

# RUGGED

**PRODUCTS • TOOLS • SERVICE**

# RUGGED INTERCONNECT SOLUTIONS

Samtec is uniquely qualified to provide  
*a full line of products, tools and service solutions...*

## PRODUCTS

High Cycle & Ruggedized Connectors

Tiger Eye™ IDC & Discrete Cables

Circular and Rectangular IP68 Sealed I/O

Power Cables and Connectors to 60A

## TOOLS

Sealed I/O Solutionator®

Online Power Calculator

Extended Life Products &  
Power Integrity Guidelines

## SERVICE

Design Flexibility

Industry Best  
Lead Times

Engineering  
Support

*...for high cycle, high power, rugged*  
**and harsh environment applications.**



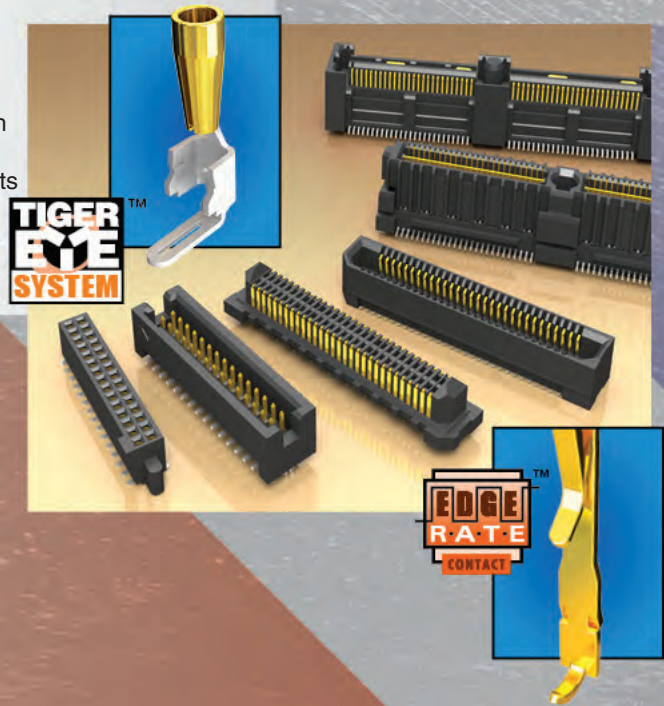


# CONNECTORS



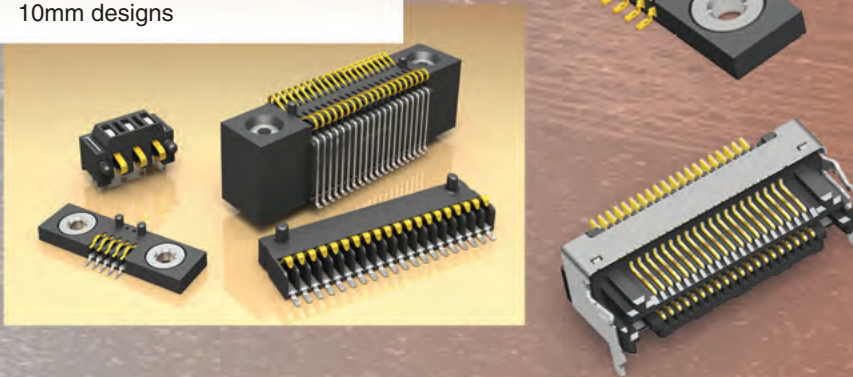
## Micro Rugged Board-to-Board

- Tiger Eye™ contact system:
  - High reliability
  - Multi-finger
  - BeCu
  - 2mm, .050", and 0,8mm pitch
- Rugged High Speed systems
  - Rugged Edge Rate™ contacts
  - Integral power/ground plane options
  - Space saving designs



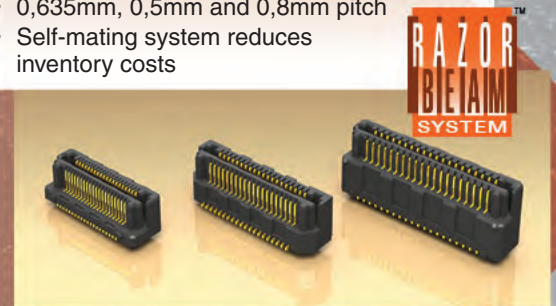
## One Piece Interfaces

- Robust screw mount mechanical hold-down options
- 1mm, 1,27mm and 2,54mm pitch
- Low profile: (1,65mm) .065"
- Elevated profile: 3mm, 6mm and 10mm designs



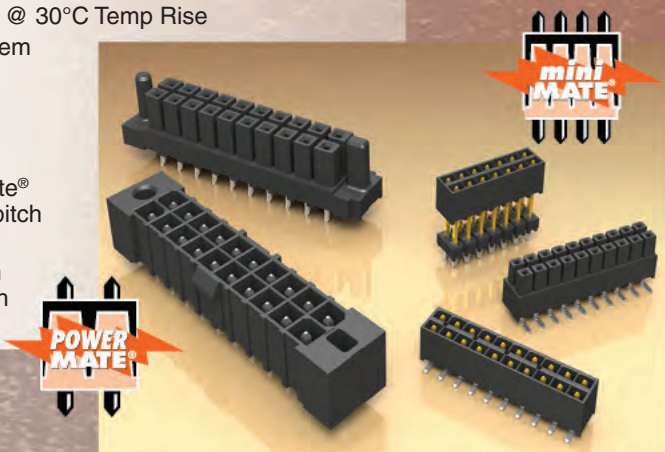
## Micro Rugged Hermaphroditic

- High Speed/High Density
- Slim row-to-row design, 5mm or less
- Mated height variety/flexibility
- Shrouded with audible click when properly mated
- 0,635mm, 0,5mm and 0,8mm pitch
- Self-mating system reduces inventory costs



## Power Mate® and Mini Mate®

- Up to 5.3A / contact @ 30°C Temp Rise
- Board-to-board system with individually shrouded contacts
- Optional polarized position feature
- Double row Mini Mate® on (2,54mm) .100" pitch
- Single and double row Power Mate® on (4,19mm) .165" pitch

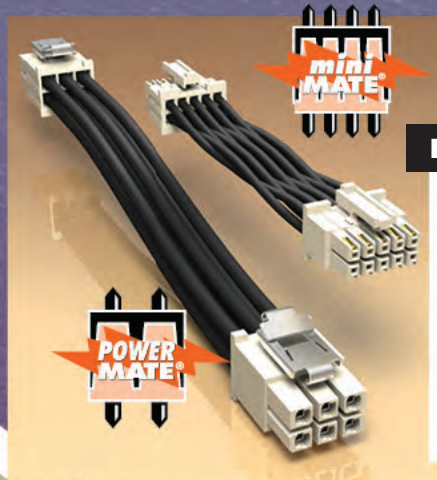
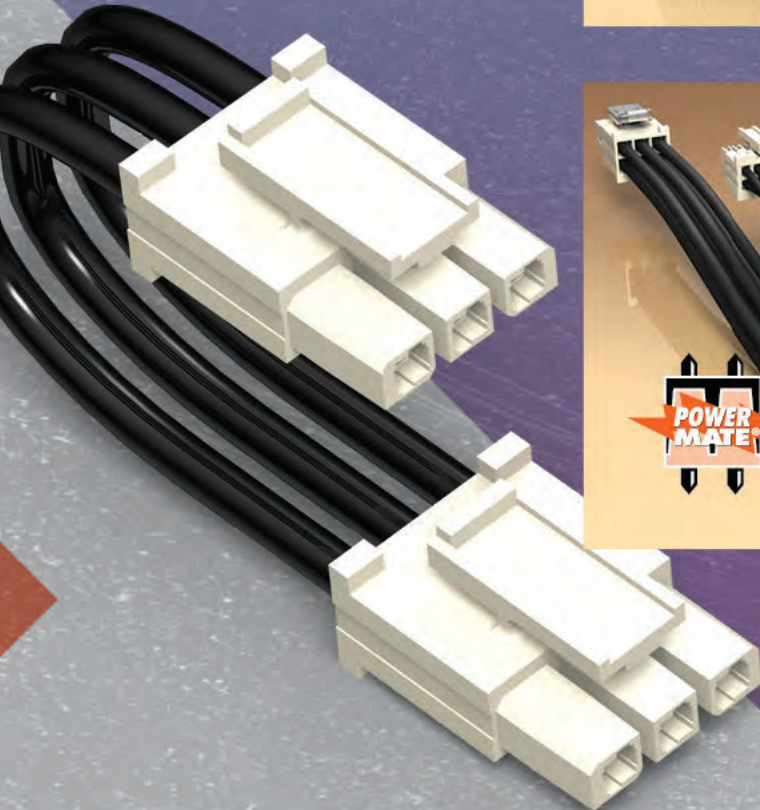
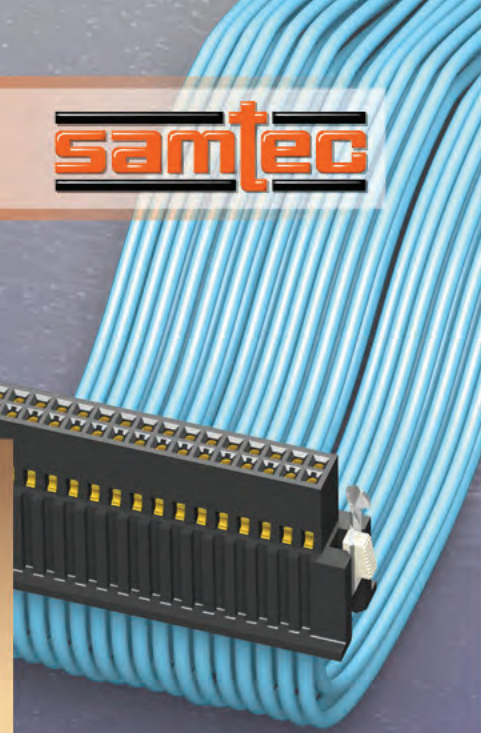


# RUGGED CABLES

samtec

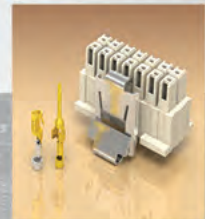
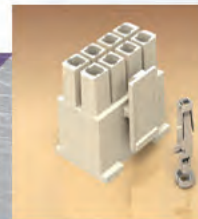
## Tiger Eye™ Discrete Wire

- .050" (1,27mm) and 2mm pitch
- High reliability Tiger Eye™ contact system
- Metal latching system for higher withdrawal forces
- Shrouded, polarized and keyed for rugged applications
- Available as assemblies or components with application tooling also available



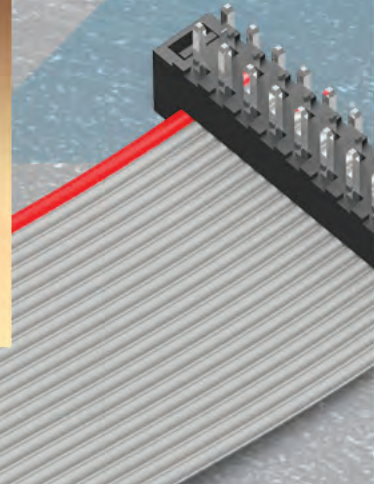
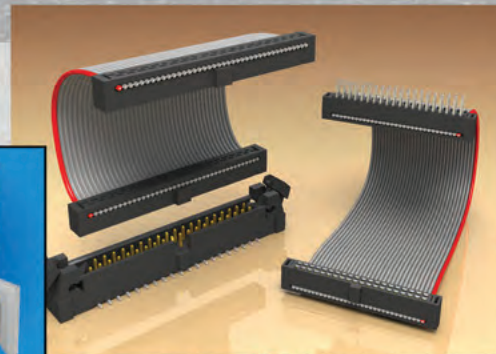
## Power Mate® and Mini Mate®

- Discrete wire system with individually shrouded contacts
- Double and single row designs
- Optional polarizing features
- Available as assemblies or components with application tooling also available



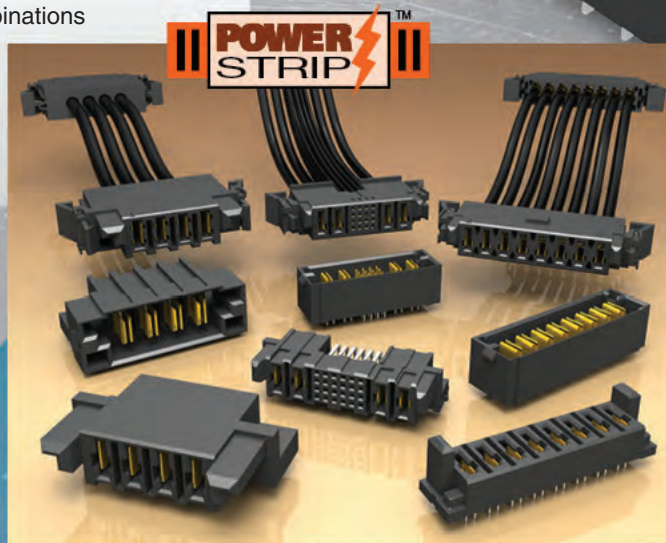
## Tiger Eye™ IDC

- .050" (1,27mm) and 2mm pitch
- High performance Tiger Eye™ contacts
- Ejector headers with optional locking caps
- Strain relief options



## PowerStrip™ High Power

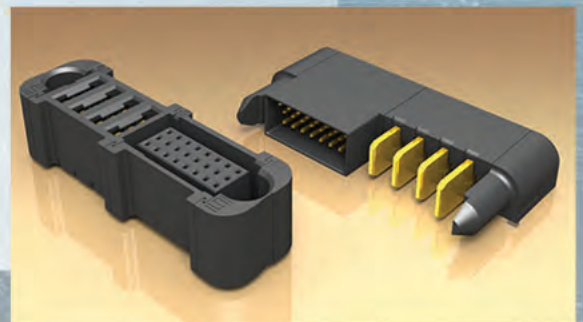
- Choice of three different pitch systems to balance power and space needs
- Blade style interface for most efficient power delivery
- Vertical and right angle PCB connectors with optional screw downs
- Power only and power/signal combinations
- Variety of cable interface options from 10 AWG to 16 AWG wire with rugged latching system
- Hermaphroditic and "hinging" designs available



## EXTreme Ten60Power™

- Up to 60A per power blade (one blade powered @ 75°C)
- Low 10mm profile (Right Angle)
- Power only or combination signal/power contact systems
- Coplanar and perpendicular applications
- Power pins on (5,50mm) .217" spacing for high current DC
- Signal pins on (2,54mm) .100" spacing
- Rated for resistance to arcing for hot-plug applications

EXTreme Ten60Power™ is a trademark of Molex Incorporated.



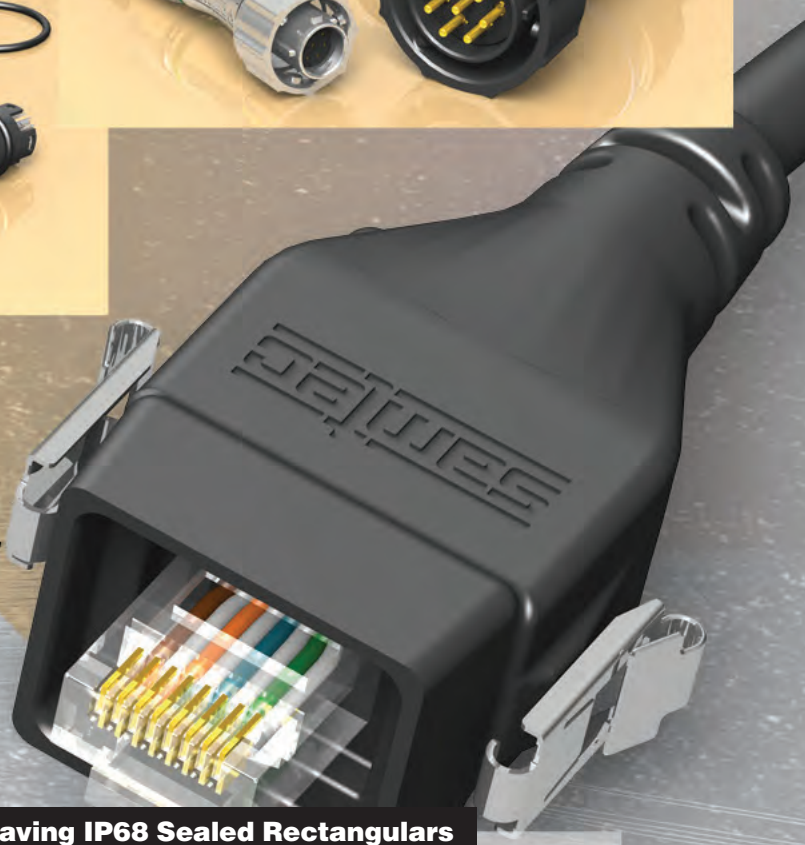
## Flexible Bayonet IP68 Sealed Circulars

- Virtually unlimited number of standard and custom design permutations
- Three standard shell sizes: 12mm, 16mm and 22mm
- Signal, power, RF contacts and combinations available
- Bayonet-style latching system with four color coded keying options
- Clip & shell sockets
- Soldered wire terminations
- Metal or overmolded plastic cable assemblies
- Metal or plastic components available as Field Termination Kits
- Threaded size 10 and size 17 USB, Mini USB and Ethernet also available



## Space Saving IP68 Sealed Rectangulars

- Space saving rectangular design
- Audible click when properly mated/latched
- Quick connect/disconnect with positive latching
- Ethernet, rugged Tiger Eye™ and USB signal systems
- Maximum density for low profile and 1U sealed applications
- Ethernet field termination kits





# CONNECTORS

## Tiger Eye™ Contact System

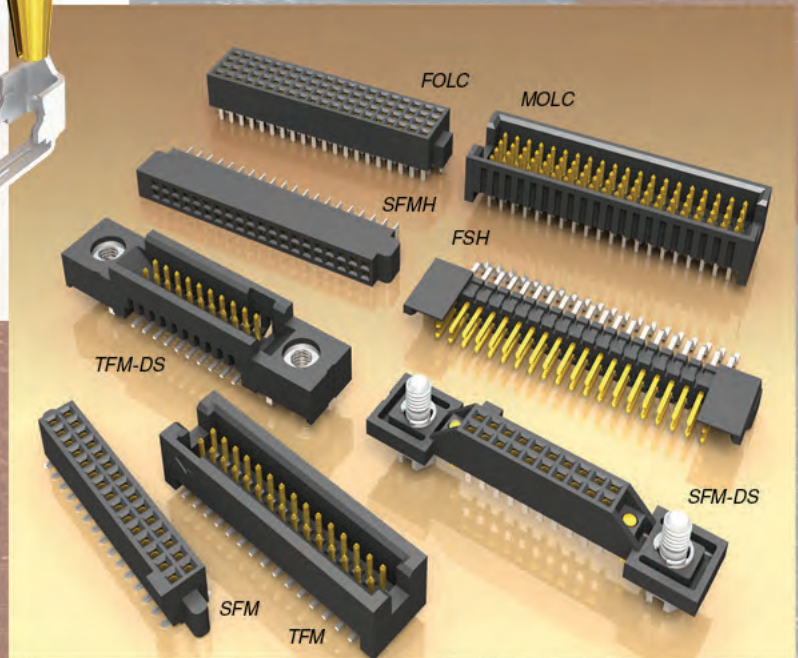
- High reliability
- Multi-finger
- BeCu
- High mating cycles
- Three pitches



## MICRO RUGGED TIGER EYE™ BOARD-TO-BOARD

### 1,27mm (.050") Pitch

- Friction latching system for higher withdrawal forces (optional)
- Screw down, alignment pin, locking clip or weld tab options
- Shrouded, polarized and keyed
- Choice of mated heights
- Extended Life Product™ testing available
- Cost-saving Tiger Eye™ LITE Phosphor Bronze contact systems for applications where Beryllium Copper is not required



T2M-SD

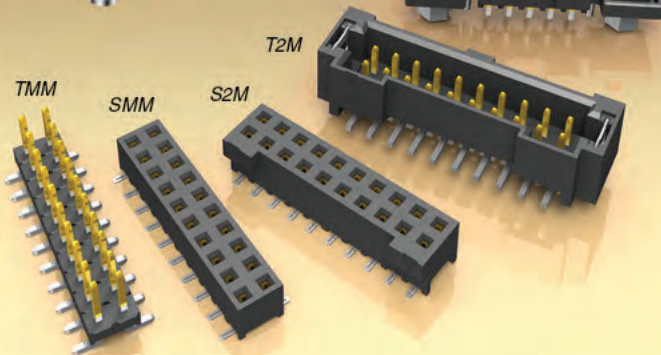
S2M-SD

T2M

TMM

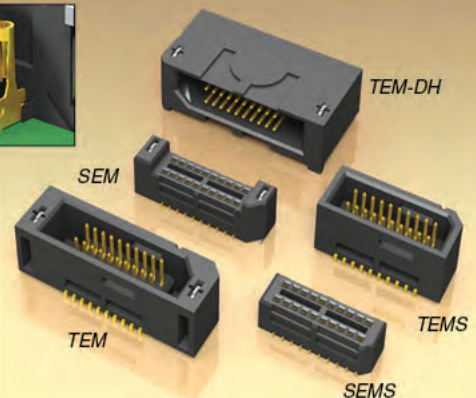
SMM

S2M



### 0,8mm (.0315") Pitch

- 6mm, 7mm and 10mm stack heights
- Vertical and right angle mating headers for micro backplane applications
- Optional weld tabs
- Extended Life Product™ testing available



### 2mm (.0787") Pitch

- Wide range of stack heights
- Screw down, weld tab and locking clip options
- Mating discrete wire cable systems available
- Extended Life Product™ testing available



## RUGGED HIGH SPEED BOARD-TO-BOARD

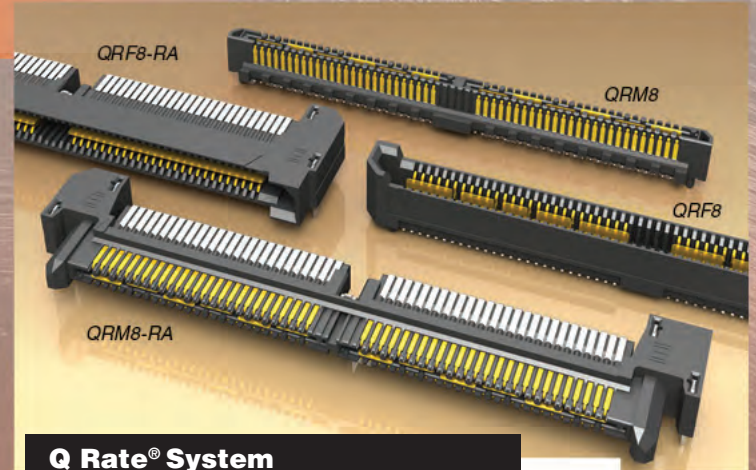
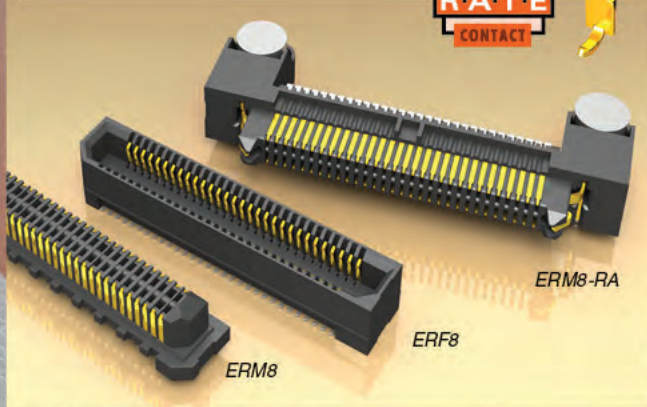
### Edge Rate™ System

Rugged Edge Rate™ contacts

0,5mm and 0,8mm pitch

Optimized for SI performance

- Robust when “zippered” during unmating
- Metal friction latches available
- Increased contact wipe designed for rugged applications



### Q Rate® System

Rugged Edge Rate™ contacts

Space saving slim body design with integral power/ground plane

0,8mm (.0315") pitch

- Robust when “zippered” during unmating
- Increased contact wipe designed for rugged applications



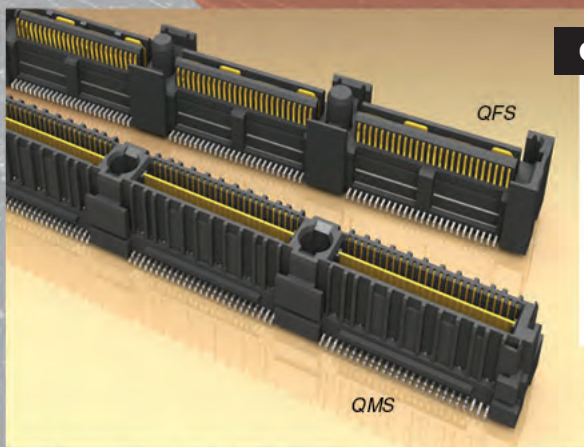
### Q2™ System

Increased insertion depth/rugged

9.2A – integral power/ground plane

0,635mm (.025") pitch

- RF, power, retention pin options
- Up to 208 signal pins standard
- Up to 64 signal pairs standard



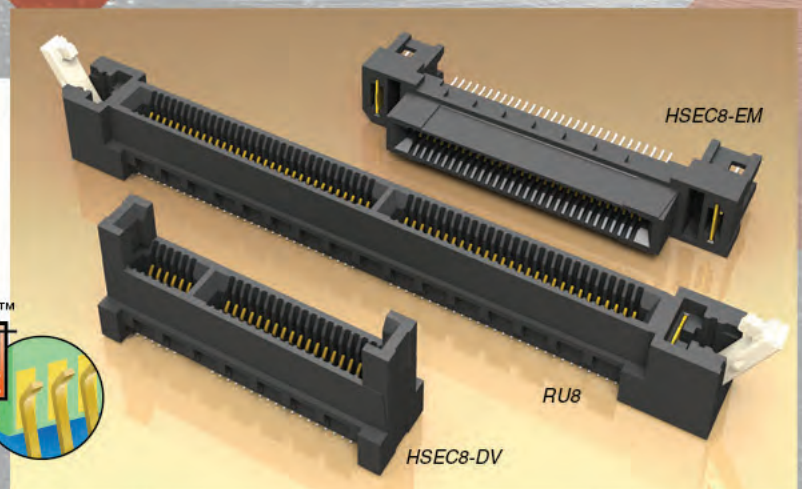
### High Speed Edge Card Sockets

Rugged Edge Rate™ contacts

Optimized for SI performance

0,8mm (.0315") pitch

- Surface mount and edge mount designs
- RiseUp® elevated board stacking to 30mm
- Optional rugged board locking and cable latching features





# CONNECTORS

## MICRO RUGGED BOARD-TO-BOARD

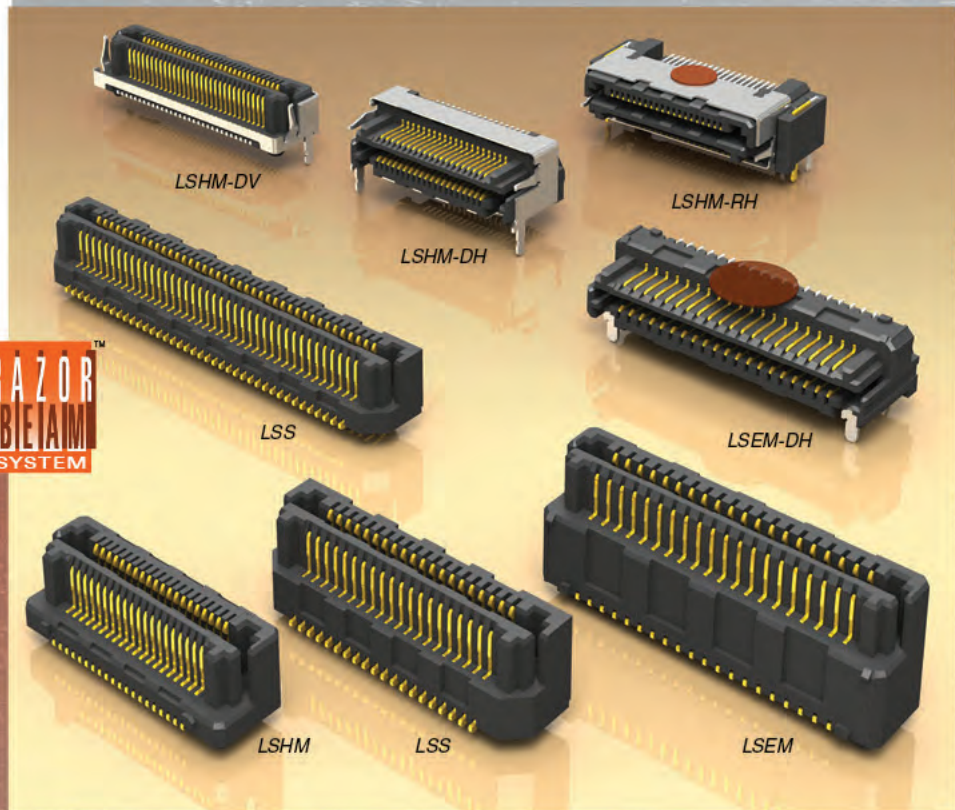
### Hermaphroditic Interfaces

**High Speed/High Density**

**Slim row-to-row design,  
5mm or less**

**0,5mm, 0,635mm and 0,8mm pitch**

- Shrouded with audible click when properly mated
- Self-mating system reduces inventory costs
- Coplanar 0,5mm (.0917") pitch applications available

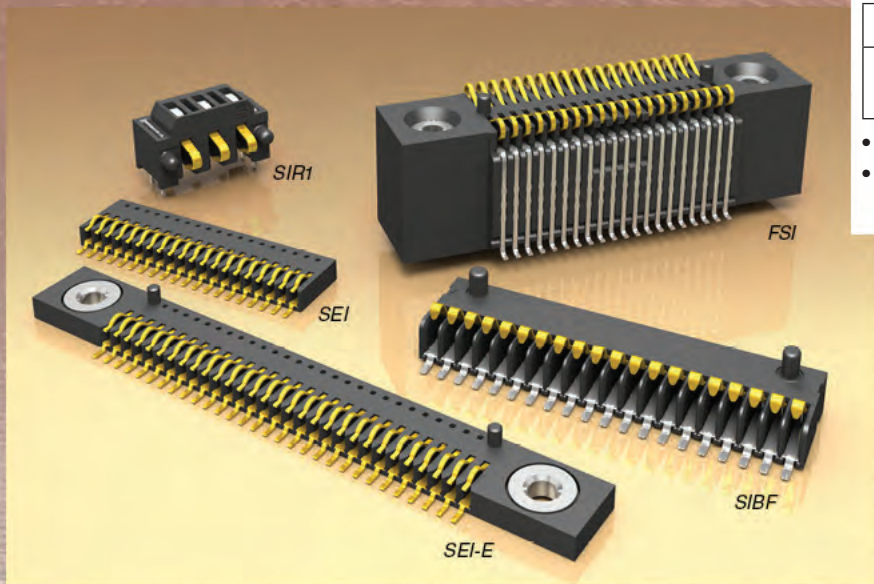


### One Piece Interfaces

**1mm, 1,27mm and 2,54mm pitch**

**Robust screw mount mechanical hold-down options**

- Low profile: (1,65mm) .065"
- Elevated profile: 3mm, 6mm and 10mm designs



APPLICATION	FEATURE
High shock/vibration	Robust design and mechanical hold-down options
Quality improvement	Superior performance and reliability compared to elastomers
Flexible MCM interfaces	Choice of profile, pitch, lead count and configuration
Cost reduction	Handling/processing only one component

## EXTENDED LIFE PRODUCTS

### 10 Year Mixed Flowing Gas (MFG)

E.L.P.™ Products are tested to rigorous standards which evaluate contact resistance in simulated storage and field conditions.

- High Mating Cycles (250 to 2,500)
- Certain plating and/or contact options apply
- For complete details on Samtec's E.L.P.™ program and test results for Extended Life Products, please visit [samtec.com/ELP](http://samtec.com/ELP) or email the Customer Engineering Support Group at [CES@samtec.com](mailto:CES@samtec.com)



## RUGGED FEATURES & OPTIONS



### Board-to-Board Interfaces

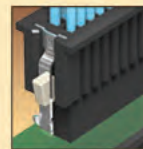
- Retention pins
- Positive latching systems
- Friction locks
- Board locks
- Threaded screw down hardware
- Weld tabs
- Standoffs
- Alignment pins

### Cable Assemblies

- Retention pins
- Friction locks
- Captive panel screws
- Screw downs and mounting brackets
- Ejector headers with locking caps
- AccliMate™ Sealed Circular & Rectangular Cable Systems
- Positive latching systems



**JACK SCREWS**  
Threaded inserts, jack screws and mounting hardware



**POSITIVE LATCHING**  
Manually activated latches increase unmating force by up to 200%



**FRICTION LOCKS**  
Metal or plastic friction locks increase retention/withdrawal force



**RETENTION PINS**  
Increase unmating force by up to 50%



**RUGGED IDC**  
Ejector headers, locks and caps



**BOARD LOCKS**  
Boards are mechanically locked together



**SCREW DOWNS**  
Secure mechanical attachment to boards



**BOARD STANDOFFS**  
Precision machined standoffs for 5mm to 30mm board spacings



# CABLES

## MICRO RUGGED DISCRETE WIRE SYSTEMS

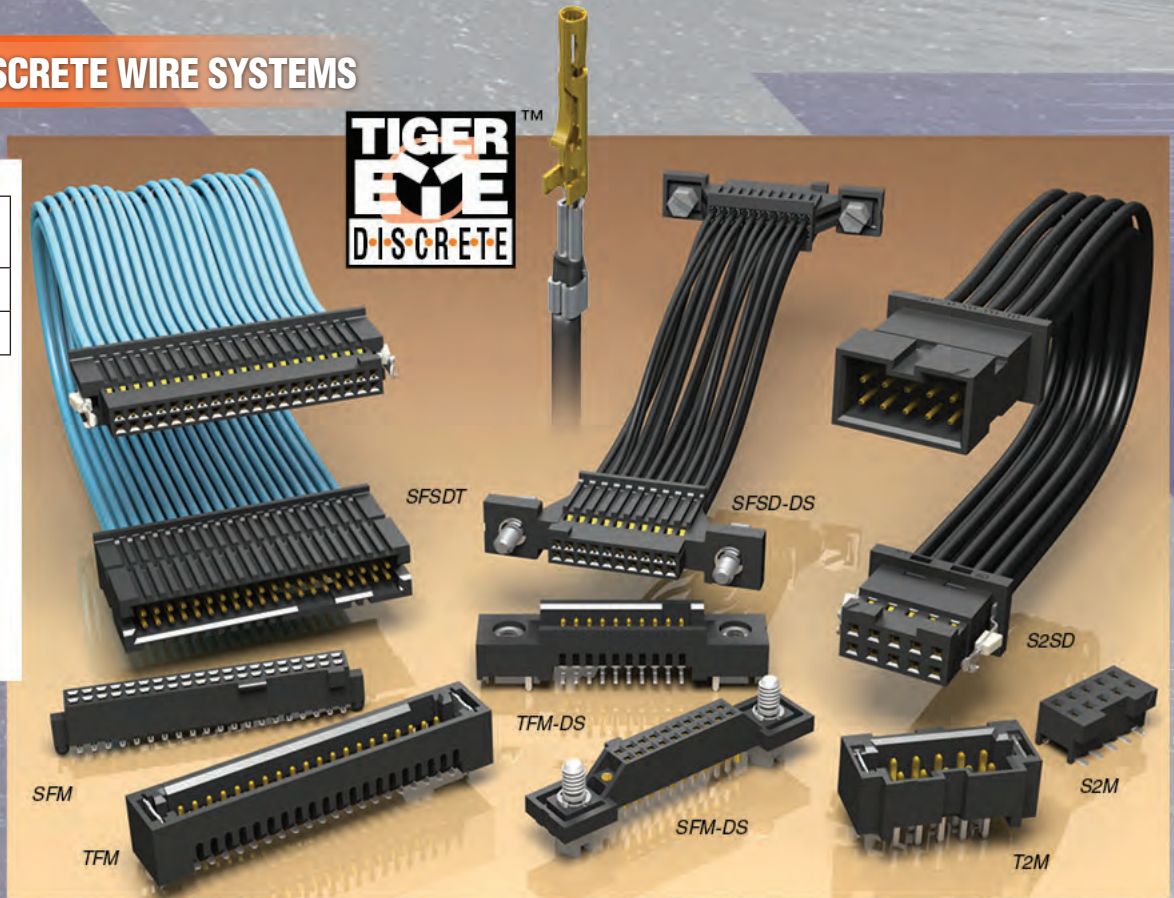
### Tiger Eye™ System

High reliability Tiger Eye™ contact system

Metal latching system

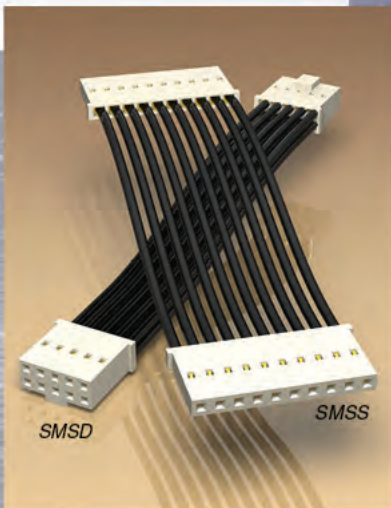
1,27mm and 2mm pitch

- Screw down options
- Shrouded, polarized and keyed for rugged applications
- Choice of single or double-ended
- PVC or Teflon® cable\*
- Components or complete assemblies
- Assembly tooling available



### Universal Jumper

- .100" (2,54mm) pitch
- Mates with any unshrouded .025" (0,64mm) square header
- Choice of 24, 26 or 28 AWG



### 1mm Pitch System

Dual leaf contact system

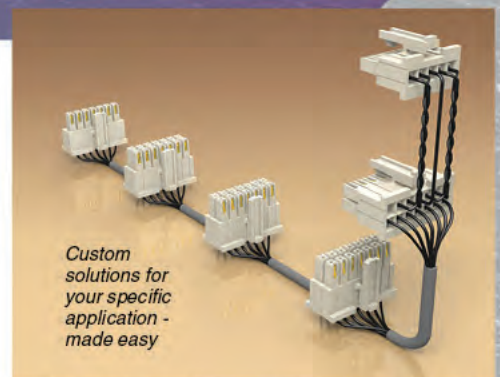
- 2 through 20 I/Os
- Vertical and right angle PCB connectors
- Single and double-ended
- Components and hand tools available



## DISCRETE WIRE FLEXIBILITY...

### Easy Customs

- Twisted pair cable
- Custom color-coded cable
- Wire stripping (for cable assemblies only)
- Custom pinouts
- Breakouts to other connectors
- Color-coded Teflon® cable\*
- Daisy chains
- Sleeving
- For more information please visit: [samtec.com/discretewire](http://samtec.com/discretewire)



\*Teflon® is a trademark of Dupont.

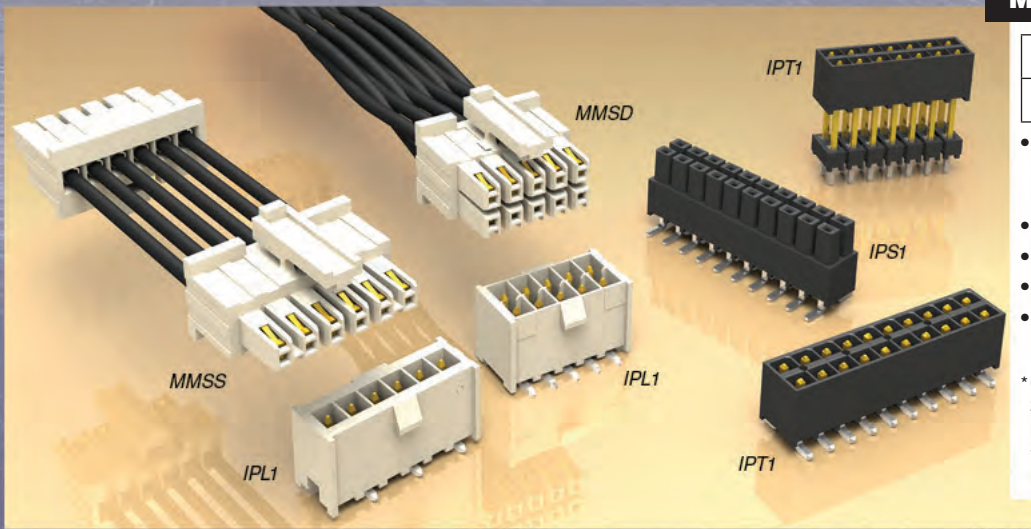
### Mini Mate®

3.8A / contact\*

.100" (2,54mm) pitch

- Discrete wire and board-to-board system with individually shrouded contacts
- Optional polarized position feature
- Elevated stack height options
- Rugged Tiger Buy™ contacts
- Available as components or assemblies

\* Current Rating with 20 AWG, 6 contacts powered (2x3), 30°C Temp Rise @ 95°C ambient



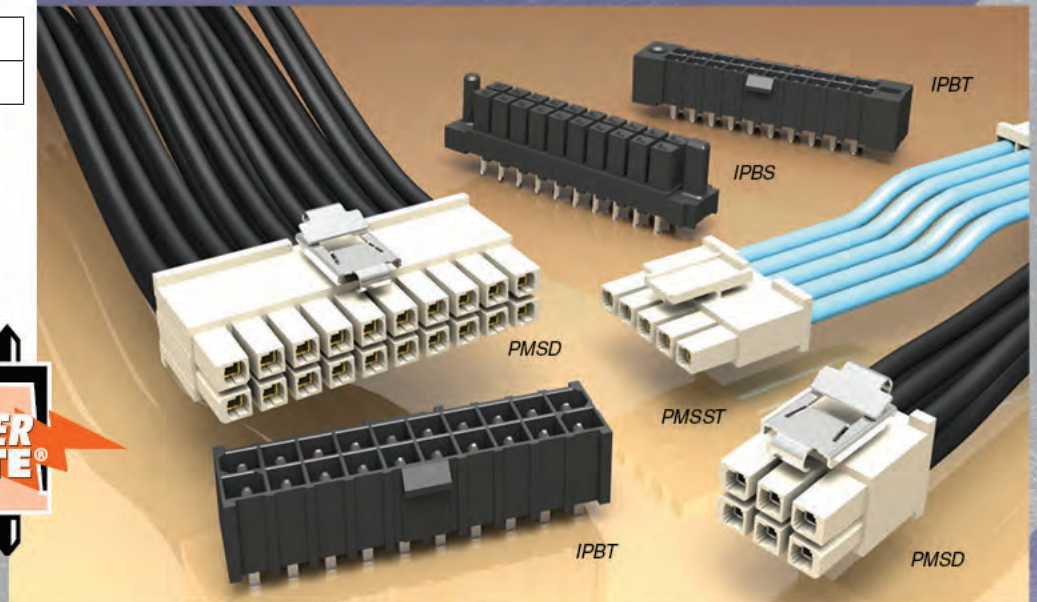
### Power Mate®

7.0A / contact\*

.165" (4,19mm) pitch

- Discrete wire and board-to-board system with individually shrouded contacts
- Optional polarized guide posts
- Vertical through-hole and surface mount sockets
- Available as components or assemblies

\* Current Rating with 16 AWG, 6 contacts powered (2x3), 30°C Temp Rise @ 75°C ambient



## DISCRETE WIRE FLEXIBILITY...

### Build it Online

- Online cable assembly Solutionator® coming soon!
- Countless design permutations and options
- Design your solution in a minute
- Most orders ship within a week
- Real-time power performance calculations for your exact solution
- Live chat with engineers

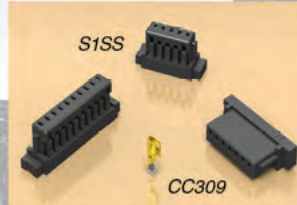


# RUGGED CABLES

## DISCRETE WIRE FLEXIBILITY ...BUILD IT YOURSELF

### 1mm Pitch Components

- Dual leaf style Phosphor Bronze contacts
- Single row bodies from 2 to 20 positions
- 28 AWG or 30 AWG
- Crimp style termination
- Hand and semi-automatic assembly tooling available



### 1,27mm Pitch Components

- High reliability BeCu Tiger Eye™ contact system
- Single or double row bodies with 5 to 50 positions per row
- 28 AWG or 30 AWG
- Optional metal latch or screw down option for additional ruggedness
- Hand and semi-automatic assembly tooling available

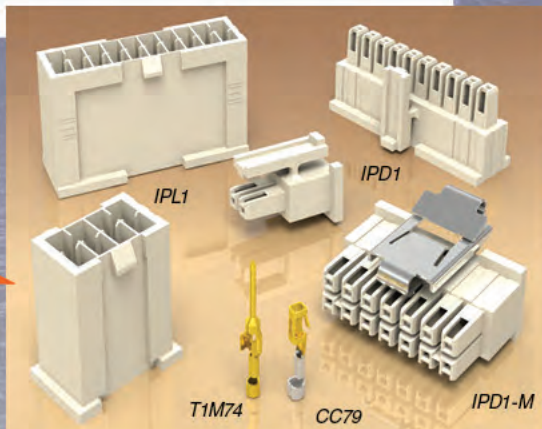


### 2mm Pitch Components

- High reliability BeCu Tiger Eye™ contact system
- Double row bodies with 5 to 30 positions per row
- 24 AWG through 30 AWG
- Optional metal latch or screw down option for additional ruggedness
- Hand and semi-automatic assembly tooling available

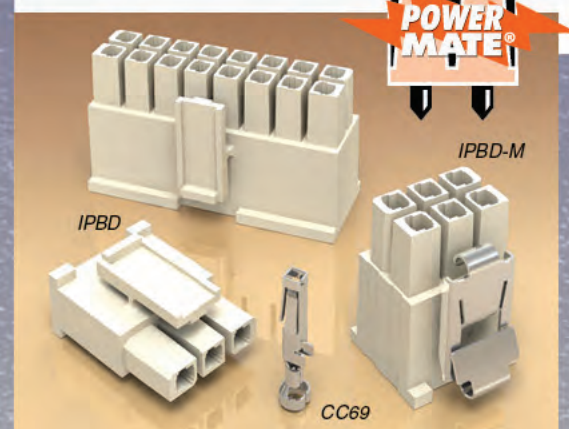
### 2,54mm Pitch Components

- Individually shrouded contact system
- Single or double row bodies with 2 to 25 positions per row
- 20 AWG through 30 AWG
- Standard plastic latch or optional metal latch for additional ruggedness
- Hand and semi-automatic assembly tooling available



### 4,19mm Pitch Components

- Individually shrouded contact system
- Single or double row
- 2 to 15 positions per row
- 16 AWG through 24 AWG
- Standard plastic latch or optional metal latch for additional ruggedness
- Hand and semi-automatic assembly tooling available



### Discrete Wire Sample Kits

- Discrete wire sample kits (CDK Series) are an ideal way to order an assortment of Samtec's most popular pin counts for prototyping and development projects
- Choice of four kits:
  - 1,27mm Tiger Eye™ System for 28 AWG and 30 AWG
  - 2mm Tiger Eye™ System for 24 AWG to 30 AWG
  - Mini Mate® System for 26 AWG to 30 AWG
  - Mini Mate® System for 20 AWG to 24 AWG
- Includes a variety of bodies and options, plenty of contacts, a hand crimping tool and contact extractor tool
- Visit [samtec.com/discretewire](http://samtec.com/discretewire) for more information



CDK (includes hand tool CAT-HT)



CAT-HT

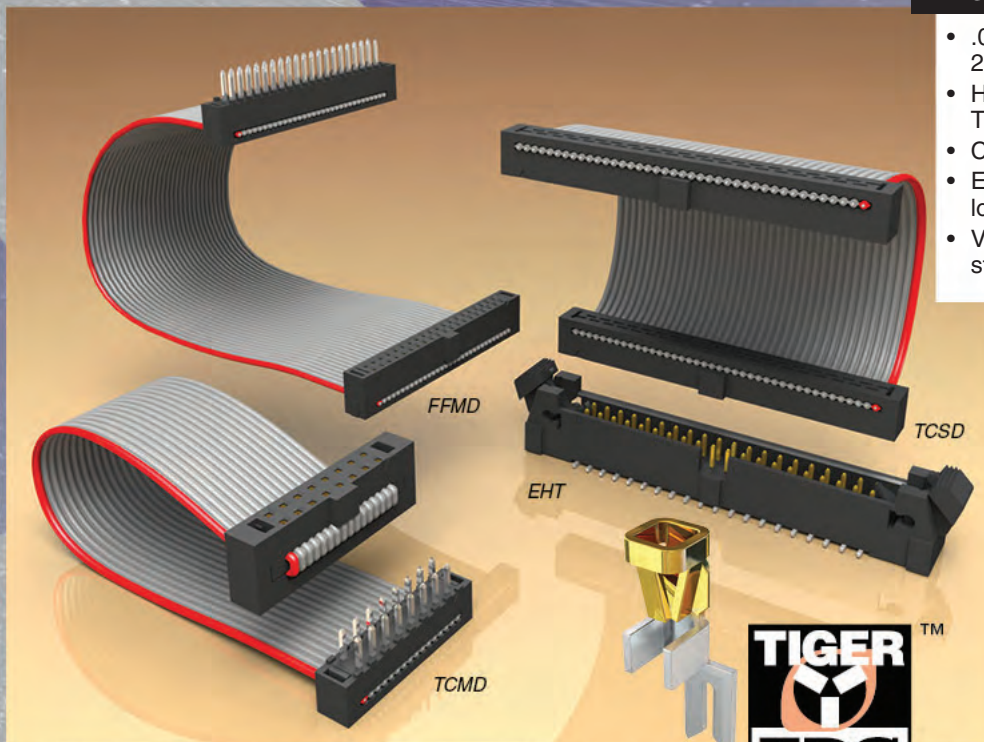


CAT-MA

### Discrete Wire Tooling

- Hand tools for low volume, pre-production and repair applications
- Quick-change semi-automatic terminating units compatible with industry standard equipment
- Bench top terminating units
- Wide variety of additional application specific hardware and field service capabilities
- Visit [samtec.com/discretewire](http://samtec.com/discretewire) for more information

## IDC CABLE ASSEMBLIES



### Micro Rugged IDC Solutions

- .050" (1,27mm) and 2mm (.0787") pitch systems
- High performance Tiger Eye™ contacts
- Choice of socket and plug terminations
- Ejector headers with optional locking caps
- Variety of options including rugged strain relief

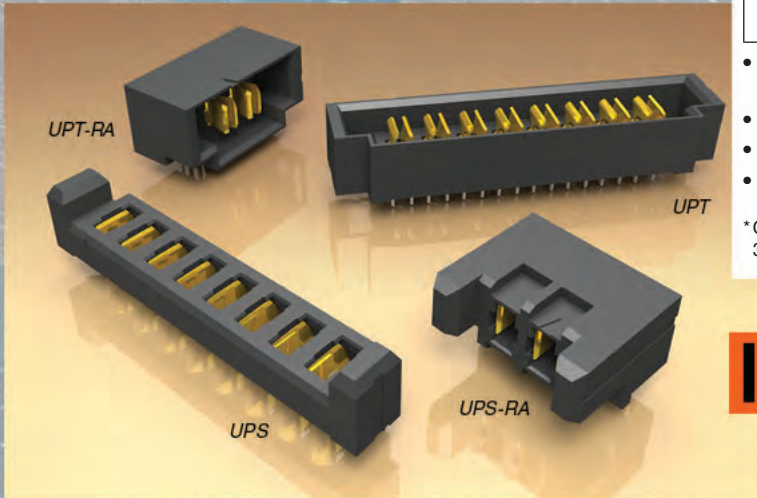
## POWERSTRIP™ INTERCONNECT SYSTEMS

### PowerStrip™/15

16.7A / blade\*

- Up to 8 power contacts on (3,81mm) .150" pitch (UPT/UPS Series)
- 7mm and 10mm stack height
- Vertical, right angle and hermaphroditic
- Optional Locking Clips

\*Current Rating with 4 blades powered, 30°C Temp Rise @ 95°C ambient



### PowerStrip™/25

22.3A / blade\*

Power only or power/signal combo

- Up to 10 power contacts on (5,00mm) .197" pitch (MPT/MPS Series)
- Vertical, right angle and hermaphroditic (MPPT Series) headers
- Right angle versions with screw downs also available
- Power/Signal combination (MPTC/MPSC Series) with up to 80 signal contacts on (2mm x 2mm) .0787" x .0787" pitch
- Optional locking clips
- Discrete Wire cable assemblies with choice of 14 AWG or 16 AWG and rugged latching system
- "Hinging" PowerStrip™/25 for 90° mating radius, blind mating (FMPT/FMPS Series)

\*Current Rating with 4 blades powered, 30°C Temp Rise @ 75°C ambient





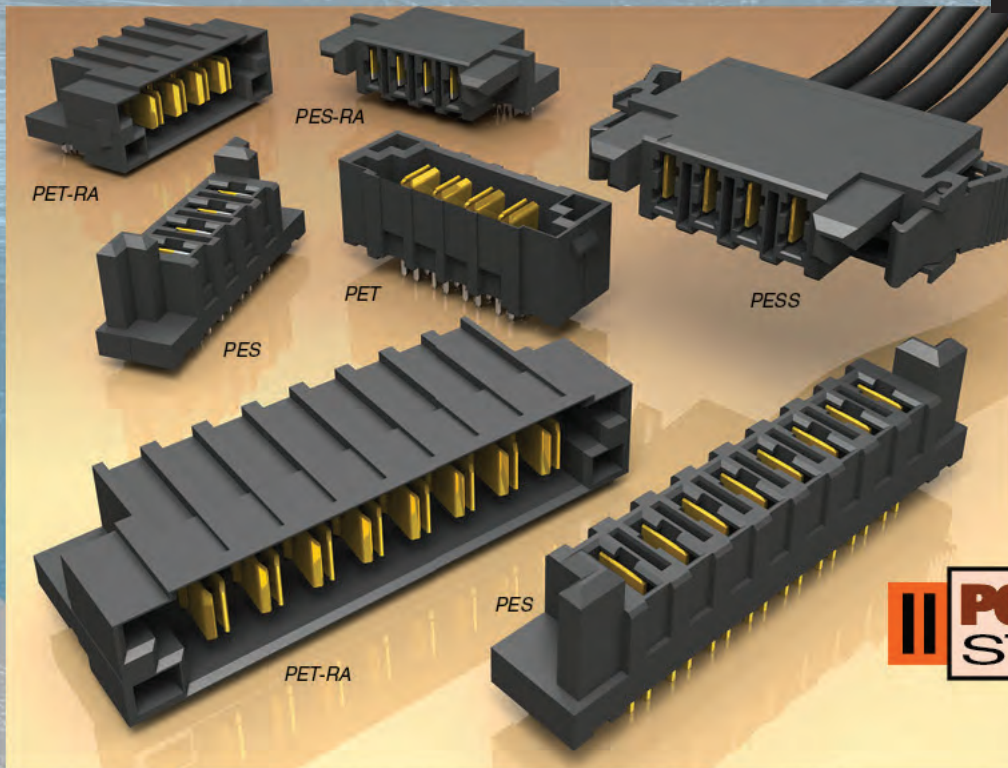
### PowerStrip™/35

26.2A / blade\*

Power only or power/signal combo

- Up to 8 power contacts on (6,35mm) .250" pitch (PET/PES Series)
- Power/Signal combination (PETC/PESC Series) with up to 40 signal contacts on .100" (2,54mm) pitch
- Discrete Wire cable assemblies (PESS Series) with choice of 10 AWG or 12 AWG and rugged latching system

\*Current Rating with 4 blades powered, 30°C Temp Rise @ 75°C ambient



### EXTreme Ten60Power™

Up to 60A / blade\*

Flexible modular system

Power only or power/signal combo

- Low 10mm profile (Right Angle)
- Power pins on (5,50mm) .217" spacing for high current DC
- Signal pins on (2,54mm) .100" spacing
- Rated for resistance to arcing for hot-plug applications

\*One blade powered @ 75°C ambient

EXTreme Ten60Power™ is a trademark of Molex Incorporated.



### EXTreme Ten60Power™

\*Current carrying capacities for PowerStrip™ connectors are de-rated 20%. See samtec.com for full test report.

# RUGGED SEALED I/O

## IP68 FLEXIBLE SEALED CIRCULARS

### Complete Assemblies for Turn Key Flexibility

**Bayonet-style latching system**

**Metal or plastic**

**12mm, 16mm and 22mm shell sizes**

- Flexible pin count, size, location and gender (18 standard pinouts)
- Variety of socket and terminal options:
  - Signal pins (0,50mm or 1,00mm DIA)
  - Power pins (1,50mm DIA)
  - RF connectors
  - Signal/power and signal/RF combinations

- Variety of panel interface termination options:
  - Discrete wire terminated with connectors
  - Blunt cut cable, solder cups and PCB mount
- Custom cable bundling including mix-and-match 30 to 14 AWG and RG 316
- Four color coded keying options
- Clip & shell sockets with soldered terminations
- Meets IP68 requirements for dustproof and waterproof sealing



### Components for Field Termination Flexibility

**Bayonet-style latching system**

**Metal or plastic**

**12mm, 16mm and 22mm shell sizes**

- Kitted components to facilitate efficient field assembly
- Standard solder cups for termination to wire
- Panel interfaces available with PCB mount terminations
- Bulk cable with mix-and-match wire type and gauges, bundled to assure IP68 performance

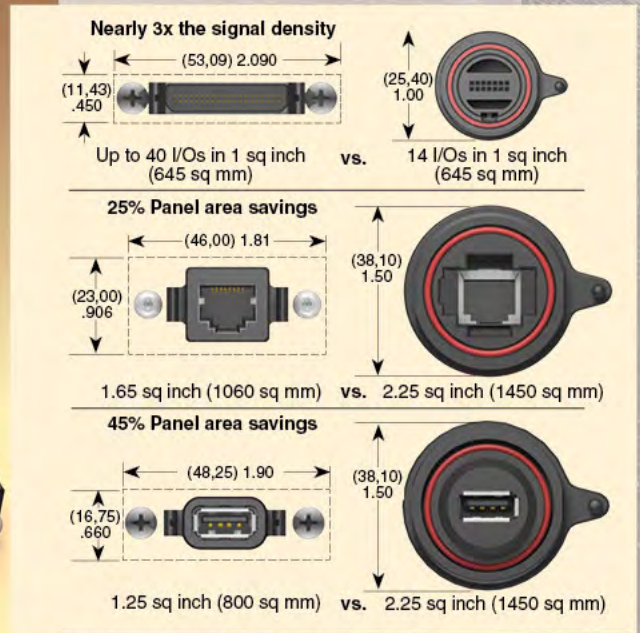


## IP68 SPACE SAVING SEALED RECTANGULARS

### Maximum IP68 Panel Density

- Space saving rectangular design
- Audible click when properly mated
- Quick connect/disconnect with positive latching

- Ethernet, rugged Tiger Eye™ and USB signal systems
- Maximum density for low profile sealed applications
- Ethernet field termination kits
- Flexible panel mounting options



## IP68 THREADED SEALED CIRCULARS

### Size 10 & 17

#### Ethernet, USB and Mini USB

- Ethernet field termination kits and assembly tooling for long cable runs and small openings
- Signal and power systems also available



## THINK OUTSIDE THE CATALOG

### Easy Sealed Cable Solutions

- Quickly design your perfect sealed interconnect system from over 350,000 design possibilities
- Calculate performance, current rating, voltage drop
- Live chat with AccliMate™ engineers for custom options
- Variety of shells, pin sizes, signal, power and I/O interfaces
- Complete assemblies and field termination kits available
- Design your solution at: [samtec.com/solutionator/sealedio](http://samtec.com/solutionator/sealedio)



[samtec.com/solutionator/sealedio](http://samtec.com/solutionator/sealedio)





**SUDDEN SERVICE**



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