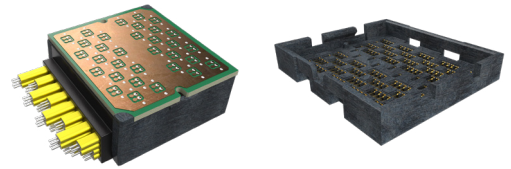


# Twinax Grid Array (TGA) Socket Connectors and Cable Assemblies >

TGA Socket Connectors and Cable Assemblies use a dense grid-based connector to optimize board space while delivering superior signal integrity and 112+ Gbps data rates



TGA Cable Assembly (Left) and  
Socket Connector (Right)

## FEATURES AND ADVANTAGES

### Designed to work with standard industry practices

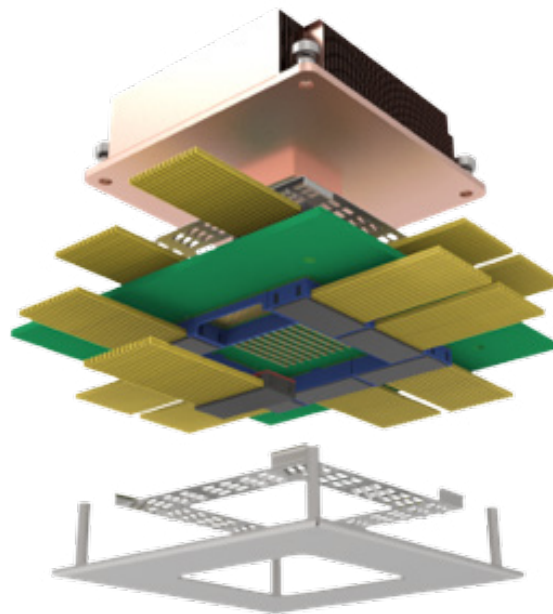
- Die/MCM attached to substrate using bumps in the traditional fashion
- ASIC soldered to the motherboard in the traditional fashion (optional LGA socket attachment available)

### Easier, smaller, cheaper PCB design

- Results in smaller motherboards
- Requires fewer engineering hours for high-speed PCB design
- Easier to route the high-speed signals from the die
- Uses less space on the motherboard than near-ASIC solutions
- Delivers high-density twinax connections

### Universal manufacturing automation

- Needs only one machine type for multiple TGA applications
- Speeds up time to market due to automated processes



### Lower overall system cost

- Avoids optics in the rack
- Eliminates re-timers, equalizers, amplifiers, etc.
- Avoids the need for 112-Gbps PCB traces
- Results in ultra-simple, low-cost motherboards

### Create channels with the best signal integrity margin

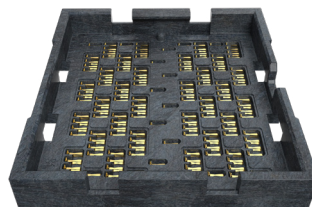
- Offers cutting-edge performance
- Capable of 112+ Gbps PAM-4 protocol

### Enables new kinds of interconnect architectures

- Entails a modular switch and compute cards (custom for the workload)
- Enables a multiplicity of designs using one motherboard design
- Allows for the creation of compute node building blocks to configure at system level
- Reduces engineering hours spent to create a family of switch, compute, router, storage products

### Grid-based connector specified in rows and columns

- 32 differential pairs initially
- 24 DP is being prototyped
- Likely popular members of the product family include 16, 24, 32, 48, 64 DPs



# Twinax Grid Array (TGA) Socket Connectors and Cable Assemblies >

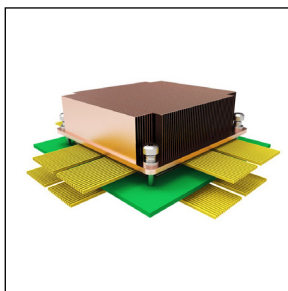
## MARKETS AND APPLICATIONS

### Data Center Solutions

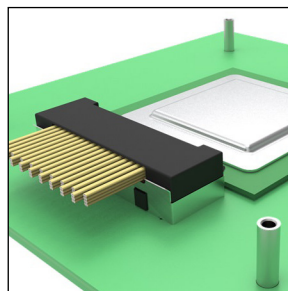
Switches  
Routers  
Servers

### Telecommunications/Networking

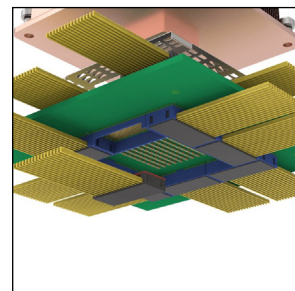
Core routers  
Top-of-the-rack switches



*On the Substrate*



*Near ASIC*



*Under ASIC*

## SPECIFICATIONS

### REFERENCE INFORMATION

Packaging: Bagged and boxed  
UL File No: TBD  
CSA File No: TBD  
Mates With: ?????  
Use With: ????  
Terminal Used: CuBe Spring Pin  
Designed In: Millimeters  
RoHS: Yes  
Halogen Free: Yes

### ELECTRICAL

Voltage (max.): 30V  
Current (max.): 0.5A/pin  
Contact Resistance: TBD  
Dielectric Withstanding Voltage: TBD  
Insulation Resistance: TBD

### MECHANICAL

Contact Insertion Force: 15 grams/pin  
Contact Retention to Housing: N/A  
Insertion Force to PCB: N/A  
Mating Force: 45 grams/pin  
Unmating Force: None  
Durability (min.): 20 cycles

### PHYSICAL

Housing: High-temp Thermoplastic, UL94V-0  
Contact: HIGH PERFORMANCE COPPER ALLOY  
Contact Plating: 0.127µm" GOLD  
Solder Ball: LEAD FREE SAC SOLDER ALLOY  
Underplating: 1.27µm" MIN. Nickel overall  
PCB Thickness: various allowed  
Operating Temperature: -20°C to +125°C inside the chassis and touching heat sinks. 55°C Ambient max.

Note: Molex reserves the right to delay or cancel production of the depicted product without additional notice. Please contact your Molex customer service representative for product availability.

[www.molex.com/link/TGASocket.html](http://www.molex.com/link/TGASocket.html)