



**TDP® (Triad® Differential Pair)
I/O System Suitable for
PCIe x1 Applications
1.27mm (.050") Pitch**

Vertical receptacle for ruggedized applications now available to extend Molex's innovative TDP product line, which uses a "triad" design of differential signal and ground lines to achieve bandwidths of 5.0 Gbps and beyond

TDP connectors provide a shielded, dual-row, cable-to-board interface offering mid-range speed (up to 5 Gbps) and 100-ohm controlled impedance. The product line consists of fully-shielded receptacles: Right-Angle Surface Mount and Vertical Through-Hole Receptacle; Plug; and Cable-Plug Kit which provide maximum electromagnetic interference/radio frequency interference (EMI/RFI) protection.

Only the TDP 18-circuit interconnect versions, including right-angle and vertical receptacles, plugs and cable assemblies) are compliant with the External PCIe x1 Standard Interface. External PCI Express is a new, multi-purpose, hot-pluggable input/output (I/O) interface that can be used across the computing industry, from mobile equipment through high-end servers as well as communication equipment.

The vertical through-hole receptacle provides a ruggedized option for applications where higher PCB

retention is required. The right-angle SMT receptacle optimizes PCB routing and the low-profile design, 1.27mm (.050") pitch, makes TDP an excellent choice where height considerations are a factor. TDP Connectors are available in sizes of 18, 28 and 48 circuits. The TDP Plug-Cable Kit features jackscrews for reliable mating retention. Molex's global cabling facilities ensure that users' cost, delivery and design needs are optimized.

Designed for a high cycle life (5000 cycles min.) with the Low Force Helix™ (LFH) contact design, TDP interconnects provide long-term performance and reliability. The recessed contacts protect signal lines from electrostatic discharge (ESD), support mating alignment and provide contact protection during operator handling. For additional product information on Molex's TDP interconnect offering, visit: www.molex.com/product/tdp.html.

- 76641** Vertical Receptacle, Through-Hole, PCIe x1 18-Circuit
- 74960** Right-Angle Receptacle, SMT, 18-, 28-, 48-Circuit
- 75000** Plug, 18-, 28-, 48-Circuit
- 74155** Plug, PCIe x1, 18-Circuit
- 75115** Cable-Plug Kit, 18-, 28-, 48-Circuit
- 79925** Cable Assemblies, Metal Shell, 18-, 28-, 48-Circuit
- 74576** Cable Assemblies, Overmolded, 18-Circuit

Features and Benefits

- Shielded, dual-row cable-to-board, input/output system provides high-speed and controlled impedance
- Tape and reel packaging for receptacle ensures high-volume PCB processing
- 5000 mating cycles with 15µ" Gold (Au) provide high reliability
- Split-beam receptacle contact provides 2 points of contact for optimal signal integrity
- 1.5A continuous power per pin allows for higher power throughput
- Lead-free process compatible and RoHS compliant meets future manufacturing requirements
- Vertical receptacle designed for through-hole soldering provides a ruggedized option for applications where higher PCB retention is required

SPECIFICATIONS

Reference Information

Packaging: Tape and reel
 UL File No.: TBD
 CSA File No.: TBD
 Mates With: Series 74155 and 75000 Plug, Series 79925 and 74576 Cable Assemblies

Electrical

Voltage (max.): 40V
 Current (max.): 1.5A
 Contact Resistance: 20 milliohms max.
 Dielectric Withstanding Voltage: 500V
 Insulation Resistance: 100 Megohms min.
 Differential Impedance:
 2.5 Gbps 100+/-10ohm @ 150 psec rise time
 5.0 Gbps 100+/-15ohm @ 75 psec rise time

Mechanical

Contact Insertion Force: 0.60N (0.13 lbf) per circuit
 Insertion Force to PCB: 44.50N (10.00 lbf) total
 Mating Force: 11.17N (2.51 lbf) per circuit
 Unmating Force: 6.7N (1.5 lbf) per circuit
 Durability: 5000 cycles

Physical

Housing: Black LCP UL 94V-0
 Contact: Copper (Cu) Alloy
 Plating:
 Contact Area — 15µ" (0.38µm) Gold (Au)
 Solder Tail Area — Matte Tin (Sn)
 Underplating — Nickel (Ni)
 RoHS Compliant: Yes
 Operating Temperature: -20 to +85°C



Introducing the TDP PCIe x1 Vertical Through-Hole Receptacle Series 76641



Complete TDP I/O System

APPLICATIONS



TDP® (Triad® Differential Pair) I/O System Suitable for PCIe x1 Applications 1.27mm (.050") Pitch

- Computers
- Modular I/O hubs
- High-speed peripheral devices
- Notebooks
- Express Card* Memory Modules
- Consumer devices
- Industrial equipment
- High-end digital cameras
- Document cameras
- HDTV consol stations and devices
- TV tuners
- High-end device interconnection
- CAD stations
- Test equipment
- Instrumentation equipment
- High-end printers
- Medical imaging



ExpressCard Memory Card Module

Molex x1 TDP Cable Assembly Mating to a x1 TDP Receptacle

*Express Card is a registered trademark of the PCMCIA Association

ORDERING INFORMATION

Receptacles

Order No.	Orientation	Circuit Size	Mounting Style	PCIe x1 Compliant
76641-0001	Vertical	18	Through-Hole	Yes
74960-3018	Right-Angle	18	Surface Mount	
74960-3028		28		
74960-3048		48		No

Plugs

Order No.	Orientation	Circuit Size	Mounting Style	PCIe x1 Compliant
75000-1018	Vertical	18	Welding or Soldering Mounting Style	Yes
74155-0001		18		
75000-1028		28		No
75000-1048		48		

Plugs Kits

Order No.	Orientation	Circuit Size	Mounting Style	PCIe x1 Compliant
75115-X018 [†]	Vertical	18	Welding or Soldering Mounting Style	Yes
75115-X028 [†]		28		No
75115-X048 [†]		48		

[†]X Denotes Jackscrew and Finish Options: 0 = 4-40, Black; 1 = M3, Black; 2 = 4-40, Nickel (Ni); 3 = M3, Nickel (Ni); 4 = 4-40, Black/Nickel (Ni); 5 = M3, Black/Nickel (Ni)



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Cable Assemblies – PCIe x1 Compliant, Plastic Overmolded

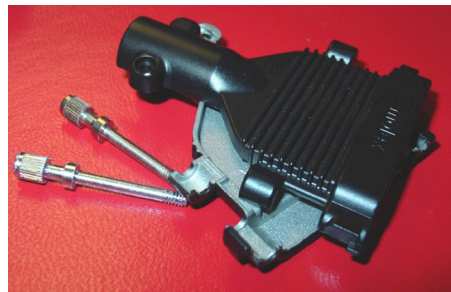
Order No.	PCIe x1 Compliant	Circuit Size	Cable Length	Wire Gauge (AWG)
74576-0000	Yes	18	0.50m (1.64')	28
74576-0001			1.00m (3.28')	
74576-0002			2.00m (6.56')	
74576-0003			3.00m (9.84')	
74576-0004			4.00m (13.12')	26
74576-0005			5.00m (16.40')	
74576-0006			6.00m (19.68')	
74576-0007			7.00m (22.97')	24

Cable Assemblies – Metal Shell

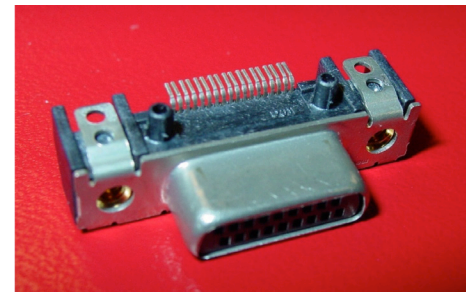
Order No.	PCIe x1 Compliant	Circuit Size	Cable Length	Jackscrew	Wire Gauge (AWG)
79925-0001	Yes	18	1.00m (3.28')	4-40	28
79925-0002			3.00m (9.84')		
79925-0003			1.00m (3.28')	M3	
79925-0004			3.00m (9.84')		
79925-0005	No	28	1.00m (3.28')	4-40	
79925-0006			3.00m (9.84')		
79925-0013			1.00m (3.28')		
79925-0014			3.00m (9.84')		



TDP PCIe x1 Vertical Through-Hole Receptacle Series 76641



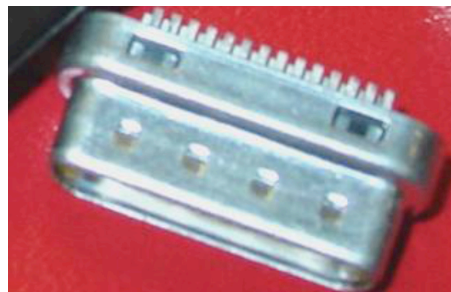
TDP Cable-Plug Kit Series 75115



TDP Right-Angle SMT Receptacle Series 74690



TDP Metal Shell Cable Assembly Series 79925



TDP Plug Series 75000 and 74155



TDP Overmolded Cable Assembly Series 74576

<http://www.molex.com/product/tdp.html>

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