

POWER CONNECTOR AND CABLE ASSEMBLY PORTFOLIO FROM TE CONNECTIVITY

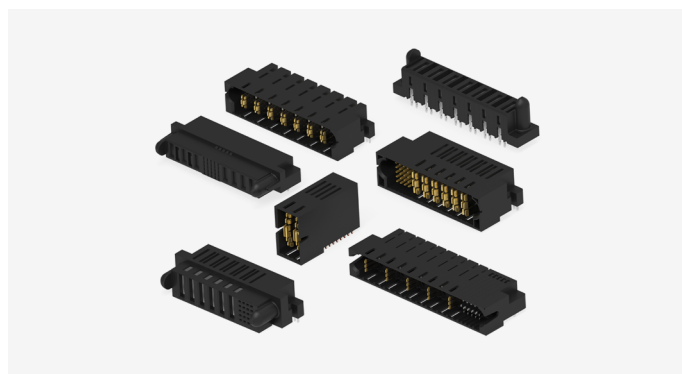
TE Connectivity's (TE) power connector and cable assembly portfolio provides a wide range of power transmission solutions that offer exceptional electrical and mechanical performance, delivering reliable and stable power transmission to a wide variety of applications with potential to achieve power >10kW at 48V. By continuously investing in research and development, our portfolio offers a solution for your electrical infrastructure challenges while being designed to meet current and future industry standards.

OUR PRODUCT PORTFOLIO:

- MULTI-BEAM High Density (HD)
- MULTI-BEAM XLE
- MULTI-BEAM Plus
- MULTI-BEAM Lite

KEY BENEFITS:

- Designed with efficiency in mind, TE's power connectors and cable assemblies enable reduced installation times and maintenance costs, helping to achieve savings in end-item design
- Built with high quality materials and robust manufacturing processes, TE's power connectors and cable assemblies are known for their longevity and reliable performance in numerous applications and industries
- With features that enable easy integration, TE's power connectors are easy to work with and install into existing architectures, saving time during the design cycle
- With a world-wide presence and a strong network of distributors, customers can access and gain support for the power portfolio across the globe



MULTI-BEAM HIGH DENSITY (HD) CONNECTORS

TE Connectivity's MULTI-BEAM HD connectors enable next generation applications by offering a more compact design with up to 135A per power contact, as well as featuring both high density power and signal to save space. This scalable and modular design also supports greater flexibility in configuration and PCB layout.



APPLICATIONS

- Data Center
- Telecommunications
- Industrial Automation Devices
- Power System

KEY FEATURES

- High current density with up to 390A per linear inch
- Utilized TE's innovate power contact design for increased reliability and operations
- Three levels of contact sequencing: ground, power/signal, enable PIN
- Flexible and modular configuration enabling a wide-variety of PCB design options

ELECTRICAL SPECIFICATIONS

Power Contacts*				
Type	Module Power Contact Pitch(mm)	Single Power Contact(A)	Four Adjacent Power Contact(A)	Eight Adjacent Power Contact(A)
Power	5.0	135	93	75
Power	6.0	135	100	78
Power	7.0	135	100	NA
Power	3.0	42	32	22
Low Power	5.0	42	32	23

*test data based on customized test setup

MECHANICAL SPECIFICATIONS

- **Durability:** 500 mating cycles
- **Mechanism shock:** 50G Per EIA-364 standard
- **Vibration:** 4.9G, 20-500Hz
- **Operating temperature:** -40°C to 125°C
- **Mating force:**
 - 3.5N max. per power contact
 - 1.5N max. per low power contact
- **Un-mating force:**
 - 2.2N min. per power contact
 - 2.5N min. per low power contact
- **Insertion force:**
 - The insertion force per eye-of-needle (EON): 50N max
- **PCB thickness:**
 - Press-fit type: 1.5mm min
 - Solder type: tail length - 0.04mm max

PRODUCT DIMENSIONS

- **Length:** 100mm max.
- **Depth:** 51.0mm (The total depth for plug and receptacle mating)
- **Height above PCB face:** 18.90mm

CONTACT SPACING AND OPERATING VOLTAGE

- **High power:**
 - 7.0mm - up to 300V RMS or DC
 - 6.0mm - up to 200V RMS or DC
 - 5.0mm - up to 60V RMS or DC
- **Low power:**
 - 5.0mm - up to 300V RMS or DC
 - 2.0mm - up to 60V RMS or DC
- **Signal:** 2.0mm grid



APPLICATION TOOLING

- Flat-rock seating tools are required for press-fit version

MATERIAL

- High conductivity copper alloy and high temperature resin with RoHS compliance

TECHNICAL DOCUMENTS

- **Product Specification:**
108-128007
- **Application Specification:**
114-128010

MULTI-BEAM HD PART NUMBER LIST

Right Angle Header	Mating Vertical Receptacle	Mating Right Angle Receptacle	Configuration
2204443-1	2204423-1	2204403-1	2P
2204440-1	2204420-1	2204400-1	15s+2P+2P+15S
2204442-2	2204422-2	-	15s+8P+8LP+8LP+15S
2204446-1	-	2204406-1	10S+2P+2P
2204446-2	2204426-1	-	15s+4P+4P
2204446-6	-	2204406-5	10S+9P
2204440-2	2204420-2	-	10S+9P
2204442-1	2204422-1	-	15s+8P+8LP+8LP+15S
2204441-1	2204421-1	-	15s+2P+2LP+2P+15S
2204440-7	2204420-8	-	15s+3P+12S
2204440-8	2204420-9	-	15s+3P+12S
2204446-3	2204426-2	-	2P+15S
2204452-1	2204422-3	-	15S+6P+2LP+15S
2204446-8	-	2204406-6	4P+20S(Press-fit)
2204456-1	-	2204416-1	4P+20S(solder tail)

MULTI-BEAM XLE POWER CONNECTORS

TE Connectivity's (TE) MULTI-BEAM XLE connectors feature a 3-beam contact, made from a thicker (higher) conductivity material than the original single-beam or 4-beam rectangular power connector designs. The 3-beam design allows for a greater angular mis-alignment between mating connectors and offers a lower mating force.

In addition, MULTI-BEAM XLE connectors offer a slimmer housing design that reduces the overall PCB footprint and has the option of using a low power contact—the industry proven Universal Power Module (UPM) contact. The new contact and housing design allows more power in the same footprint—over 40% more current in the same space. MULTI-BEAM XLE connectors are as modular as original MULTI-BEAM XL connectors in that they can be designed to fit specific customer needs. MULTI-BEAM XLE connectors are also available as preassembled cable assemblies.



APPLICATIONS

- Modular hot-swappable power supplies
- 1U / 2U servers
- High-end computer & telecommunications equipment
- Power distribution circuit boards
- Power distribution cable assemblies

KEY FEATURES

- **Two hot-pluggable power contacts to choose from:**
 - 80A high power contact
 - 20A low power contact
- Over 40% lower mating force than original MULTI-BEAM XL connectors
- Over 40% more current in the same overall PCB space
- Low-wear contact design passes Telcordia environmental exposure requirements
- New design allows more angular misalignment

ELECTRICAL

- **Current carrying capacity:**
 - 80A high power contact
 - 20A low power contact (occupies 50% PCB space than MULTI-BEAM XL power contact)
- Contact resistance: 0.7 milliohm per contact at rated current

MECHANICAL

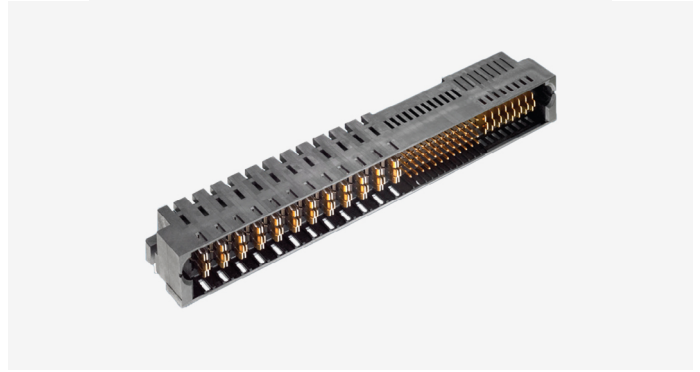
- Mis-alignment / gatherability: +/- 2mm radial misalignment
 - **Mating Force:**
 - High Power: 5N max. per contact
 - Low Power: 2N max. per contact
 - Signal: 1.7N max. per contact

PRODUCT DIMENSIONS

- Overall housing envelope dimensions similar to MULTI-BEAM XL connectors
- Length expandable depending on number of contacts
- **Depth:** 0.930" (23.6mm)
- **Height at mating face:** 0.574" (14.6mm)

CONTACT SPACING

- **High power:**
 - 0.300" (7.62mm) - up to 300 VAC
 - 0.250" (6.35mm) - up to 150 VDC
 - 0.200" (5.08mm) - for connection to same voltage
- **Low power:** 0.115" (2.92mm) - up to 300 VDC applications (in groups of 2 contacts)
- **Signal:** 0.100" (2.54mm) grid



APPLICATION TOOLING

- Right angle plugs: Flat-rock seating tools (no unique tools required)
- Right angle receptacles: Flat-rock seating tools (no unique tools required)
- Vertical plugs: Contact TE for required seating tools
- Vertical receptacles: Flat-rock seating tools (no unique tools required)

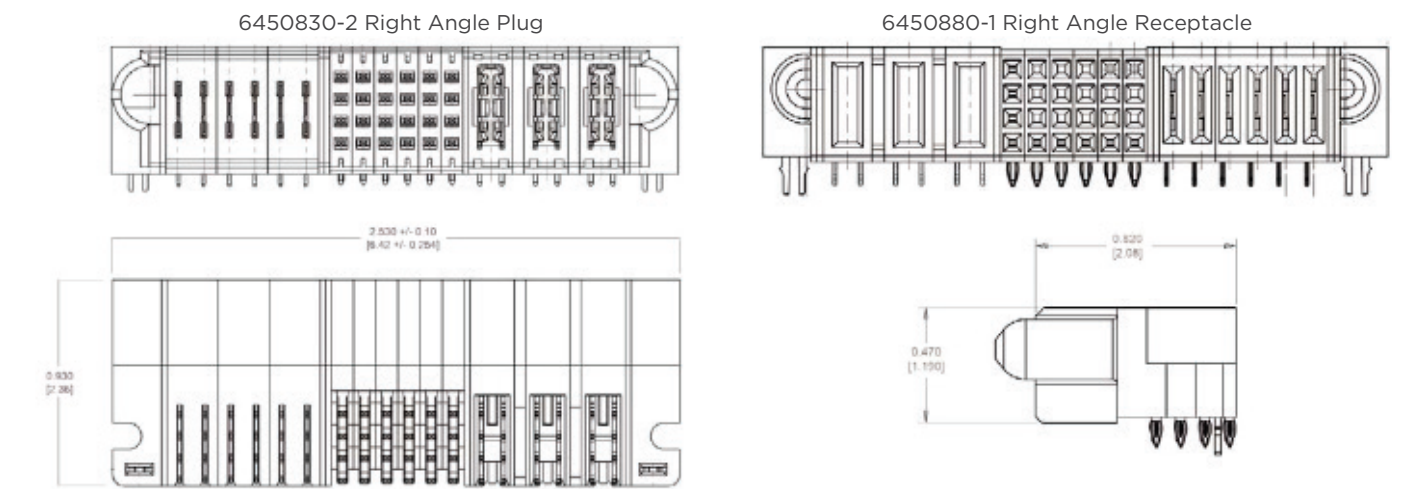
MATERIAL

- All materials meet RoHS requirements

TECHNICAL DOCUMENTS

- **Product Specification:**
108-2292
- **Application Specification:**
114-13036

PART NUMBERS



Available Configurations	Base Part Numbers		Overall Length of Plug	Mating Base Part Numbers	
	Right Angle Plugs	Vertical Plugs		Right Angle Receptacles	Vertical Receptacles
1P/24S/1P	-	6450820	1.1715" (43.56mm)	6450870	-
2LP/8S/2LP 6LP/24S/3P 2P/32S/2LP 2P/24S/2P	6450830	-	1.175" (29.84mm)	-	6450860
			2.555" (64.89mm)	6450880	6450850
			2.020" (51.30mm)	6450870	-
			2.040" (51.81mm)		
32S/4LP	6450831	-	1.750" (44.45mm)	6450871	-
12P/48S/8LP	6450840	-	5.600" (142.24mm)	6450880	6450860
4ACP/48S/12HDP			5.390" (136.90mm)		
4ACP/48S/12HDP	-	6450810	2.415" (61.314mm)	2343054*	-
20S/6P	2343044	2343044			

*New MULTI-BEAM XLE 80A connector

CONFIGURATION DESCRIPTIONS

ACP	P	LP	S
.300" (7.62mm) spacing	0.250" (6.35mm) spacing	0.150" (3.81mm) spacing	0.100" (2.54mm) spacing
300 Volts	200 Volts	200 Volts	60 Volts

ACP indicates the high power contact on 300 VAC spacing.
P indicates the high power contact on 200 VDC spacing.
LP indicates the low power contact on 200 VDC spacing.
S indicates the signal contact on 200 VDC spacing.

MULTI-BEAM PLUS POWER CONNECTORS

TE Connectivity's MULTI-BEAM Plus power connectors address the market need for higher power and higher performance with the highest current per power contact up to 100A/contact with four adjacent power contacts. This higher power and signal density saves space and reduces power consumption.

Like our MULTI-BEAM XL, MULTI-BEAM XLE, and MULTI-BEAM HD power connectors, the scalable and modular design of MULTI-BEAM Plus connectors also supports greater flexibility in configuration and PCB design.



BENEFITS

- Highest current per power contact at a maximum of 100A per four pins
- High power and signal density saves space and reduces power consumption
- Scalable and flexible design

APPLICATIONS

- Data Centers
- Telecommunications
- Industrial Automation
- Power Systems

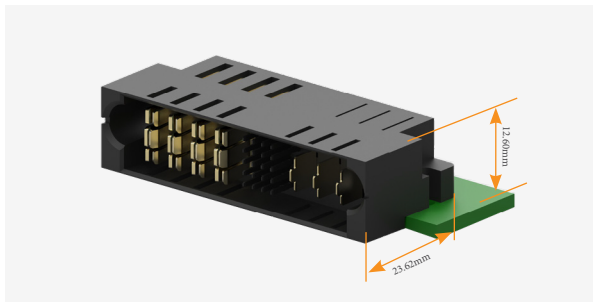
PART NUMBERS

TE Part Number	Pin Configuration
1-2430414-0	6P+5S+1P, STR
2430414-7	7P5S, STR
2425526-4	2P+5S+2P STL
2430414-3	12P STR
1-2430414-3	2P+30S+2P STR
2430414-4	2P STR
2425526-2	6P STL
1-2425526-3	6P+25S+6P STL
1-2425526-4	12p(7.5)+30s+4p(6) STL
1-2430414-6	8p(7.5)+35s+8p(6) STR

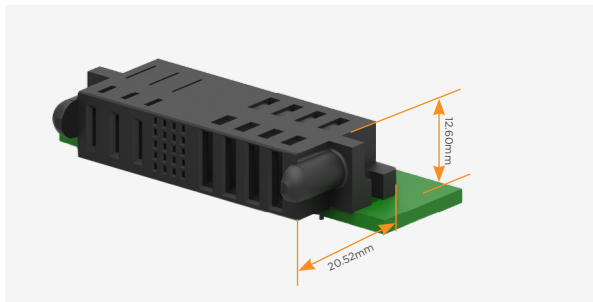
MULTI-BEAM HIGH DENSITY (HD) CONNECTORS

TE Part Number	Connector Type	Pin Configuration
2334531-2	R/A Plug	20S + 6P
2334571-1	R/A Receptacle	20S + 6P
2334530-4	R/A Plug	5LP + 24S + 2P
2334570-4	R/A Receptacle	5LP + 24S + 2P
1-2334530-2	R/A Plug	5LP + 25S + 2P
2334570-8	R/A Receptacle	5LP + 25S + 2P

CONNECTOR DIMENSIONS



R/A Plug



R/A Receptacle

TECHNICAL DETAIL

- **Current rating:**
 - 100A max. per contact with four adjacent power contacts
 - 140A max. per contact
- **Durability:** 250 mating cycles max
- **Mechanical Shock:** 50G per EIA-364 standard
- **Vibration:** 4.9G, 20-500Hz
- **Operating temperature:** -40°C to 125°C
- **Low mating force:**
 - 7.12N max. per power contact
 - 1.0N max. per low power contact
- **Insertion force into PCB:**
 - The insertion force per eye-of-needle
- (EON) is 50N max
- **PCB Thickness:**
 - Press-fit type: 1.5mm min
 - Solder type: tail length – 0.4mm max
- **Material:** High conductivity copper alloy and high temperature resin with RoHS compliance
- **Product Specification:** 108-128074
- **Application Specification:** 114-128075

MULTI-BEAM LITE CONNECTORS

TE Connectivity's (TE) MULTI-BEAM Lite power connectors provide excellent power density with multiple current options. With a small size and low-profile configuration, suitable for 1U power supplies or distribution systems, MULTI-BEAM Lite connectors provide considerable design flexibility while meeting next generation environmental requirements. With a wide variety of solutions available, TE offers supply chain stability and resilience while meeting the end user's requirements for power delivery and cooling.



APPLICATIONS

- Server
- Rack
- Storage Solutions
- Switches

LEARN MORE

- [Landing Page](#)

KEY BENEFITS

- Lower profile and smaller size allow for better airflow to the rest of the board components, while saving valuable PCB real estate
- Right angle header, right angle receptacle, and vertical receptacle types provideco-planar and backplane applications increasing design flexibility
- Provides up to 75A per contact for high power and up to 45A per contact for low power as well as signal contacts providing excellent power density and voltage and signal requests – meeting key power specifications and a wide variety of applications
- Scalable and flexible design to enable tooling cost savings

PRODUCT FEATURES

- Features a low profile PSU connector with 9.6mm height above the PC board allows better airflow
- Number and placement of power and signal contacts enable greater design flexibility in a wide variety of applications
- Environmentally friendly manufacturing process with sustainability in mind
- Large profile of solutions and customizability support supply chain resilience and stability

PART NUMBERS

TE Part Number	Connector Type
2391130-4	Right Angle Header with solder tail 4HP+25S+3LP
2391130-5	Right Angle Header with solder tail 2HP+30S+2HP
2391132-2	Right Angle Header with solder tail 5LP + 25S
2391132-3	Right Angle Header with solder tail 5LP + 25S
2391170-4	Right Angle Receptacle with solder tail 4HP+25S+3LP
2391170-5	Right Angle Receptacle with solder tail 2HP+30S+2HP
2391172-2	Right Angle Receptacle with solder tail 5LP + 25S