

0.50mm (.020") Pitch

DisplayPort\* External Connectors



## INTRODUCTION



# DisplayPort\* 0.50mm (.020") Pitch External Connectors

## Broadest Range of DisplayPort Interconnect Solutions For PC and CE Applications

DisplayPort is a scalable system capable of delivering 1, 2 or 4 lanes of High-Definition video at 2.7Gbps per lane up to a maximum of 10.8Gbps. DisplayPort is also capable of delivering Audio signaling.

Molex offers one of the broadest range of interconnect solutions to support this newest digital display interface standard set by VESA®. Molex has received the VESA DisplayPort Compliance Certification for its DisplayPort products.

Our receptacles are available in standard SMT, reverse-mount, mid-mount and through-hole versions. They are designed with a polarized D-shape mating interface and metal shield for full EMI/RFI protection.

The cable assemblies come as high bit-rate type in 2m and 3m lengths with latch and non-latch

versions. A 15m length cable assembly with latch is available as reduced bit-rate type or as a low cost AWG28 version.

For manufacturers who require solution for direct drive monitors, we can customize the captive cable assemblies to your request and specifications up to 2.7Gbps per lane and up to 10.8Gbps link capacity per 4 lanes.

For devices that need to be connected to existing HDMI, DVI or VGA port, Molex offers a variety of DisplayPort adapters and dongles.

To facilitate easy testing and validation of your DisplayPort system, Molex offers a second generation electrical board to test all the critical parameters.



*Molex's DisplayPort products are certified to comply with VESA DisplayPort Compliance Certification and DisplayPort Multimode requirements.*

## APPLICATIONS

- Game Consoles
- Monitors
- Personal Computers
- Projectors
- Set-Top Boxes
- TV Displays
- Workstations



## PRODUCT OFFERINGS

Receptacles	Cable Assemblies	Captive Cable Assemblies	Dongles & Adapters	Test Board
■ SMT Mount	■ 3m HBR w/ Latch	■ WQXGA @ 4-Lane 2.7Gbps	■ DP-DVI	■ Second Generation Test Board
■ Reverse SMT Mount	■ 3m HBR w/o Latch	■ 1080p @ 4-Lane 1.6Gbps	■ DP-HDMI	
■ Mid-Mount	■ 2m HBR w/ Latch	■ WUXGA @ 2-Lane 2.7Gbps	■ DP-VGA	
■ Reverse Mid-Mount	■ 2m HBR w/o Latch	■ 1080i @ 2-Lane 1.6Gbps	■ Option For Additional TVS Transient Voltage Suppression	
■ 2-Row Through-Hole	■ 15m RBR w/ Latch	■ SXGA @ 1-Lane 2.7Gbps		
	■ 15m AWG28 w/ Latch	■ XGA @ 1-Lane 1.6Gbps		

HBR = High Bit Rate; RBR = Reduced Bit Rate

\* VESA, VESA Logo, DisplayPort Word Mark, DisplayPort Certification Compliance Logo and DisplayPort Multimode Icon are trademarks of the Video Electronics Standards Association

## FEATURES AND BENEFITS



## DisplayPort\* 0.50mm (.020") Pitch External Connectors

### Receptacles

- Small footprint for pcb real estate savings
- D-shaped chamfer interface design to facilitate polarized mating
- Accepts cable assembly with latch or friction lock plug
- Metal solder pegs to increase rigidity and retention to pcb
- Plastic peg for correct connector placement on pcb
- Detent locks on metal shield for increased reliability on connection
- Fully shielded metal shell to reduce EMI/RFI emissions on signals
- RoHS and Halogen-Free Compliant

### Test Board

- User friendly test board to connect entire DisplayPort system for testing of electrical parameters

### Cable Assemblies

- D-shaped chamfer interface design to facilitate polarized mating
- Dual latch version for increased interlocking strength when mated
- Non-latch version offers friction lock plug
- New overmold design further reduces small form factor of the plug for non-latch version
- Includes hot plug detect and auxiliary channel
- High Bit Rate, Reduced Bit Rate and low cost AWG28 cable versions
- Capabilities for Captive cable assembly to support direct drive monitor systems

### Dongles and Adapters

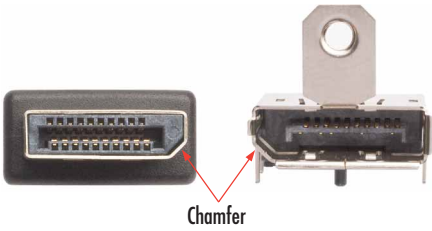

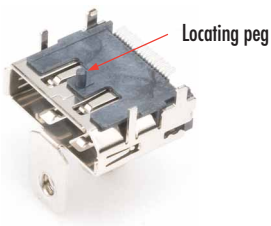
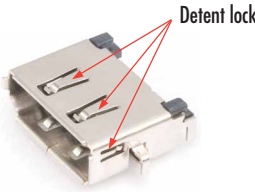

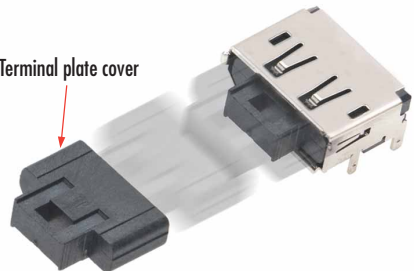
- Choices to connect to VGA, DVI or HDMI systems
- Optional Transient Voltage Suppression feature

HALOGEN-FREE



Molex's DisplayPort cable assemblies have Halogen-free cable versions.

## DESIGN HIGHLIGHTS

<p>D-shaped Chamfer On Plug And Receptacle Provides Polarized Mating</p>	<p>Optional Metal Latches Provide Added Contact Reliability And Prevent Unintended Disconnections</p>
	
<p>Plastic Locating Peg Ensures Correct Placement Of Connector On PCB</p>	<p>Detent Locks Ensure Secured Mating Between Plug And Receptacle</p>
	
<p>Solder Pegs Increase Rigidity And Retention To PCB</p>	<p>Terminal Plate Cover Prevents Terminal Contamination During Solder Flux Application</p>
	

## SPECIFICATIONS



## DisplayPort\* 0.50mm (.020") Pitch External Connectors

### Reference Information

Packaging: Tape and Reel  
UL File No.: Pending  
CSA File No.: Pending  
Designed In: mm

### Electrical

Voltage: 40V AC  
Current: 0.5A  
Contact Resistance:  
30 milliohm max. (mated)  
50 milliohm max. (shell)  
Dielectric Withstanding Voltage:  
500V AC (rms) (unmated)  
300V AC (rms) (mated)  
Insulation Resistance:  
100 Megohms min. (unmated)  
10 Megohms min. (mated)

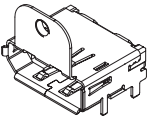
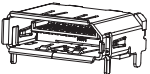
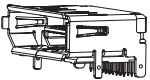
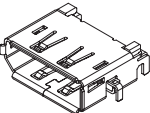
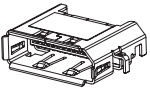
### Mechanical

Insertion Force: 44.1N max.  
Withdraw Force:  
After 2000 times: 9.8N min. 39.2N max.  
After 10,000 times: 4.9N min. 39.2N max.  
Latch Strength Pull Force: 49.0N min.  
Contact Pull-out Force: 2.94N min.  
Durability: 10,000 cycles

### Physical

Housing: High Temp Thermal Plastic,  
Glass-Filled, UL 94V-0  
Shell and Contact: Copper Alloy  
Plating:  
Contact Area – 0.76 $\mu$ m Gold  
Solder Tail Area –  
Underplating – 1.27 $\mu$ m Nickel  
Operating Temperature: -20°C to +85°C

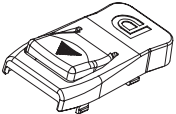
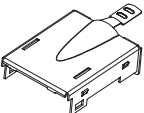
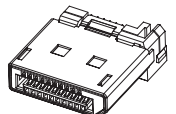
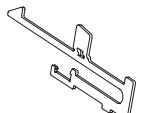
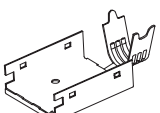
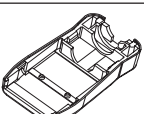
## RECEPTACLES

Product	Order Number	Description
	47272-0001	Right Angle SMT Receptacle
	47272-1002	Right Angle SMT Receptacle With Terminal Plate Cover
	47272-0003	Right Angle SMT Receptacle With No Latch Hole
	47272-1004	Right Angle SMT Receptacle With Flange And Through-Hole Solder Peg
	47272-1005	Right Angle SMT Receptacle With Flange And SMT Solder Peg
	105019-0001	Right-Angle Receptacle SMT Reverse Mount Without Post
	105019-0002	Right-Angle Receptacle SMT Reverse Mount With Post
	105020-0001	Through-Hole Receptacle 2-Row PC Tail Without Flange
	105020-0002	Through-Hole Receptacle 2-Row PC Tail With Flange
	105020-0007	Through-Hole Receptacle 2-Row PC Tail With Terminal Plate Cover
	105020-0008	Through-Hole Receptacle 2-Row PC Tail With Flange And Terminal Plate Cover
	47623-0001	Mid-Mount SMT Receptacle
	47644-1001	Mid-Mount Reverse SMT Receptacle

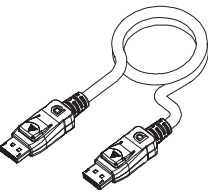
\* Note: More plating options are available

**CABLE PLUG**

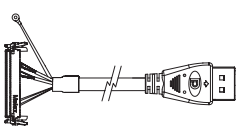
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Product	Order Number	Description
	47271-0004	Upper Cover For Use With Latching Plug
	47271-1004	Upper Cover For Use With Non-Latching Plug
	47271-1008	Upper Inner Shell For Use With Latching Plug
	47271-3008	Upper Inner Shell For Use With Non-Latching Plug
	47271-0011	Plug Sub-Assembly With Latch
	47271-1011	Plug Sub-Assembly Without Latch
	47271-1016	Left Metal Latch
	47271-2016	Right Metal Latch
	47271-1009	Lower Inner Shell For Cable Plug
	47271-0005	Lower Cover For Cable Plug

**EXTERNAL CABLE ASSEMBLIES**

Product	Order Number	Description	Length
	68783-0007	Cable Assembly High Bit-Rate With Latch	2m
	68783-0008	Cable Assembly High Bit-Rate Without Latch	2m
	68783-0001	Cable Assembly High Bit-Rate With Latch	3m
	68783-0002	Cable Assembly High Bit-Rate Without Latch	3m
	68783-0017	Cable Assembly Reduced Bit-Rate With Latch	15m
	68783-0004	Cable Assembly AWG28 Version With Latch	15m




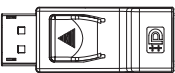
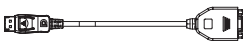
**CAPTIVE CABLE ASSEMBLIES**

Product	Order Number	Signal Pairs (Lane Width)	1.6Gbps	2.7Gbps
	Contact Sales	4-Lane	1080p - 10bit	WQXGA - 10bit
		2-Lane	1080i - SXGA	WUXGA
		1-Lane	XGA - SDTV	SXGA - 1080i

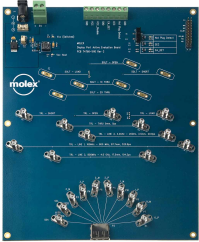
**DONGLES AND ADAPTERS (SOURCE TYPE)**



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Product	Order Number	Description	With Transient Voltage Suppression
	74766-0006	Plug-To-Single-Link DVI Receptacle	Yes
	74766-8006	Plug-To-Single-Link DVI Receptacle	No
	74766-0013	Plug-To-Single-Link DVI Receptacle With DVI Electronics	Yes
	74766-8013	Plug-To-Single-Link DVI Receptacle With DVI Electronics	No
	74766-0005	Plug-To-HDMI Receptacle	Yes
	74766-8005	Plug-To-HDMI Receptacle	No
	74766-0016	Plug-To-HDMI Receptacle Adapter	Yes
	74766-8016	Plug-To-HDMI Receptacle Adapter	No
	74766-0019	Plug-To-VGA Receptacle	Yes

**SECOND GENERATION TEST BOARD**

Product	Order Number	Description
	74766-1912	Second Generation Test Board



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