW	320 mW	335 mW	335 mW	335 mW
DEVSLP	4.9 mW	4.9 mW	4.9 mW	4.9 mW	4.9 mW	4.9 mW
<b>Temperature</b>						
Operating	0°C - 70°C					
Non-Operating	-40°C - 85°C					
Advanced Features	<ul style="list-style-type: none"> <li>• Power Loss Data Protection</li> <li>• End-to-End Data Protection</li> <li>• Thermal Monitoring</li> </ul>					

<sup>1</sup> 1GB = 1,000,000,000 bytes

<sup>2</sup> 1MB/s = 1,000,000 bytes / second

<sup>3</sup> Performance is based on Crystal Disk Mark 6.0.0, test size 1GiB, and test drive set as secondary