

# Serial-Attached SCSI/Peripheral Component Interconnect Express (SAS/PCIe) 3.0

## HIGH SPEED DESIGN WITH FLEXIBILITIES

SAS/PCIe 3.0 connectors for next-generation servers with 12Gb/s speeds. The 68-position, SAS/PCIe receptacle and header enables implementation of high speed Serial Attached SCSI (SAS) hard disk drive (HDD) interface as well as Peripheral Component Express (PCIe)-based devices.

- Compatible with SFF8639 specification
- Capable of meeting 12Gb/s SSDs and HDDs or PCIe based devices at 8Gb/s
- Molded guide post allows device plug and receptacle to self-align during mating process
- Footprint backward compatible to 6G and 3G SAS connectors



### TARGET MARKETS



## FEATURES

- Receptacles are intermateable with unshielded dual port SFF8680 (SAS 3.0) connectors
- SAS/PCIe connectors enable SFF8630, SFF8680 and SFF8432 interface
- Backward compatible with 6Gb/s SAS, SATA and 3Gb/s SFF8482 connectors
- Supports up to 4 ports PCIe based devices
- Supports both SAS and SATA drives
- Staggered contact lengths
- Stamped clips act as connector retainers for robust PCB attachment
- Molded guideposts help mating halves to self-align by providing angled lead-ins

## BENEFITS

- Offers flexibility in component selection
- Implementation of high speed SSDs (Solid State Drives) and HDDs (Hard Disk Drives)
- Allows compatibility between unshielded dual and multiport
- Same interface can be used for cost-effective storage HDDs as well as higher performance server SSDs
- Improves performance and faster file transfers
- Addresses the needs of both mission critical and bulk storage applications
- Provides sequential contact mating for hot plugging
- Provide additional mechanical strength after soldering
- Compensates for connector misalignment

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### TECHNICAL INFORMATION

#### MATERIAL

- Contact Base Metal: Copper Alloy
- Contact Area Plating: Gold over Nickel
- Solder Tail Plating: Tin over Nickel
- Retainer Clip Base Metal: Copper Alloy
- Retainer Plating: Tin over Nickel
- Housing: Halogen-free High Temperature Thermoplastic (UL94V-0), Black

#### ELECTRICAL PERFORMANCE

- Contact Resistance: 30mΩ max. for signal contacts. Per EIA 364-23
- Current Rating: 1.5A min. per contact with temperature rise not exceeding 30°C (power pins only: P1-P15). Per EIA 364-70B
- Insulation Resistance: 1000MΩ min. per EIA 364-21

#### MECHANICAL PERFORMANCE

- Durability: 500 mating cycles
- Mating Force: 59N max.
- Unmating Force: 12N min.

#### ENVIRONMENTAL

- Humidity: 96 hours at 40°C with 90-95% relative humidity. Per EIA 364-31, Method II, test condition A
- Temperature Life: 85°C for 500 hours. Per EIA 364-17 test condition III, method A
- Thermal Shock: 10 cycles between -55°C to +85°C. Per EIA 364-32, test condition I
- Mixed Flow Gas: Expose ½ samples unmated for 7 days and then mated for 7 additional days; the other ½ samples are exposed mated for 14 days. Per EIA 364-65, class II A exposed mated for 14 days. Per EIA 364-65, class II A

#### SPECIFICATIONS

- Amphenol Product Specification: GS-12-282 and SSAS009

#### PACKAGING

- Tape and Reel
- Tray

#### TARGET MARKETS/APPLICATIONS



Processor and Storage Blade Mezzanine Card



HDD  
HDD Carrier  
External Storage System  
Interposer Card  
Server  
Storage Server  
Processor and Storage Blade

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### PART NUMBERS

| 12G SAS/PCIe Receptacle |             |                  |           |              |             |            |             |        |
|-------------------------|-------------|------------------|-----------|--------------|-------------|------------|-------------|--------|
| Performance             | Orientation | Termination Type | Retainers | Locator Post | Height (mm) | Mount Type | Std/Reverse | Others |
| 12Gb/s                  | Vertical    | SMT              | SMT       | Yes          | 8.15        | Top mount  | Standard    | -      |
| 12Gb/s                  | Vertical    | SMT              | DIP       | Yes          | 8.15        | Top mount  | Standard    | -      |
| 12Gb/s                  | Vertical    | SMT              | Harpoon   | Yes          | 8.15        | Top mount  | Standard    | -      |
| 12Gb/s                  | Vertical    | SMT              | SMT       | Yes          | 14.15       | Top mount  | Standard    | -      |
| 12Gb/s                  | Vertical    | SMT              | SMT       | Yes          | 8.15        | Top mount  | Standard    | 85ohm  |
| 12Gb/s                  | Right angle | Hybrid           | DIP       | Yes          | 1.75        | Sink type  | Standard    | -      |
| 12Gb/s                  | Right angle | SMT              | SMT       | No           | 2.85        | Top mount  | Standard    | -      |
| 12Gb/s                  | Right angle | SMT              | DIP       | Yes          | 2.85        | Top mount  | Standard    | 85ohm  |
| 12Gb/s                  | Right angle | SMT              | Harpoon   | Yes          | 2.85        | Top mount  | Standard    | -      |
| 12Gb/s                  | Right angle | SMT              | DIP       | Yes          | 2.85        | Top mount  | Reverse     | -      |
| 12Gb/s                  | Right angle | SMT              | SMT       | Yes          | 7.07        | Top mount  | Standard    | -      |

| 12G SAS/PCIe Header |             |                  |           |              |             |                |             |              |
|---------------------|-------------|------------------|-----------|--------------|-------------|----------------|-------------|--------------|
| Performance         | Orientation | Termination Type | Retainers | Locator Post | Height (mm) | Mount Type     | Std/Reverse | Others       |
| 12Gb/s              | Vertical    | SMT              | SMT       | Yes          | 8.35        | Top mount      | Standard    | -            |
| 12Gb/s              | Vertical    | SMT              | SMT       | Yes          | 7.00        | Top mount      | Standard    | -            |
| 12Gb/s              | Right angle | SMT              | SMT       | Yes          | 2.55        | Sink type      | Standard    | -            |
| 12Gb/s              | Right angle | SMT              | SMT       | Yes          | 2.80        | Sink type      | Standard    | -            |
| 12Gb/s              | Right angle | SMT              | SMT       | Yes          | 4.00        | Sink type      | Standard    | -            |
| 12Gb/s              | Right angle | SMT              | SMT       | Yes          | 4.30        | Sink type      | Standard    | -            |
| 12Gb/s              | Right angle | SMT              | Harpoon   | No           | 5.30        | Top mount      | Standard    | -            |
| 12Gb/s              | Right angle | SMT              | -         | -            | 0.45        | Straddle mount | Standard    | with SIO pin |
| 12Gb/s              | Right angle | SMT              | -         | -            | 0.08        | Straddle mount | Standard    | -            |
| 12Gb/s              | Right angle | SMT              | Harpoon   | No           | 4.90        | Top mount      | Standard    | -            |

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#### Disclaimer

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