

# PHANES-HR Series

MLC mini SATA III Module (MSR)



## Product Feature

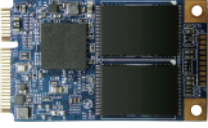
- MLC - NAND type flash technology
- mSATA module compatible with JEDEC Standard : MO-300A specification
- Compliant with SATA 1.0a/ 2.6/ 3.0 specification
- Capacity from 128GB up to 1TB
- S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology)
- Bootable for O.S. installation
- Maximum sequential read speed 540 MB/sec
- Maximum sequential write speed 520 MB/sec
- Supports DIPM/HIPM Mode

## Product Specification

<b>Compatibility</b>	<ul style="list-style-type: none"> <li>➤ SATA 1.0a, SATA 2.6 and SATA 3.0 Specification compliance</li> </ul>	<b>Power consumption</b>	<ul style="list-style-type: none"> <li>➤ Power requirement +5V ± 5%</li> <li>➤ Reading mode 2,380 mW (Max.)</li> <li>➤ Writing mode 3,600 mW (Max.)</li> <li>➤ Idle mode 615 mW (Max.)</li> </ul>
<b>Form-factor</b>	<ul style="list-style-type: none"> <li>➤ Standard mSATA form factor</li> <li>➤ Compliant with JEDEC MO-300A</li> </ul>	<b>Reliability</b>	<ul style="list-style-type: none"> <li>➤ Wear-Leveling Static and Dynamic wear-leveling algorithms</li> <li>➤ ECC 120 bits per 2K bytes block</li> </ul>
<b>Flash technology</b>	<ul style="list-style-type: none"> <li>➤ MLC-NAND type flash based</li> </ul>	<b>Physical specification</b>	<ul style="list-style-type: none"> <li>➤ Weight 8.0 g /0.3 oz.</li> <li>➤ Dimension(W x L x H) 29.80 x 50.80 x 3.20 (mm)</li> </ul>
<b>Host Interface</b>	<ul style="list-style-type: none"> <li>➤ mini PCI-e connector with 52 pins SATA pin out</li> </ul>	<b>Warranty</b>	<ul style="list-style-type: none"> <li>➤ MLC(standard/wide temp.) 2 years / Within 3k Erasing counts</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>➤ Data transfer rate SATA 1.5Gb/s, 3.0Gb/s, 6.0Gb/s</li> <li>➤ Sequential read 540 MB/sec (Max.)</li> <li>➤ Sequential write 520 MB/sec (Max.)</li> <li>➤ Random access time 0.1ms (estimated)</li> </ul>		
<b>Environmental specification</b>	<ul style="list-style-type: none"> <li>➤ Operating temp. STD. 0 °C~70 °C/W.T. -40 °C~+85 °C</li> <li>➤ Non-operating temp. STD. -20 °C~+80 °C/W.T. -50 °C~+95 °C</li> </ul>		
<b>Conformal coating.</b>	<ul style="list-style-type: none"> <li>➤ Option for wide temperature</li> </ul>		
<b>Humidity</b>	<ul style="list-style-type: none"> <li>➤ 10% ~ 95% non-condensing</li> </ul>		
<b>Vibration</b>	<ul style="list-style-type: none"> <li>➤ 80 Hz to 2K Hz, 20G, 3 axes</li> </ul>		
<b>Shock</b>	<ul style="list-style-type: none"> <li>➤ 0.5ms, 1500G, 3 axes</li> </ul>		
<b>Altitude</b>	<ul style="list-style-type: none"> <li>➤ 70,000 feet</li> </ul>		

Operating temperature supports standard grade 0°C ~ 70°C and wide temp. grade -40°C ~ +85°C

Part number list - MLC mini SATA III module

Product Picture	Capacity	0°C ~ 70°C	- 40°C ~ + 85°C
	<b>128GB</b>	SBMSR128G-PHCTMB	WBMSR128G-PHCTMB/C
	<b>256GB</b>	SBMSR256G-PHCTMB	WBMSR256G-PHCTMB/C
	<b>512GB</b>	SBMSR512G-PHCTMB	WBMSR512G-PHCTMB/C
	<b>1TB</b>	SBMSR001T-PHCTMB	WBMSR001T-PHCTMB/C

Remarks : Wide temperature grade -40°C ~ +85°C with special conformal coating treatment on PCBA.

**Part Number Decoder**



Example



**X1 Grade**

- S** : Standard grade operating temp. 0° C~70 ° C
- W** : Wide temp. grade operating temp. -40° C~+85 ° C

**X2 The material of casing**

- B** : Bare (without casing)

**X3 X4 X5 Product category**

**MSR** : mini SATA Flash Module (mSATA) SDRAM Cache

**X6 X7 X8 X9 Capacity**

- 128G** : 128GB    **512G** : 512GB
- 256G** : 256GB    **001T** : 1TB

**X11 Controller**

- P** : PHANES Series

**X12 Controller version**

- A, B, C, D.....**

**X13 Controller grade**

- C** : Commercial grade

**X14 Flash IC**

- T** : Toshiba NAND flash IC

**X15 Flash IC grade**

- M** : MLC-NAND flash IC

**X16 Generation**

- B** : 15 nm

**C Reserved for specific requirement**

- C** : Conformal-coating