

SlimStack Board-to-Board Connector Core Product Matrix for Hardware Interface Standard

Standard							MIPI D-PHY	MIPI M-PHY	USB 3.1 Gen 2 Type-C	USB 3.1 Gen 2	USB 3.1 Gen 1	HDMI 2.0	DisplayPort 1.4	Serial ATA 3.0	PCI Express 3.0	
Impedance (Ω)							80 to 125	80 to 110	85±9	90±10	90±10	100±15	100±10	100±15	85±15	
Rise Time [picosecond (%)]							100 (20 to 80)	200 (10 to 90)	40 (20 to 80)	40 (20 to 80)	50 (20 to 80)	200 (10 to 90)	130 (20 to 80)	70 (20 to 80)	35 (10 to 90)	
Pitch (mm)	Image	Mated Height (mm)	Series No.		Maximum Usable Frequency (GHz)	Data Rate (Gbps)										
			Receptacle	Plug												
		0.60	505066	505070	20	40	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		0.70	505270	505070	20	40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		0.80	505270	505274	20	40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		0.90	505413	505274	20	40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		1.00	505413	505417	20	40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0.40		0.60	505473	505476	20	40	✓	✓				✓	✓	✓		
			503304	503308			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		0.70		503548	503552	20	40	✓	✓	✓	✓	✓	✓	✓	✓	✓
			505004	505006	20	40	✓	✓				✓	✓	✓	✓	
		0.80		505550	505551	20	40	✓	✓	✓	✓	✓	✓	✓	✓	✓
			51338	55909	20	40	✓	✓				✓	✓	✓	✓	✓
		1.50		500913	55909	15	30	✓	✓				✓	✓	✓	✓
		1.80		51338	501745	20	40	✓	✓				✓	✓		
		2.00		500913	501745	15	30	✓	✓				✓	✓		
		2.30	500913	501745	15	30	✓	✓				✓	✓			

Circuit assignment: GSSGSSG

*This chart was produced from simulation results. The conformance to the standards is based on the impedance requirements in each specification.




*Please note that the connector's impedance value is subject to the customer's board design, and conformance to the standards may vary based on that board design.

*The "Usable Frequency" of the connector is determined by the frequency at which the insertion loss starts to exceed -3dB. The data rate is calculated by doubling the "Usable Frequency" in this chart.

*Return loss and crosstalk are not taken into account in these values but must be considered (in addition to insertion loss) when assessing the connector's performance.

*Data is subject to change without notice.



Standard							MIPI D-PHY	MIPI M-PHY	USB 3.1 Gen 2 Type-C	USB 3.1 Gen 2	USB 3.1 Gen 1	HDMI 2.0	DisplayPort 1.4	Serial ATA 3.0	PCI Express 3.0	
Impedance (Ω)							80 to 125	80 to 110	85±9	90±10	90±10	100±15	100±10	100±15	85±15	
Rise Time [picosecond (%)]							100 (20 to 80)	200 (10 to 90)	40 (20 to 80)	40 (20 to 80)	50 (20 to 80)	200 (10 to 90)	130 (20 to 80)	70 (20 to 80)	35 (10 to 90)	
Pitch (mm)	Image	Mated Height (mm)	Series No.		Maximum Usable Frequency (GHz)	Data Rate (Gbps)										
			Receptacle	Plug												
0.50		1.50	54722	55560	15	30	✓	✓				✓	✓			
		2.50	54102	53885	15	30	✓	✓				✓				
		3.00	52991	53748	20	40	✓	✓				✓				
		4.00	52991	53916	15	30	✓	✓				✓				
0.635		6.00	52885	55091	10	20										
		7.00	52885	53625	10	20										
		8.00	52885	53647	10	20										
		9.00	52885	53649	10	20										
		10.00	52885	53627	10	20										
		12.00	52901	55091	5	10										
		13.00	52901	53625	5	10										
		14.00	52901	53647	5	10										
0.635 Floating		12.00	209168	55091	5	10										
		13.00	209168	53625	5	10										
		14.00	209168	53647	5	10										
		15.00	209168	53649	5	10										
		16.00	209168	53627	5	10										

*This chart was produced from simulation results. The conformance to the standards is based on the impedance requirements in each specification.

*Please note that the connector's impedance value is subject to the customer's board design, and conformance to the standards may vary based on that board design.

*The "Usable Frequency" of the connector is determined by the frequency at which the insertion loss starts to exceed -3dB. The data rate is calculated by doubling the "Usable Frequency" in this chart.

*Return loss and crosstalk are not taken into account in these values but must be considered (in addition to insertion loss) when assessing the connector's performance.

*Data is subject to change without notice.

Circuit assignment: GSSGSSG

www.molex.com/link/slimstack.html

molex

Molex is a registered trademark of Molex, LLC in the United States of America and may be registered in other countries; all other trademarks listed herein belong to their respective owners.

Ordering No. 987652-0196 Rev. 2

APN/0k/GF/2023.03

©2023 Molex