3M™ High-Speed Card-Edge Connector SPD08
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15 Gbps Board-to-Board and 25 Gbps Wire-to-Board Connector
Product Features and Benefits

- High Density 0.8 0mm pitch SMT BM Socket, B-T-B / W-T-B application;

- High speed signal transmission performance up to 15 Gbps (B2B) and 20 Gbps (W2B)
- Flexible stack height, from 16 mm to 40 mm
- Robust tolerance for misalignment - 0.8 mm in axis X, Y, 1.0 mm in axis Z (at 30 mm stack height)
- Current carrying capacity up to 3.0A (single pin); 0.5 A current rating fully loaded
- High temp LCP resin for plastic housing (withstand 260 ºC lead-free SMT)
Board-to-Board Application

Spring contact can accept 1.57+/-0.16 mm thick mating card with lower insertion force, average 0.40N/Pin. (mated with 1.57 mm thick card)
3M™ High-Speed Card-Edge Connector SPD08 +
3M™ Twin Axial Cable Application

Paddle Card design

Right Angle

Typically used for internal protocols such as PCI Express

Connector latching mechanism maintains secure connection of twin axial cable assembly.

Vertical
Typical Applications

Base Stations, Servers, Hubs, Switches, Routers
3M Electronic Solutions Division

Ordering Information

SPD08 - XXX - X - XX - XX

NO OF POSITIONS
020, 040, 060
064, 080, 100, 120, 140,
160, 180, 200

LATCHING OPTION
BLANK= W/O LATCH
L = WITH LATCH

PACKAGING OPTION
BLANK= TRAY
TR= TAPE & REEL (Std. Option)

PLATING OPTION
RB= 0.76um GOLD (Std. Option)
RA= 0.25um GOLD

All positions are not tooled. Please refer to sales drawing for currently tooled positions.
B2B Performance Test
Test Ports and DUT Descriptions

Channel A
Channel B
Channel C
Channel D

DUT Test Channels
DUT Pin Mapping (GSSGSSG)

Samples A
Samples B
Samples C
DUT Samples
3M™ High-Speed Card-Edge Connector SPD08 Insert Loss(SDD21) & Return Loss(SDD11) for the “GSSGSSG”

Test Curves for the Samples A, Samples B and Samples C.

Insertion Loss 7.5GHz@-3dB
W2B Performance Test
3M™ Twin Axial Ribbon Cable Example

Reliable, Simultaneous, Consistent Ribbon termination
3M™ Twin Axial Ribbon Cable Features and Benefits

- **Thin and Foldable** enables excellent system density and “routability”
  - Thin profile enables enhanced routability for internal applications
  - Can be folded at very tight bend radii with virtually no performance sacrifice

- **Electrical Performance**
  - **High Bandwidth**: unique longitudinal shield has resonant free insertion loss up to at least 20 GHz
  - Excellent EMI performance

- **Ribbon construction fixes locations of signals and grounds improves the termination process**
  - Efficient termination process with no wire routing errors
  - Reduced termination variability improves reliability
**3M™ High-Speed Card-Edge Connector SPD08 and 3M™ Twin Axial Ribbon Cable Assembly Example**

3M SPD08 0.8 mm Board-to-Board Connector
(Paddle-card/Card-edge compatible)

3M Twin Axial Ribbon Cable terminated to a paddlecard
3M™ High-Speed Card-Edge Connector SPD08 + 3M™ Twin Axial Cable Plug Design...

Paddlecard design

Length 2.1” with latches open
80 total contacts

0.750 max height
3M™ High-Speed Card-Edge Connector SPD08 +
3M™ Twin Axial Cable Assembly Prototype…

Right Angle

Vertical

Paddlecard design
3M™ High-Speed Card-Edge Connector SPD08

Paddlecard example

Cable termination side
( EXAMPLE ONLY – can vary depending on application reqs )

18 x 2 = 36 contacts

22 x 2 = 44 contacts

SPD08 connector 80 contacts total

4 prs GSSGGSSG...
5 prs +1 sideband + 2 gnds

Cable Termination Pads A side
Pad Length 0.098 [2.50]
19X Pad Width 1: 0.018 [0.46]
10X Pad Width 2: 0.014 [0.36]

0.142 [3.60] Edge to End of Pad

0.031 [0.80] Pad Pitch
Two SPD08 boardmount connectors and two paddle card connectors interconnected by 0.5 meter 30(1) SPC twin axial cable with semi-rigid launches.
DUT 6 GHz – 3 dB point

½ meter 30 AWG SPC 3M™ Twin Axial Cable Assembly

+ 2 each 3M™ High-Speed Card-Edge Paddlecard Connectors

+ 2 each 3M High-Speed Boardmount Connectors SPD08
6 Gbps / 50 ps rise time > 85% opening factor

½ meter 30 AWG SPC 3M™ Twin Axial Cable Assembly
+ 2 each 3M™ High-Speed Card-Edge Paddlecard Connectors
+ 2 each 3M High-Speed Boardmount Connectors SPD08
10 Gbps / 35 ps rise time > 80% opening factor

½ meter 30 AWG SPC 3M™ Twin Axial Cable Assembly
+ 2 each 3M™ High-Speed Card-Edge Paddlecard Connectors
+ 2 each 3M High-Speed Boardmount Connectors SPD08
20 Gbps / 15 ps rise time  > 67% opening factor

½ meter 30 AWG SPC 3M™ Twin Axial Cable Assembly
+ 2 each 3M™ High-Speed Card-Edge Paddlecard Connectors
+ 2 each 3M High-Speed Boardmount Connectors SPD08
25 Gbps / 10 ps rise time > 57% opening factor

½ meter 30 AWG SPC 3M™ Twin Axial Cable Assembly
+ 2 each 3M™ High-Speed Card-Edge Paddlecard Connectors
+ 2 each 3M High-Speed Boardmount Connectors SPD08
3M™ Twin Axial Cable, SL8800 Series

- Wide range of AWG sizes with 85 ohm and 100 ohm differential impedance pairs
- Various pair and sideband combinations for differential pair serial interfaces such as Mini-SAS, and PCIe Gen 2 and Gen 3, SFP and QSFP applications
- Examples of standard cable designs with and without sidebands...

8801 series

8802 series

Drawings available at www.3Mtwinox.com
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