

# **DP3 Series**

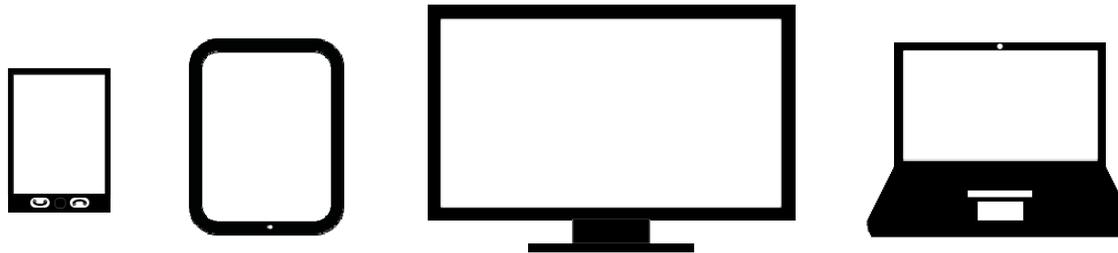
## **Input/Output Connector**

### **Thunderbolt™ Technology Compatible**

Connector Training Module

## Application Examples

- Laptops, Desktops, Ultrabooks
- Audio/ Video editing equipment
  - Display devices
- Adapter/ Expansion devices
  - Professional cameras
  - Etc.



# DP3 Series Features

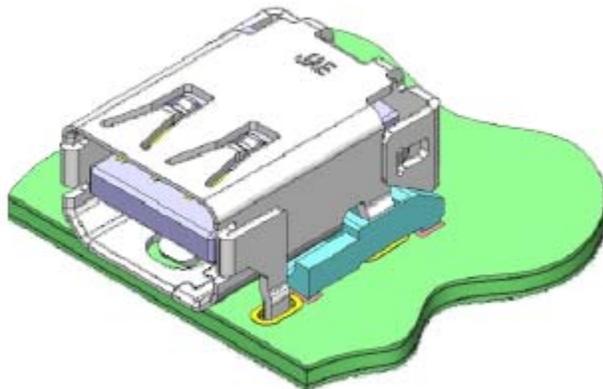
## Compatible with Thunderbolt™ Technology

- 10 Gbps high-speed transmission between PCs and peripherals
- Certified connector for Thunderbolt™ Technology
- Available in standard, reverse, and mid-mount types
- Secure board mounting with through-hole hold-downs
- Friction lock enhances plug retention strength and creates a clear click feeling when mated
- Multiple mounting types for design flexibility
- Cables can be electrical or optical
- Embossed tape packaging

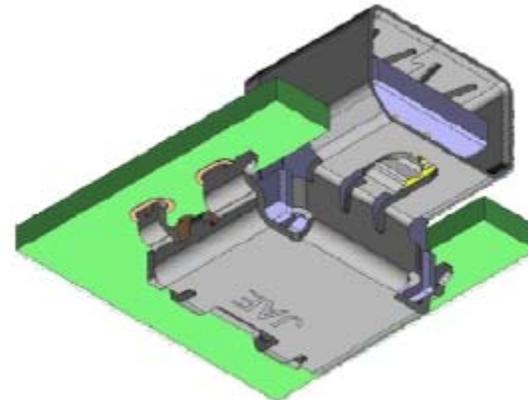


# General Specifications

<b>No. of Contacts</b>	20
<b>Contact Resistance</b>	100mΩ max (initial)
<b>Dielectric Withstanding Voltage</b>	AC500 Vr.m.s (for 1 minute)
<b>Operating Temperature Range</b>	- 20 to +85°C
<b>Rated Current</b>	0.5A per pin
<b>Mating Durability</b>	10,000 times



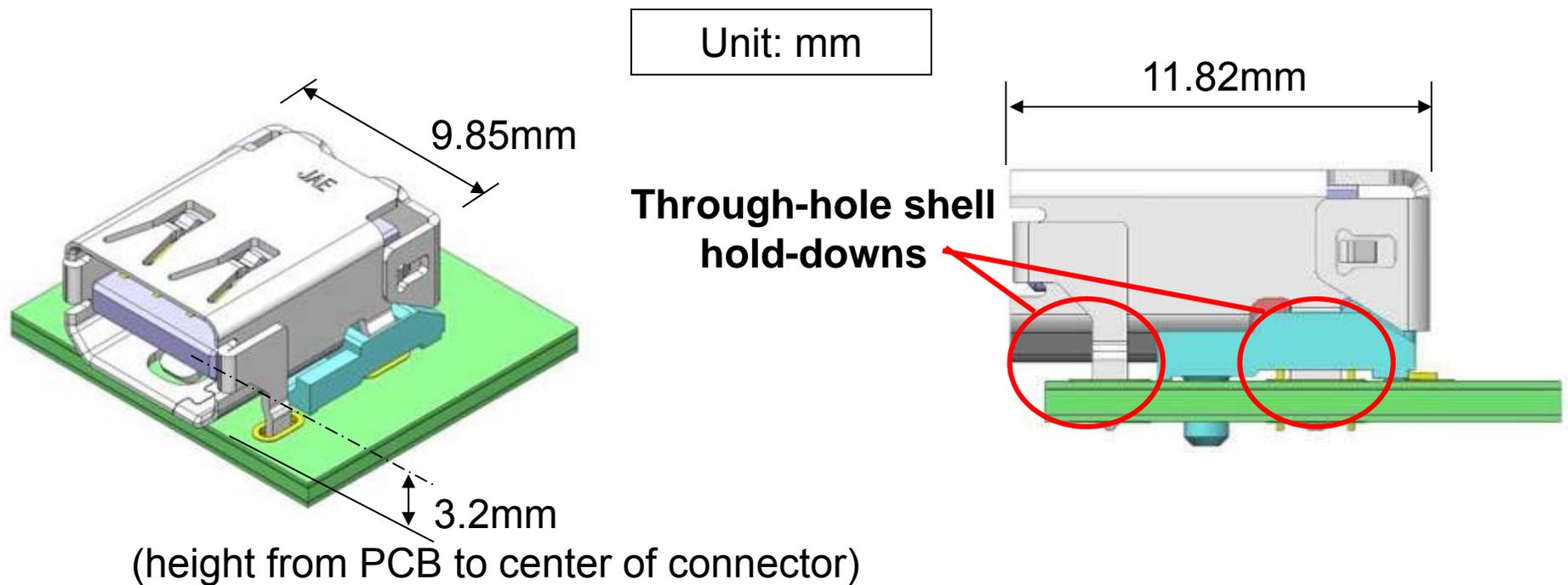
Standard Surface-Mount type



Reverse Mid-Mount type

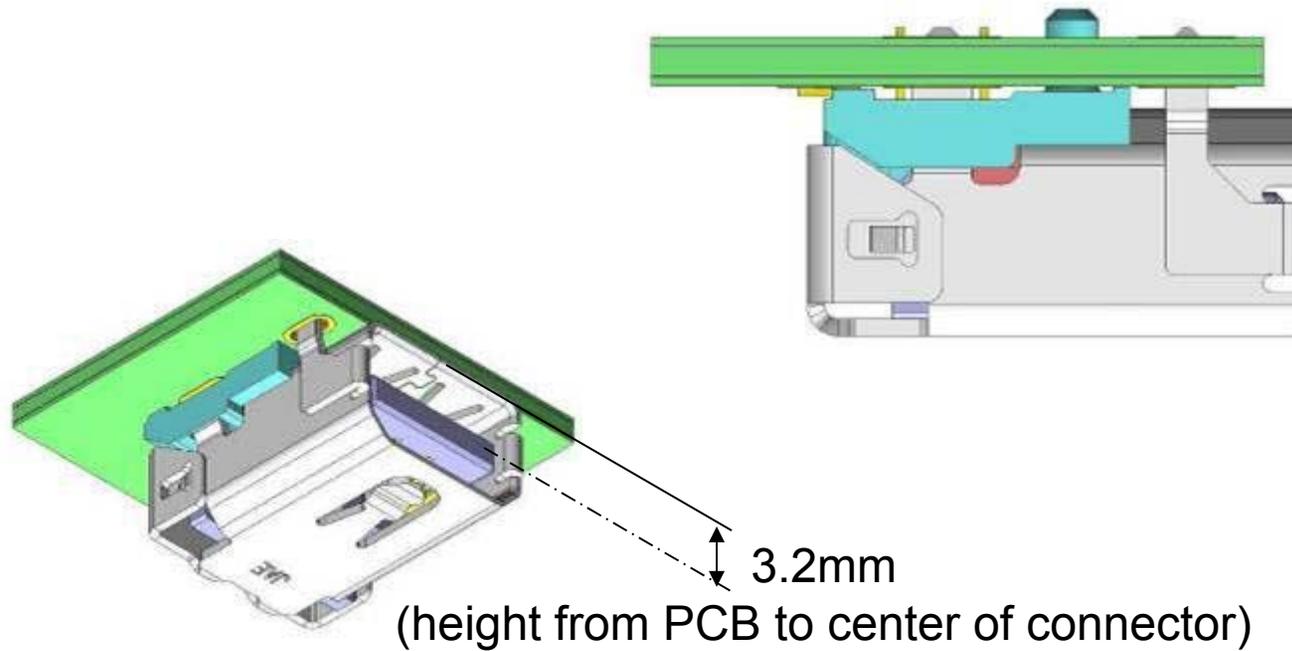
# DP3 Series: Standard Surface-Mount Type

- Mounts on top of PCB
- Interface orientation: Right side up
- Included in the Thunderbolt™ standard specification



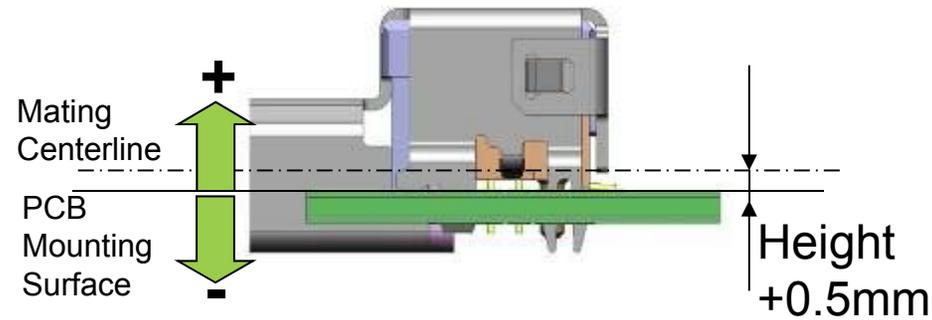
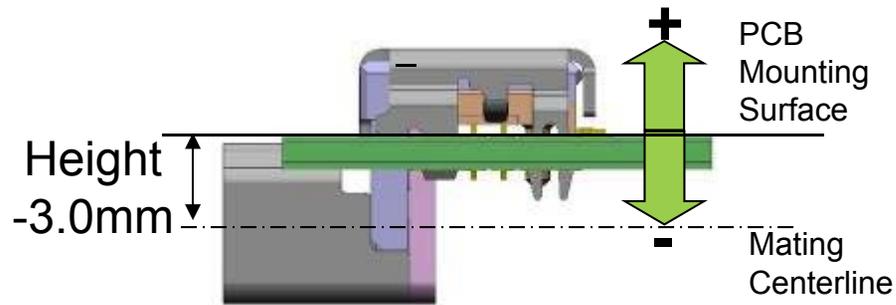
# DP3 Series: Reverse Mount type

- Mounts on the bottom of the PCB
- Interface orientation: Right side up



# DP3 Series: Mid-mount type

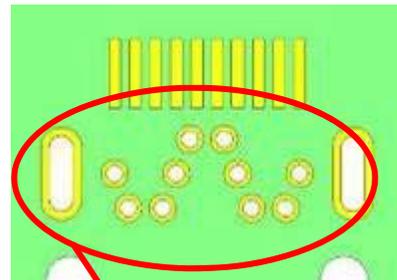
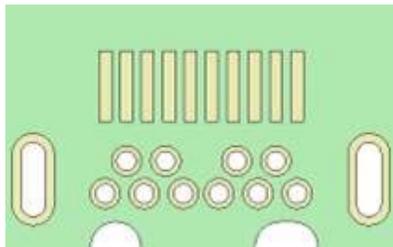
- Mounts within PCB cut-out
- Adjusts the centerline of connector in relation to the PCB
- Flexibility to line up with other connectors on device



# DP3 Series: Specially designed footprint

JAE's DP3 footprint is specially designed to meet the high-speed requirements for Thunderbolt™ technology.

Standard mDP Footprint



DP3 Thunderbolt Footprint

## Balanced signal pairs

- Enhanced signal integrity
- Optimizes PCB layout

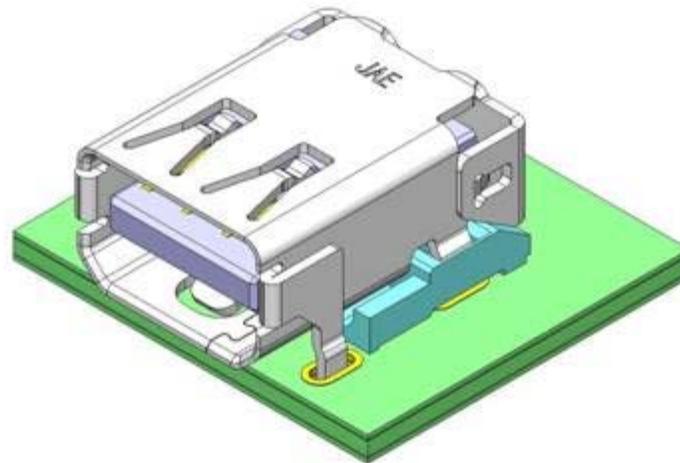
# DP3 Receptacle Line-up

- Multiple variations available for design flexibility
- Certified Thunderbolt™ connector

Receptacle Type	Mounting Orientation	Height of Mating Centerline (from mounting surface)	Thru-hole Pin Length	Part Number
Standard (top)	Standard	+ 3.2mm	2.1mm	DP3R020SU32JQ1
Standard (top)	Standard	+ 3.2mm	1.4mm	DP3R020SU32JQ
Reverse	Reverse	+ 3.2mm	2.1mm	DP3R020RU32JQ1
Reverse	Reverse	+ 3.2mm	1.4mm	DP3R020RU32JQ
Mid-mount	Reverse	- 3.0mm	1.5mm	DP3R020RL30JQ
Mid-mount	Reverse	+ 0.5mm	1.5mm	DP3RB20RU05JQ

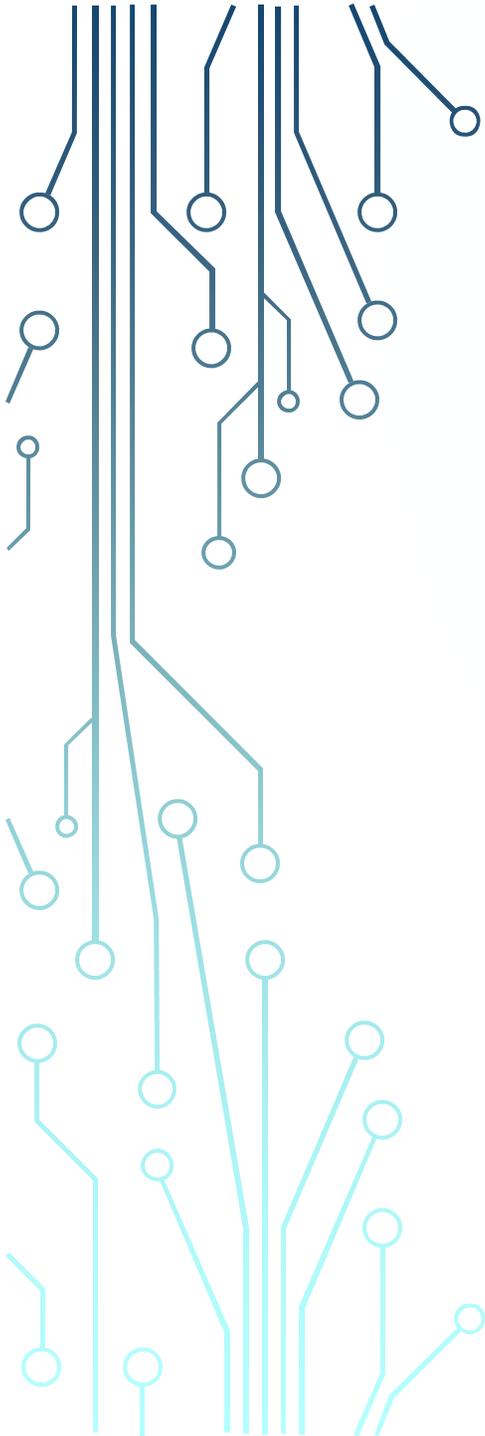
# Material and Finishes

Component	Material / Finish
Contact Area Terminal Area	Copper alloy / 0.3 $\mu$ Au over Ni plating Sn over Ni plating
Housing	Glass-filled LCP / None
Shell	Stainless Steel / Ni



# Summary

- The DP3 I/O connector offers a 10 Gbps high-speed transmission between PCs and peripherals, and is a certified connector for Thunderbolt™ technology.
- JAE's DP3 Series I/O connector has 20 contacts with an initial contact resistance of 100 mΩ max.
- Its operating temperature range is -20°C to 85°C with a rated current of 0.5A per pin.
- The DP3 standard surface mount type mounts on top of the PCB with thru-hole shell hold-downs.
- The mid-mount type mounts within the PCB cut-out, which adjusts the centerline of the connector in relation to the PCB.



**Technology to Inspire Innovation**

**JAE**