

## PRODUCT BRIEF

### Intel® Solid-State Drive 313 Series

Non-Volatile Memory Storage Solutions from Intel

# Small yet amazing.

Minimal footprint. Maximum performance.

Optimize Ultrabook™ responsiveness with the Intel® SSD 313 Series caching solution featuring Intel® Smart Response Technology.

## Increase Responsiveness

Featuring Intel Smart Response Technology, the Intel SSD 313 Series boosts your computer's responsiveness with faster boot times, quicker application loads and overall snappier system response times. Because SSDs reduce spinning up of your hard drive, the Intel® SSD 313 Series delivers high performance with low power. This means longer battery life without sacrificing performance.

When used as a cache, the Intel SSD 313 Series works seamlessly with Intel Core™ processors, select versions of the 6 and 7 series of Intel Express Chipsets, and Intel Rapid Storage Technology drivers (10.5 and newer) to provide a fast caching solution.

## Ultrabook™ Ready

Optimized for Intel Rapid Start Technology and Intel Smart Connect Technology, the Intel® SSD 313 Series meets or exceeds the Ultrabook Responsiveness Requirements.

By combining an Intel SSD 313 Series and Intel® Rapid Start Technology, your computer can provide an "instant on" experience—enabling your PC to resume from hibernate mode at super speed.

The Intel SSD 313 Series makes Intel® Smart Connect Technology smarter by significantly reducing wait time for your email and cloud contents to sync with your computer. With Intel Smart Connect in action, your system wakes up at a pre-configured interval for a brief period to refresh your email and other cloud contents.

## Flexible Form Factor

Both capacities, 20GB and 24Gb, are available in either a 2.5 inch or mSATA form-factor. Desktops typically use the 2.5" format of the Intel SSD 313 Series, while Small Form-Factor (SFF) and All-In-One (AOI) systems use the mSATA solution which is up to eight (8) times smaller than a 2.5" hard drive, and weighs less than 10 grams.

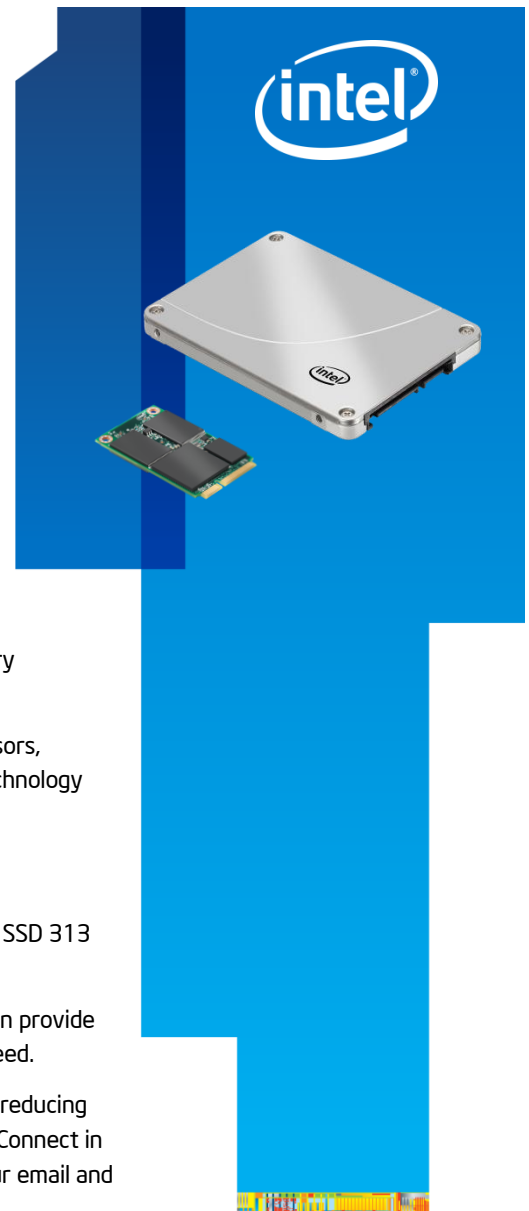
## Compute-Quality SLC NAND Equals High Endurance and Performance

The Intel SSD 313 Series utilizes the highest grade Intel 25 nanometer (nm) Single Level Cell (SLC) Compute NAND. The SLC NAND is the underlying technology behind the high performance and more than 10x endurance over Multi Level Cell (MLC) NAND. To the consumer this means an SSD cache with faster performance and longer life. With powerful Native Command Queuing that enables up to 32 concurrent operations and proven Intel architecture; the Intel SSD 313 Series drastically outperforms traditional hard disk drives.

## World-Class SSD Reliability

In addition to using the highest quality SLC 25nm NAND, the Intel SSD 313 Series offers the same level of outstanding quality and reliability testing established by previous Intel SSDs. The Intel SSD 313 Series also features low write amplification and a unique wear-leveling design for higher reliability, which means Intel SSDs not only perform better, they last longer.

Use the Intel SSD 313 Series as a fast caching solution and give your hard disk drive a break!



## Intel® Solid-State Drive 313 Series

Technical Specifications		
Model Name	Intel® Solid-State Drive 313 Series – Optimized for Intel® Smart Response Technology	
Capacity	20GB, 24GB	
NAND Flash Memory	25nm Intel NAND Flash Memory Single-Level Cell (SLC) Compute-Quality Components	
Bandwidth <sup>1</sup>	Sustained Sequential Reads: up to	Sustained Sequential Writes: up to
	<ul style="list-style-type: none"> <li>▪ 20GB 220 MB/s</li> <li>▪ 24GB 160 MB/s</li> </ul>	<ul style="list-style-type: none"> <li>▪ 20GB 100 MB/s</li> <li>▪ 24GB 115 MB/s</li> </ul>
Read Latency <sup>2</sup>	72 µs Typical	
Write Latency <sup>2</sup>	90 µs Typical	
Random I/O Operations per Second (4kB IOPS) <sup>3</sup>	Reads: up to	Writes: up to
	<ul style="list-style-type: none"> <li>▪ 20GB 36,000 IOPS</li> <li>▪ 24GB 33,000 IOPS</li> </ul>	<ul style="list-style-type: none"> <li>▪ 20GB 3,300 IOPS</li> <li>▪ 24GB 4,000 IOPS</li> </ul>
Interface	SATA 3Gb/s, compatible with SATA 1.5Gb/s	
Form Factor, Height and Weight	<b>Form Factor</b>	<b>Height / Weight</b>
	2.5 inch	9.5mm / up to 80 grams
	mSATA	3.6mm <sup>4</sup> / up to 10 grams
Life Expectancy	1.2 million hours Mean Time Between Failures (MTBF)	
Power Consumption	Active: 150 mW Typical <sup>5</sup>	Idle: 100 mW Typical <sup>6</sup>
Operating Temperature	0°C to 70°C	
RoHS Compliance	Meets the requirements of European Union (EU) RoHS Compliance Directives	
Product Health Monitoring and Data Migration	<ul style="list-style-type: none"> <li>▪ Intel® Solid-State Drive Toolbox with Intel® SSD Optimizer at <a href="http://www.intel.com/go/ssdtoolbox">www.intel.com/go/ssdtoolbox</a></li> <li>▪ Self-Monitoring, Analysis and Reporting Technology (S.M.A.R.T.) commands</li> </ul>	

<sup>1</sup> Performance varies by capacity and is measured using Iometer\* with Queue Depth 32.

<sup>2</sup> Based on sequential 4KB (4,096 bytes) transfers using Iometer with Queue Depth 1 workload. Write Cache enabled.

<sup>3</sup> Performance measured using Iometer with Queue Depth 32. Measurements are performed on 8GB of logical block address (LBA) range. Write Cache enabled.

<sup>4</sup> Total typical thickness of the SSD is less than the standard mSATA z-height specification of 4.85mm.

<sup>5</sup> Active power measured during execution of BAPCo MobileMark\* 2007 Workload with Device Initiated Power Management (DIPM) enabled.

<sup>6</sup> Idle power defined as SSD in idle mode with Device Initiated Power Management (DIPM) enabled

Solid-State Computing Starts with Intel Inside® For more information, visit [www.intel.com/go/ssd](http://www.intel.com/go/ssd)

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