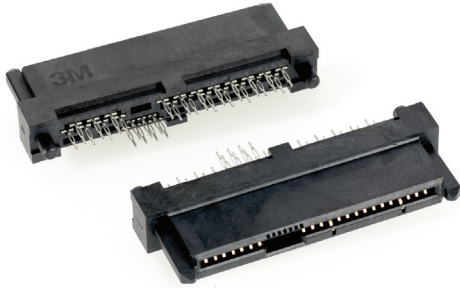
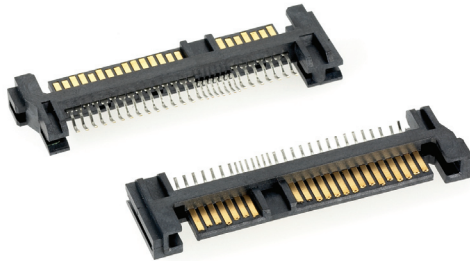




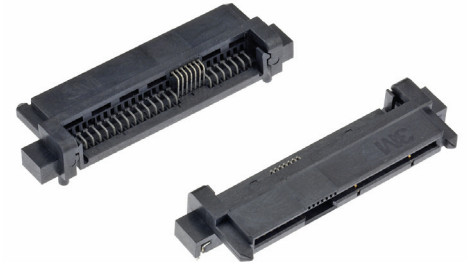
Serial Attached SCSI (SAS) Connectors, 1.27 mm



3M Serial Attached SCSI (SAS) Connector, Boardmount Compliant Pin, Vertical Elevated Receptacle, SBR Series



3M Serial Attached SCSI (SAS) Connector, Straddlemount Plug, SBH Series



3M Serial Attached SCSI (SAS) Connector, Boardmount Right Angle Through Hole Receptacle, SBR Series

3M™ Serial Attached SCSI (SAS) Connector Provides Smaller, Faster and More Reliable Solutions for Storage Interface.

3M Serial Attached SCSI (SAS) Connectors are a next generation, high-speed interface for optical and hard disk drive (HDD) applications aimed at reducing size, increasing transmission speed, and improving data reliability and ease of use.

The development of SAS started during late 2001. Later it was transferred to the ANSI T10 Organization for its development and standardization. In 2001, Compaq, IBM, LSI Logic, Maxtor and Seagate Technology formed the SAS Working Group. The objective of the development of SAS is to serve desktop PC, workstation, servers, mid-line storage, main stream storage and also large enterprise storage for Storage Area Network (SAN)/Network Attached Storage (NAS). The working group now has more than 25 companies.

3M SAS Connector components are designed on a 1.27 mm (0.05") in-line contact pitch and are recognized in three different segments. The first segment is the primary signal portion. SAS signals have been condensed into a very simple seven contact format. 3M SAS Signal Connectors rely on two differential pairs (four contacts), which are surrounded and separated by three ground contacts (G-SS-G-SS-G). The two pairs serve as the transmit (Tx) and receive (Rx) contacts while the three grounds also function as the EMLB contacts making the 3M SAS Connector hot pluggable.

The second segment of SAS connectors is called secondary signal port. This secondary port provides a redundant path for each drive and enables dual port operation. This path helps in the event of controller failover. This secondary signal segment also has 7 pins, but the pitch is 0.8 mm (0.032"), compared to 1.27 mm (0.05") of the primary signal segment. It also relies on the two differential pairs (four contacts), which are surrounded and separated by three ground contacts (G-SS-G-SS-G). The two pairs serve as the transmit (Tx) and receive (Rx) contacts while the three grounds also function as the EMLB contacts making the 3M SAS Connector hot pluggable.

The third interface recognized in the 3M SAS Connector is the power segment. The power segment is comprised of 15 contacts. At first glance, 15 contacts seem excessive for a power connector. The reason for 15 contacts is to accommodate three primary voltage ranges (3.3V, 5V and 12V). Each voltage is allocated three contacts for standard power: positive (+), negative (-) and ground (G). This leaves six additional contacts in the power interface, five of which are used for ground and one for ready LED.

Technical Information

- SFF 8482 Standard
- 1.27 mm In-line Contacts
- EMLB Contacts for HOT Plugging
- Extended Height Combo Receptacle for Backplane
- Low Voltage Requirement (1600 mV peak to peak)
- Point-to-Point Signaling
- Accommodates 3.3, 5.0 and 12v requirements
- Blind Mate Guide
- 2.5" and 3.5" HDD Interface
- Serial Advanced Technology Attachment (SATA) Interoperability
- RoHS Compliant*

* "RoHS compliant" means that the product or part does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's knowledge and belief based on information provided by third party suppliers to 3M.

3M™ Serial Attached SCSI (SAS) Connectors are offered in both device plug and backplane receptacle combo formats and are designed to the SFF 8482 Standard. This standard was designed to support internal backplane environments which allow a direct connection from the hard disk drive (HDD) to the backplane (device-to-host). The 3M SAS Combo Plug, 29 position, is used on the device side (optical or HDD) and has a variety of features that makes it appealing for high volume environments. The plug connector is available in two different configurations: surface mount, vertical and straddlemount, right angle. The surface mount plug version is equipped with PCB guides to ensure the proper alignment between the HDD PCB and connector contact tails. The 3M SAS Drive Plug, 29 position, is designed for interoperability with the 22 pin combo Serial Advanced Technology Attachment (SATA) receptacles where single port transmission is required.

3M Part Number	Configuration	Tech Sheet
SBH-ST-29-SA-ML	29 position Straddle Mount Drive Plug, Right Angle	TS-2179
SBH-ST-29-SM-ML	29 position Surface Mount Drive Plug, Vertical	TS-2178

The 3M 29 position SAS Backplane Receptacle Connectors are available in several configurations and PCB attachment styles. The elevated, vertical, press-fit receptacle provides an additional 3.15 mm stand-off for the HDD. This allows installation of the HDD without fear of interference or damage to the backplane.

3M Part Number	Configuration	Tech Sheet
SBR-ST-29-P-ML	29 position Vertical, Press-fit, Backplane Receptacle	TS-2176
SBR-EV-29-P-ML	29 position Elevated, Vertical, Press-Fit, Backplane Receptacle	TS-2177
SBR-RA-29-S-ML	29 position Right Angle, Through Hole, Backplane Receptacle	TS-2180

All 3M SAS Connector are designed to interface with 2.5" and 3.5" HDD.

3M is a trademark of 3M.

Important Notice

Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

Warranty; Limited Remedy; Limited Liability.

3M's product warranty is stated in its Product Literature available upon request. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.



3M Electronics

6801 River Place Blvd.
Austin, TX 78726-9000
800 225 5373
www.3M.com/electronics

Please Recycle

Printed in USA.
80-4000-1948-7
© 3M 2006. All Rights Reserved.