samtec

# AUTOMOTIVE
## SOLUTIONS CATALOG

RUGGED, HIGH-PERFORMANCE INTERCONNECTS FOR AUTOMOTIVE APPLICATIONS

# AUTOMOTIVE

## INTERCONNECT & DESIGN CAPABILITIES

Samtec delivers Sudden Service® solutions for standard and customer-specific automotive designs by providing an array of options to meet the robust quality, production and compliance requirements of our customers. Our automotive interconnect systems are ideal for applications requiring high-performance, high-density, high-reliability / high mating cycles, optics and microelectronics solutions, with varying degrees of PPAP options.

### STANDARD CATALOG PRODUCT

Certified ISO-9001

Built to Samtec's drawing

Sudden Samples for prototyping

Short lead times for volume

### A-SERIES FOR AUTOMOTIVE CATALOG

Certified to IATF 16949 to support Level 3 PPAP requirements

– Controlled IATF facility

– Registered International Material Data System (IMDS)

Built to Samtec's drawings & standards

Short lead times for volume

### ACD-SERIES FOR CUSTOMIZATION

Certified to IATF 16949 to support all agreed upon customer specific requirements

– Controlled IATF facility

– Registered International Material Data System (IMDS)

Vendor Managed Inventory options for volume

**Please note:** All PPAP Level 3 products can be found on pages 18-70. Not all products featured on pages 4-17 meet PPAP guidelines, but Samtec has a 3 to 5 year roadmap for expanding products available with PPAP compliance. Please contact **AutoSalesGroup@samtec.com** for more information.

# TABLE OF CONTENTS

# INFOTAINMENT


The accessibility of information and entertainment on the go is becoming standard in today's automobiles. From touch screen displays for multimedia to driver assist systems and smartphone pairing, the demand for bandwidth and connectivity is growing. As a result, in-vehicle technology is becoming more complex but the need for simplified designs to save space and keep costs low is still at the forefront.

## PRODUCT GROUPS

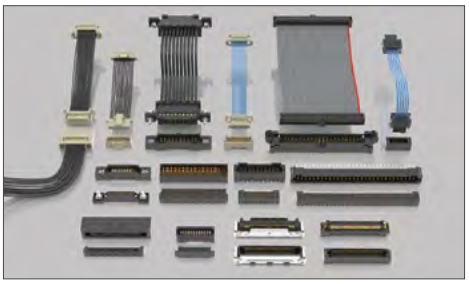
Samtec offers a wide variety of rugged, high-speed solutions in small form factors for automotive applications.

ULTRA MICRO INTERCONNECTS

HIGH-SPEED DUAL ROW STRIPS

EDGE CARD SYSTEMS

RUGGED SIGNAL INTEGRITY



RUGGED CONTACT SYSTEM

HIGH-SPEED CABLE

**www.samtec.com/solution-blocks**

## ULTRA LOW PROFILE STRIPS

PAM4 56 Gbps

- Micro Blade & Beam ultra slim, ultra low profile
- Stack heights down to 2 mm
- Slim body designs for increased PCB space savings
- Ultra fine 0.40 mm and 0.50 mm pitch
- Compatible with mPOWER® for power/signal solutions
- See page 32-33 or visit **samtec.com/micro** for more micro pitch, low profile solutions

## Q RATE® GROUND PLANE CONNECTOR STRIPS

NRZ 28 Gbps

- Slim 4.60 mm body width saves board space
- 0.80 mm pitch Edge Rate® contacts
- Increased 1.20 mm contact wipe for a reliable connection
- Integral power/ground plane rated for up to 8.5 A
- Compatible with mPOWER® for signal/power flexibility
- See page 29 or visit **samtec.com/mezzanine** for more high-speed board-to-board solutions

## RUGGED HERMAPHRODITIC CONNECTORS

RAZOR™ BEAM SYSTEM

14 Gbps

- Razor Beam™ contact for high-speed and fine pitch systems
- 0.50 mm, 0.635 mm and 0.80 mm pitch
- 4-6x greater mating/unmating forces vs. typical micro pitch connectors
- Self-mating connectors reduce inventory costs and can be interchanged for varying stack heights
- Ten stack height options from 5 mm to 12 mm
- See page 31 or visit **samtec.com/razorbeam** for more rugged, self mating solutions

## APPLICATION: ADVANCED DISPLAYS

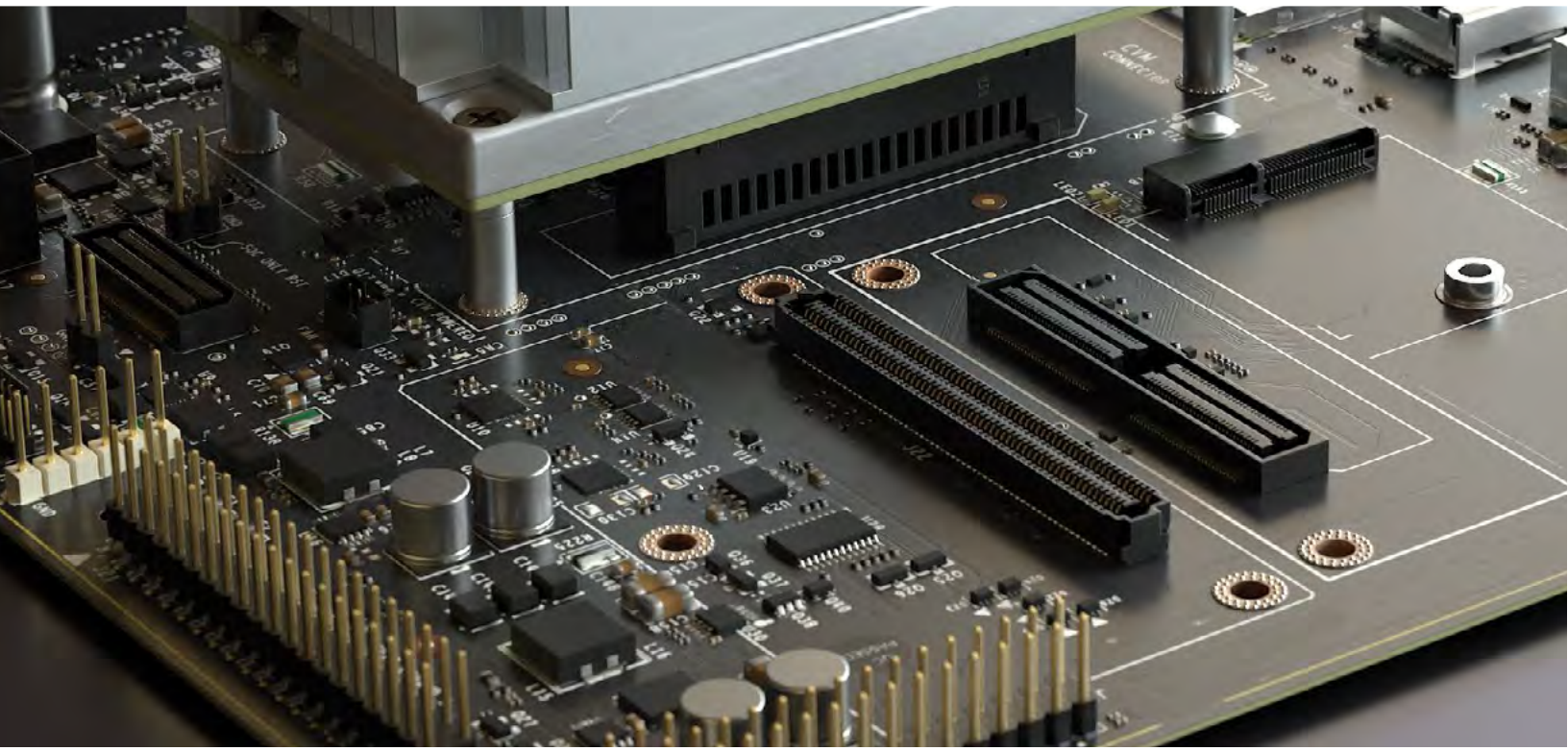
Automotive displays are the hub, connecting a driver to an increasingly wide range of functions, systems and networks both inside and outside of the vehicle with just a touch of the screen. Samtec offers high-speed and high-cycle solutions to support the growing volume of personalized data and features:

GENERATE™ 0.80 mm PITCH HIGH-SPEED EDGE CARD CONNECTORS

GENERATE™

- 28 Gbps NRZ performance
- PCI Express® 3.0 and 4.0 capable
- Vertical, right-angle and edge mount
- Rugged signal/power combination available
- See pages 24-25 for more information about HSEC8, or visit **samtec.com/edgecard** for additional edge card solutions

# EMBEDDED COMPUTE MODULES



As autonomous vehicle technology grows, AI and machine learning innovations increase the reliability of human and machine interaction. SoMs and CoMs programmed for deep learning offer reduced network load and lower latencies while collecting data to accurately identify and respond to people and the environment, both inside and outside of the cabin. Samtec offers high-performance solutions to help capture real-time data, for increased vehicle safety and comfort.

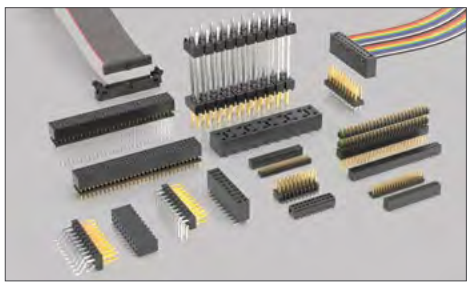
## PRODUCT GROUPS

Samtec's variety of high-speed, high-density interconnects support SoMs/CoMs in automotive systems.

HIGH-DENSITY ARRAYS

EDGE CARD SYSTEMS

RUGGED SIGNAL INTEGRITY



FLEXIBLE STACKING

FLEXIBLE POWER

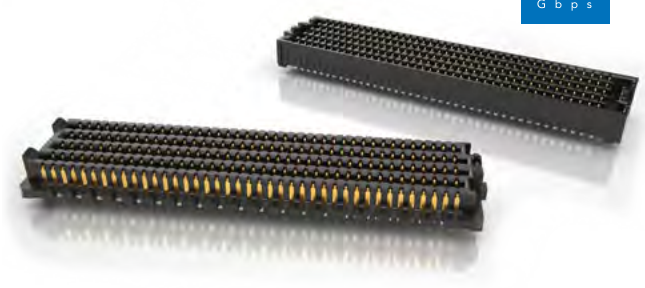
HIGH-SPEED CABLE

**www.samtec.com/solution-blocks**

## HIGH-DENSITY ARRAYS

SEARAY™ PAM4 56 Gbps

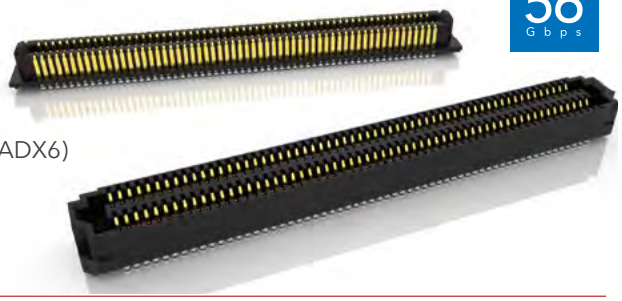
- Open-pin-field arrays for maximum routing and grounding flexibility
- SEARAY™ 1.27 mm pitch with up to 560 Edge Rate® contacts
- SEARAY™ 0.80 mm pitch with up to 720 contacts for 2x the density
- LP Array™ low profile arrays with 4 mm, 4.5 mm and 5 mm stack heights
- Compatible with mPOWER® for power/signal solutions
- See pages 18-21 or visit **samtec.com/arrays** for more high-performance and high-density solutions



## HIGH-PERFORMANCE ARRAYS

ACCELERATE® HD PAM4 56 Gbps

- AcceleRate® HP high-performance to 112 Gbps PAM4
- AcceleRate® HD high-density arrays to 56 Gbps PAM4
- Up to 400 I/Os in a 4-row design; roadmap to 1,000+ pins (APX6)
- Low profile 5 mm stack height; up to 10 mm (APX6) and slim 5 mm width (ADX6)
- Data rate capable with PCIe® 5.0, and 100 GbE (APX6)
- Visit **samtec.com/arrays** for more high-speed, small form factor solutions



## EDGE RATE® RUGGED SIGNAL INTEGRITY SYSTEMS

EDGE® RATE CONTACT PAM4 56 Gbps

- 0.80 mm pitch Edge Rate® contacts optimized for signal integrity performance and less prone to damage when "zippered" to unmate
- 56 Gbps PAM4 performance
- 1.50 mm contact wipe for a reliable connection
- Stack heights from 7 mm to 18 mm
- Compatible with mPOWER® for signal/power flexibility
- See pages 22-23 or visit **samtec.com/mezzanine** for more high-speed board-to-board solutions

## APPLICATION: AI SERVER INFRASTRUCTURE

Artificial intelligence is the path to self-driving vehicles. In order to get there, supercomputers are being used to continuously process a vast amount of image and video data to become proficient at that skill. Samtec offers a variety of interconnect solutions to meet the high-performance and signal integrity requirements of deep learning for autonomous vehicles:

ACCELERATE® SLIM DIRECT ATTACH CABLE ASSEMBLY

ACCELERATE®

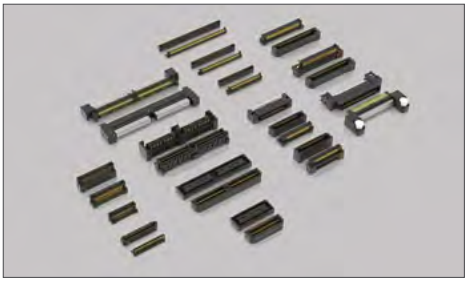
- 56 Gbps PAM4 performance
- Slim 7.6 mm width and up to 24 differential pairs
- 34 AWG, 100 Ω Eye Speed® ultra-low skew twinax cable
- Flyover® technology simplifies board layout and extends signal reach
- Visit **samtec.com/hdr** for more high-speed micro coax and ultra low skew twinax cable assemblies

# CHARGING INFRASTRUCTURE

The demand for increased charging power continues to grow as more electric vehicles hit the roadways. Whether for one car or a large fleet of vehicles, a reliable and accessible charging infrastructure is needed to support long range mileage with fast and efficient, on-demand charging solutions. Samtec offers rugged and high-power solutions for reliable connectivity to support power conversion, thermal management and current or future needs of the electric vehicle.

## PRODUCT GROUPS

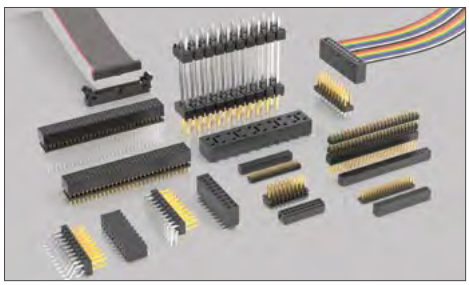
A wide variety of Samtec interconnect solutions are available to support charging infrastructure related needs.



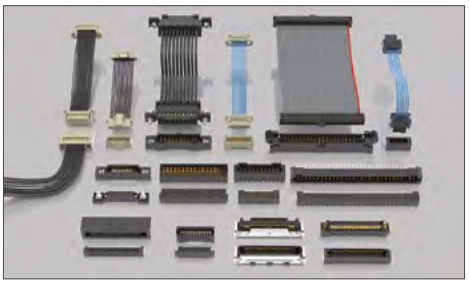
HIGH-SPEED DUAL ROW STRIPS

RUGGED SIGNAL INTEGRITY

DISCRETE WIRE



FLEXIBLE STACKING



RUGGED CONTACT SYSTEM

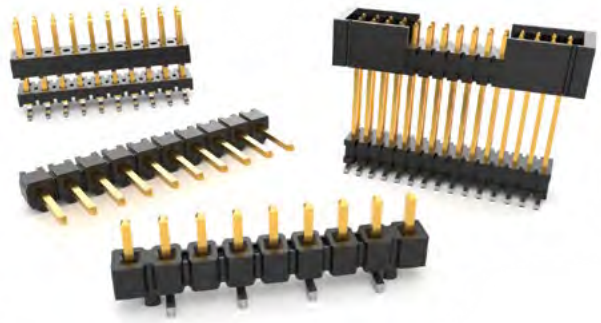
FLEXIBLE POWER

**www.samtec.com/solution-blocks**

## mPOWER® ULTRA MICRO POWER INTERCONNECTS


- Micro 2.00 mm pitch with up to 18 A/blade
- Design flexibility for power-only or power/signal applications
- Use with Samtec's high-speed connector systems for a unique power/signal system
- Selectively loaded contacts for creepage and clearance requirements
- See pages 34-35 or visit **samtec.com/power** for more high-power and signal/power solutions

## FLEXIBLE STACKING



- 0.80 mm to 2.54 mm pitch systems
- Pass-through contacts to connect multiple boards
- Up to six rows and 300 total pins
- Low profile and skyscraper solutions
- See pages 45-67 or visit **samtec.com/flexiblestacking** for more board stacking and one-piece solutions

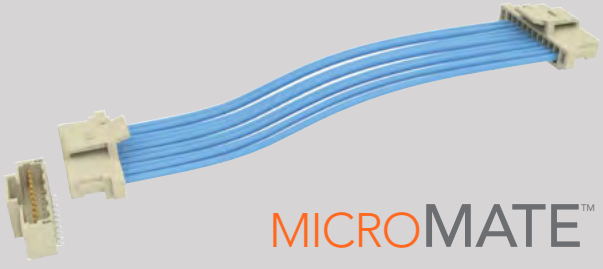
## TIGER EYE™ RUGGED SYSTEMS


- High-reliability multi-finger, BeCu contact system for rugged and high cycle applications
- 1.27 mm pitch with surface mount or through-hole tails
- Optional ruggedizing features: alignment pins, weld tabs, screw downs
- Vertical and right-angle for parallel, perpendicular or coplanar applications
- See pages 36-44 or visit **samtec.com/rugged** for additional micro rugged solutions

## APPLICATION: POWER MANAGEMENT

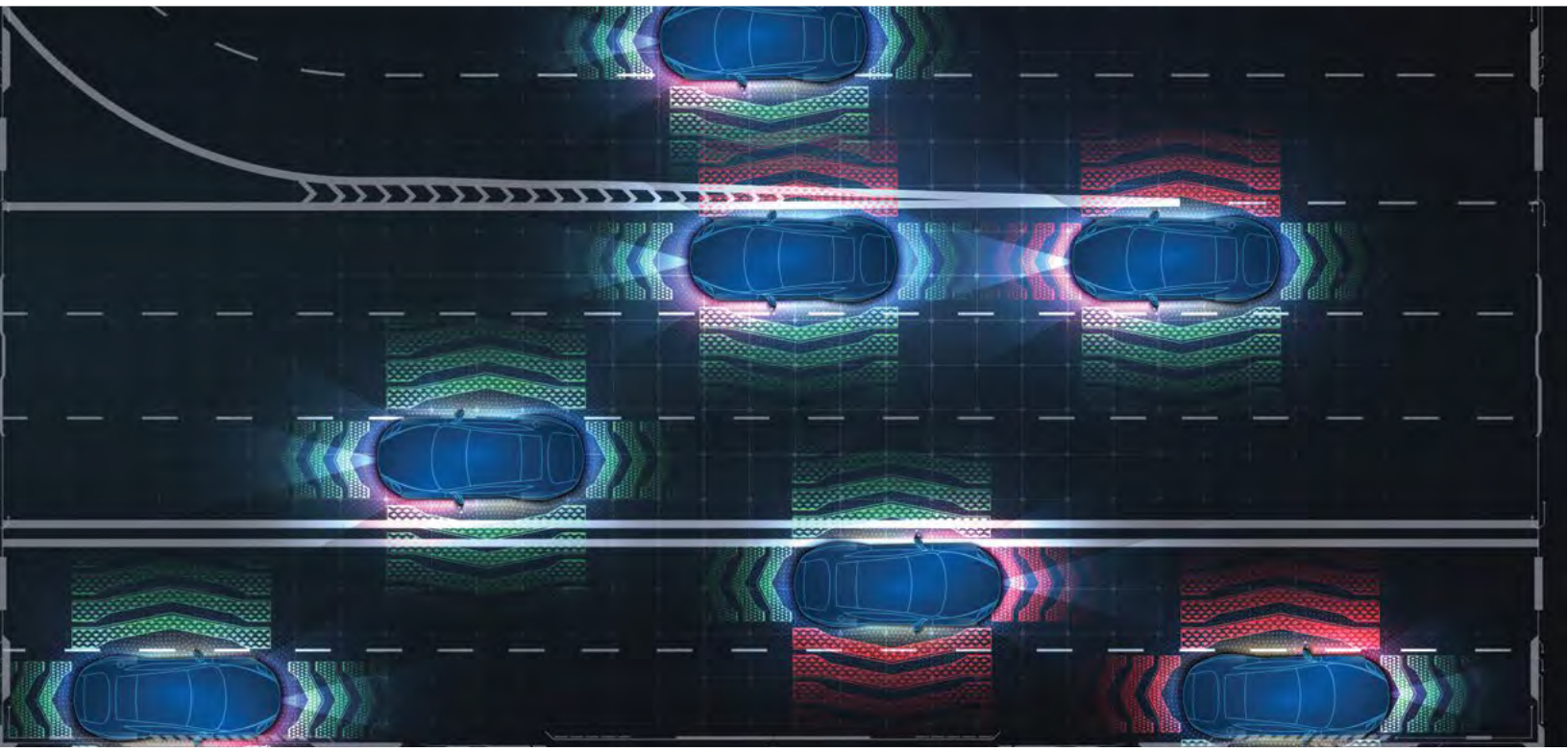
On-board chargers convert AC to DC power for electric vehicles, but they also ensure a safe and efficient charge. By monitoring charging conditions and the type of charging system being used, the on-board charger provides flexibility while ensuring reliable functionality. Samtec's discrete wire solutions can help meet these needs for power management inside the vehicle:

MICRO MATE™ 1.00 mm PITCH DISCRETE WIRE SYSTEMS




- Supports cable-to-board, cable-to-cable and panel-to-board
- Crimp-style dual leaf contact system for a reliable connection
- Rugged positive latching for increased retention
- 28 and 30 AWG wire options in PVC or Teflon®
- Visit **samtec.com/discretewire** for more discrete wire cable assemblies, components and tooling available.

# VISION SYSTEMS

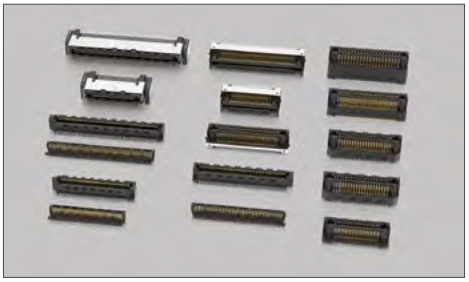


From ADAS to fully autonomous vehicles, the use of automotive vision systems to study the road and environment is growing. LiDAR, Radar, sensors and cameras require low latency and power consumption to gather large amounts of data in real-time for safe and reliable operation in all conditions. Samtec offers high-speed, space saving and flexible solutions to help connect vision systems to the computing system for fast, immediate reactions on the road.

## PRODUCT GROUPS

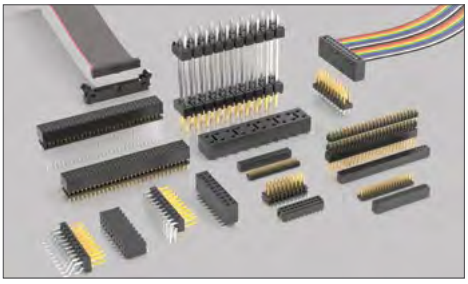
Samtec offers a variety of flexible options for high-data rate and space saving solutions to support automotive vision systems.

HIGH-DENSITY ARRAYS



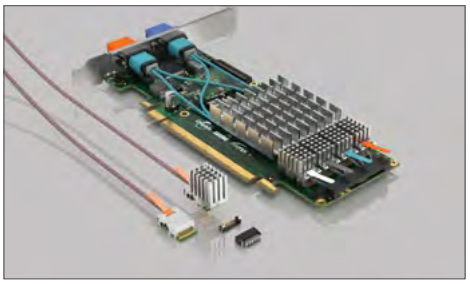
ULTRA MICRO INTERCONNECTS

PRECISION RF



FLEXIBLE STACKING

EDGE CARD SYSTEMS



OPTICS

**www.samtec.com/solution-blocks**

## GENERATE™ HIGH-SPEED EDGE CARD SYSYEMS

GENERATE™

NRZ 28 Gbps

- 0.80 mm pitch with up to 200 total pins
- Vertical, right-angle and edge mount
- Rugged edge card/power combination
- Latches and weld tabs available
- See pages 24-25 or visit **samtec.com/edgecard** for additional edge card solutions

## ULTRA LOW PROFILE STRIPS

28 Gbps

- Micro Blade & Beam ultra slim, ultra low profile
- Stack heights down to 2 mm
- Slim body designs for increased PCB space savings
- Ultra fine 0.40 mm and 0.50 mm pitch
- Compatible with mPOWER® for power/signal solutions
- See pages 32-33 or visit **samtec.com/micro** for more micro pitch, low profile solutions

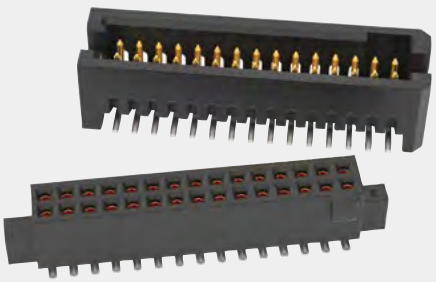
## MICRO PITCH SYSTEM

- 0.50 mm pitch with up to 60 contacts
- Mitigates misalignment in X and Y directions
- Choice of body height
- Ideal for multiple connectors on a board
- See page 68 or visit **samtec.com/rugged** for additional micro rugged solutions

## APPLICATION: 3D MAPPING

3D mapping profiles the roadway to build a digital map that can be automated for real-time accuracy with an understanding of traffic rules and the ability to compensate for unlikely conditions. Samtec's micro rugged interconnects meet the demands of scalability and flexibility needed for machine vision and learning in ADAS and autonomous driving systems:

TIGER EYE™ MICRO RUGGED SYSTEMS



TIGER™ EYE SYSTEM

- 1.27 mm and 2.00 mm pitch
- Three-finger BeCu contact system for high-reliability and high cycles
- Ruggedizing features: locking, screw downs, alignment pins, weld tabs
- Up to 3.8 A/pin and 8 Gbps performance
- SET (Severe Environment Testing) Qualified Product
- See pages 36-44 for more information about Tiger Eye™, or visit **samtec.com/rugged** for additional micro rugged solutions

# C-V2X TECHNOLOGY

C-V2X (Cellular Vehicle-to-Everything) technologies go beyond line-of-sight systems to enable vehicle intelligence, improve traffic flow and increase safety by leveraging next gen 5G networks and cloud services. This interconnected ecosystem requires a reliable communications infrastructure for high-speed and high-frequency data exchange. Samtec's expanding automotive interconnect portfolio helps route data from radios to sensors throughout the vehicle.

## PRODUCT GROUPS

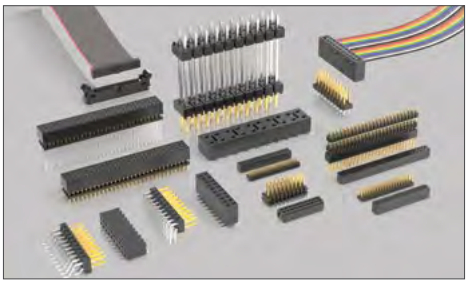
A wide variety of Samtec interconnects are available to support C-V2X applications.

PRECISION RF

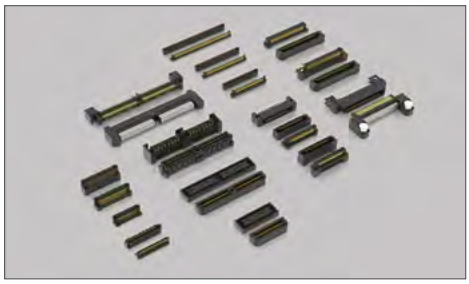
HIGH-DENSITY ARRAYS

EDGE CARD SYSTEMS

HIGH-SPEED CABLE



FLEXIBLE STACKING



HIGH-SPEED DUAL ROW STRIPS

**www.samtec.com/solution-blocks**

## PRECISION RF CABLES & CONNECTORS

- Supports frequency range from 18 GHz to 110 GHz
- Microwave/millimeter wave cable assemblies, cable and board connectors
- Variety of solutions: 1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, 3.50 mm, SMP, SMPM, SMA, SSMA
- Bulls Eye® high-performance test assemblies to 70 GHz
- Visit **samtec.com/rf** for a full line of RF solutions

## HIGH-SPEED ARRAYS

LP ARRAY™ PAM4 56 Gbps

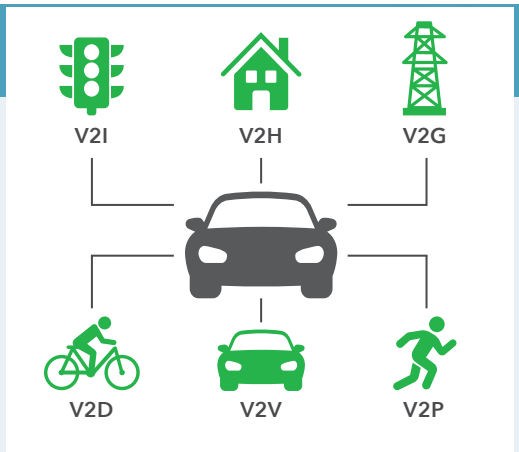
- Open-pin-field arrays for maximum routing and grounding flexibility
- SEARAY™ 1.27 mm and 0.80 mm pitch with up to 720 Edge Rate® contacts
- LP Array™ low profile arrays with 4 mm, 4.5 mm and 5 mm stack heights
- AcceleRate® HP and AcceleRate® HD arrays with up to 400 I/Os in a 4-row design; roadmap to 1,000+ pins (APX6)
- Compatible with mPOWER® for power/signal solutions
- See pages 18-21 or visit **samtec.com/arrays** for more high-speed, high-density solutions

## HIGH-SPEED EDGE CARD SYSTEMS

- 0.50 mm to 2.00 mm pitch with up to 200 total pins
- Vertical, right-angle and edge mount
- Rugged edge card/power combination
- Latches and weld tabs available
- See pages 24 -27 or visit **samtec.com/edgecard** for additional high-speed edge card solutions

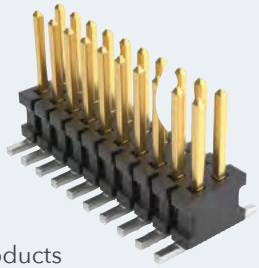
## APPLICATION: CONNECTED VEHICLES

V2X technology requires embedded systems to connect vehicles and the surrounding environment for greater predictability and safety on the road. Low-cost, reliable debugging and configuring of these systems will be key to ensure constant connection. Samtec offers a variety of solutions to meet these needs, such as JTAG standard and compliant interconnects:




JTAG FLEXIBLE STACKING CONNECTORS

- .050" and .100" pitch terminal strips
- Shrouded and high-temp versions
- Low profile and elevated options
- Visit **samtec.com/jtag** for a list of JTAG compliant products



# RUGGED FEATURES & CUSTOM SOLUTIONS

## RUGGEDIZING OPTIONS

### FRICTION LOCKS

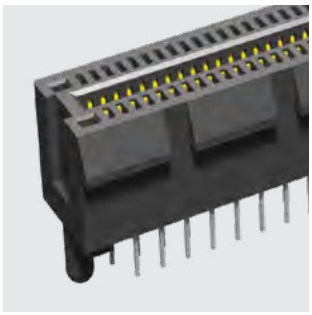
Metal or plastic friction locks increase retention/withdrawal force

### GUIDE POSTS

Easy and secure mating

### SCREW DOWNS

Secure mechanical attachment to the board



### ALIGNMENT PINS

Easy and secure mating

## CONTACT FLEXIBILITY


### TIGER CLAW™

Dual wipe contact pass-through applications

Ultra-low profile


### TIGER EYE™

High-reliability

High mating cycles

Multi-finger contact


### TIGER BUY™

High-retention

Cost effective

Tuning fork contact

### POWER EYE

High current

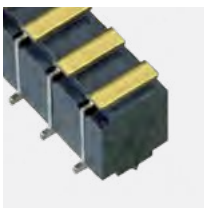
High-reliability

Three-finger contact

## CUSTOM SOLUTIONS

Pin Modifications

Body Modifications



Custom Connectors

Prototyping

Special Platings

Testing

Qualification Testing

# CERTIFICATIONS

Samtec is IATF 16949, ISO 14001 and ISO 9001 certified, and is fully integrated with in-house tooling, plating and automated manufacturing capabilities that provide for advanced development, low-cost, quick turn and high volume production. In addition, Samtec is compliant with International Traffic and Arms Regulations (ITAR) and with EU WEEE and RoHS directives. Please visit **samtec.com/quality** for additional certification information.

IATF 16949 CERTIFIED | ISO14001 CERTIFIED | ISO 9001 CERTIFIED | IMDS COMPLIANT | RoHS COMPLIANT LEAD FREE | REACH COMPLIANT

# PPAP

## PRODUCTION PART APPROVAL PROCESS

Samtec uses proven processes that meet our IATF 16949 certification. Samtec designates these products with an A-Series part number. For each A-Series product, a customer will receive a Level 3 Product Part Approval Process (PPAP) package. Contents shown below are the supporting documents required to meet Level 3 PPAP.


1. INDEX PAGE
2. SERIES DESIGN RECORD – SAMTEC RELEASED PRINT
3. CHANGE HISTORY
4. SERIES DESIGN FMEA
5. PROCESS FLOW DIAGRAM
6. PROCESS FMEA
7. CONTROL PLAN – PRE-LAUNCH
8. CONTROL PLAN – SERIAL PRODUCTION
9. MEASUREMENT SYSTEM STUDIES (GAGE R&R)
   - **a.** Total Gage R&R < 10% is acceptable
   - **b.** Total Gage R&R >10% , <30% is acceptable for non-critical characteristics
10. ASSEMBLY DIMENSIONAL RESULTS (100% FAI & BALLOONED PRINT)
    - **a.** Tabular Summary Format (according to AIAG manual)
      - 100% layout for 5 parts for each cavity (1 cavity)
      - 100% layout for 3 parts for each cavity (2 cavities)
      - 100% layout for 2 parts for each cavity (3 or 4 cavities)
      - 100% layout for 1 part for each cavity (6 or more cavities)
    - **b.** Drawing numbered to correlate with submitted dimensional results and drawing notes
11. INITIAL PROCESS STUDY (SPC)
    - Cpk > 1.67 or 100% in process inspection
12. COMPONENT PPAP
13. MATERIAL CERTIFICATION
14. QUALIFIED LABORATORY DOCUMENTATION
15. CAPACITY & RUN AT RATE DATA FORM – DATA FROM PRODUCTION TRIAL RUN
    - Data must come from a minimum run of 300 parts
16. RUN @ RATE CHECKLIST
17. EVIDENCE OF IMDS SUBMISSION
    - Proof of submission into the International Material Data System
18. PART SUBMISSION WARRANT (PSW)
19. FACILITY IATF CERTIFICATION

GREEN: SUBMITTED, WHITE: RETAINED

# ULTRA RUGGED TESTING


Samtec's automotive products undergo testing that is comparable to USCAR2-6 specifications for performance reliability: Severe Environment Testing, Extended Life Product™, and Design Qualification. Proven processes are also used that meet Samtec's IATF 16949 certification. These products are designated with an A-Series part number and supplied to customers with a Level 3 Product Part Approval Process (PPAP) package.

Contact **AutoSalesGroup@samtec.com** for more information or to discuss your specific automotive application.

## SEVERE ENVIRONMENT TESTING

Severe Environment Testing (SET) is a Samtec initiative to test products beyond typical industry standards and specifications for performance confidence in rugged/harsh environment industries. These products undergo additional testing, inspired by military standards, to ensure they are more than suitable for automotive, military, space, industrial and other extreme applications.

Visit samtec.com/SET or contact SET@samtec.com for additional information, a full list of qualifying products and current available test results.

### SET QUALIFIED A-SERIES PRODUCTS

**A-SFM/A-TFM** – Tiger Eye™ 1.27 mm Pitch Micro Rugged System

**A-SEAF/A-SEAM** – SEARAY™ High-Density Arrays

**A-LSHM** – Razor Beam™ Hermaphroditic Strips

**A-SSM/A-TSM** – .100" Pitch Square Post Header & Socket

**A-CLP/A-FTSH** – .050" Pitch Header & Socket

**A-ERF8/A-ERM8** – Edge Rate® Rugged High-Speed Strips

**A-S2M/A-T2M** – Tiger Eye™ 2.00 mm Pitch Micro Rugged System

**A-UMPS/A-UMPT** – mPOWER® Ultra Micro Power Connectors

**A-SEAF8/A-SEAM8** – SEARAY™ Ultra-High Density Arrays

### SET TESTING INCLUDES

- Mating/Unmating/Durability
- Mechanical Shock/Random Vibration/LLCR & Nanosecond Event Detection
- Temperature Cycling
- Non-Operating Class Temperature
- DWV at Altitude
- Electrostatic Discharge (ESD)
- Outgassing

# EXTENDED LIFE PRODUCT™

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

- 10 year Mixed Flowing Gas (MFG)
- High Mating Cycles (250 to 2,500)
- Certain plating and/or contact options will apply

For complete details about Samtec's E.L.P.™ program, a full list of qualifying products and test results, please visit samtec.com/ELP or email the Customer Engineering Support Group at ASG@samtec.com

## E.L.P.™ A-SERIES PRODUCTS

**A-ERF8/A-ERM8** – Edge Rate® 0.80 mm Pitch Strips

**A-HSEC8** – Generate™ High-Speed Edge Card Sockets

**A-QRM8/A-QRF8** – Q Rate® Slim Ground Plane Connectors

**A-QSE/A-QTE** – Q Series® Low Profile Ground Plane Connectors

**A-SEAF/A-SEAM** – SEARAY™ High-Density Arrays

**A-SFM/A-TFM** – Tiger Eye™ 1.27 mm Pitch Micro Rugged System

**A-CLP/A-FTSH** – Tiger Claw™ .050" Pitch Header and Socket

**A-SMM/A-TMM** – Tiger Eye™ 2.00 mm Pitch Header and Socket

**A-CLT/A-TMMH** – Tiger Claw™ 2.00 mm Pitch Header and Socket

**A-SSM/A-TSM** – Tiger Claw™ .100" Pitch Header and Socket

# DESIGN QUALIFICATION TESTING

All Samtec series undergo Design Qualification Testing (DQT), which includes:

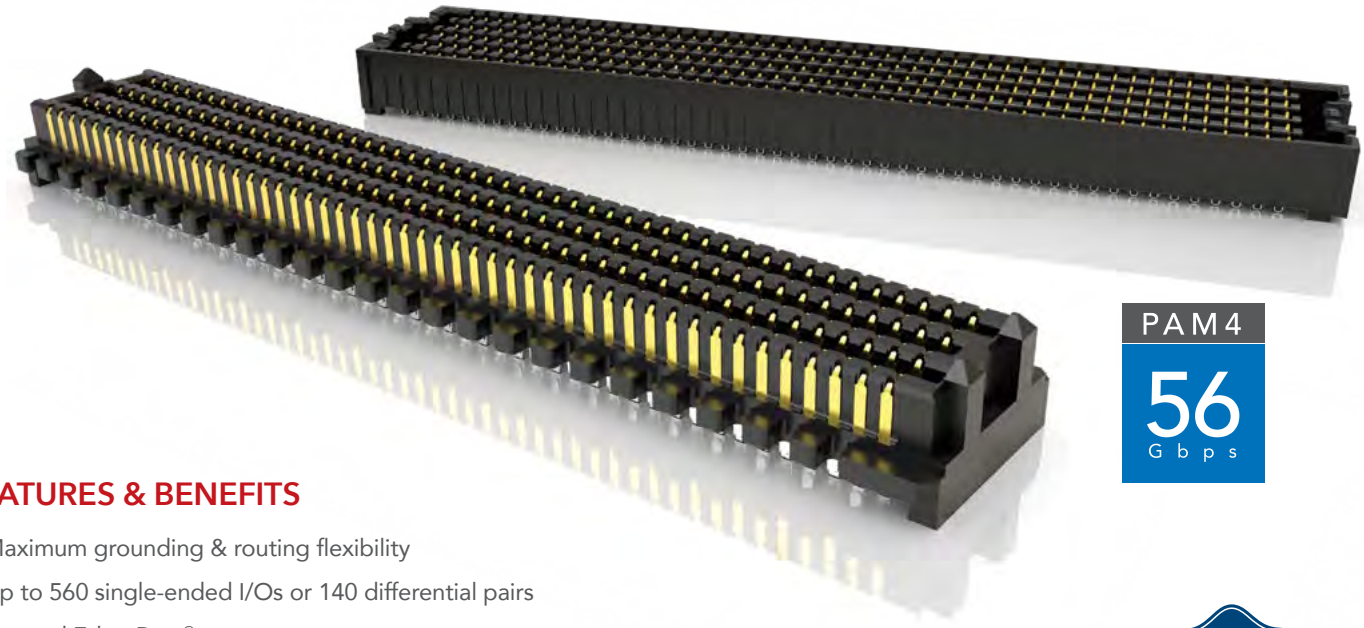
- Gas Tight
- Normal Force
- Thermal Aging
- Mating/Unmating/Durability
- IR/DWV
- Current Carrying Capacity (CCC)
- Mechanical Shock/Random Vibration/LLCR
- Mechanical Shock/Random Vibration/Event Detection

| USCAR2-6 APPLICABLE SPECIFICATIONS | SAMTEC COMPARABLE SPECIFICATIONS - EIA STANDARD |
|---|---|
| 5.1.4.1 Temperature Classification | T1, T2, T3 Available |
| 5.1.4.2 Sealing Classification | S1 Available |
| 5.1.4.3 Vibration Classification | V1 Available |
| 5.1.7 Connector and/or Terminal Cycling | Initial Mating/Unmating (25 Cycles) |
| 5.1.9 Circuit Continuity Monitoring | Continuity Event Detection (Min. 50 ns) |
| 5.2.1 Terminal to Terminal Engage/Disengage Force | Mating/Unmating 100 Cycles (Up to 1000+ Cycles on E.L.P.™) |
| 5.3.1 Dry Circuit Resistance | Contact Resistance (10.1 to 15.0 mΩ) |
| 5.3.2 Voltage Drop | Voltage Drop (Reported at Rated Current) |
| 5.3.3 Maximum Test Current Capability | Current Rating per Contact (30 °C Rise, 20% De-Rated at 105 °C) |
| 5.3.4 Current Cycling | 500 cycles (125% of Rated Current) |
| 5.4.2 Connector-Connector Mating/Unmating/Retention/Lock Deflection Forces (non-assist) | Forces Reported for 25, 50, 75 and 100 Cycles |
| 5.4.6 Vibration/Mechanical Shock | Shock/Vibe (100 G, 6 ms, Sawtooth Wave, 11.3 fps, 3 shocks/direction, 3 axis) |
| 5.5.1 Insulation Resistance | IR (1,000 MΩ minimum at 500 VDC) |
| 5.6.1 Thermal Shock | 100 Cycles, 30 min Dwell, 85 °C to -55 °C, Immediate Transition |
| 5.6.2 Temperature/Humidity Cycling | Test Temp 25 °C to 65 °C, 90-95% R.H. for 240 hrs (SET Available) |

# SEARAY™

# HIGH-DENSITY OPEN-PIN-FIELD ARRAYS

(1.27 mm) .050" PITCH



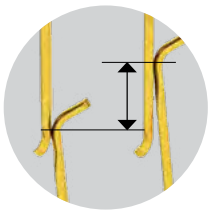
PAM4 56 Gbps

## FEATURES & BENEFITS

- Maximum grounding & routing flexibility
- Up to 560 single-ended I/Os or 140 differential pairs
- Rugged Edge Rate® contacts
- Compatible with A-UMPT/A-UMPS for power/signal flexibility
- Standards: VITA 47, VITA 57.1 FMC, VITA 57.4 FMC+, VITA 74 VNX, PISMO™ 2
- Supports high-speed protocols such as Ethernet, PCI Express®, Fibre Channel & InfiniBand

EDGE® RATE CONTACT

10 YEAR MFG WITH 30 µ" GOLD
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

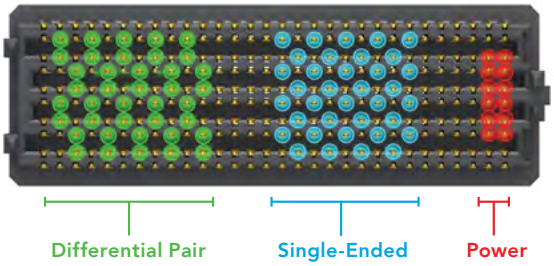


(1.12 mm) .044" Nominal Wipe

Solder Charges

Power / Signal Applications

MAXIMUM GROUNDING & ROUTING FLEXIBILITY



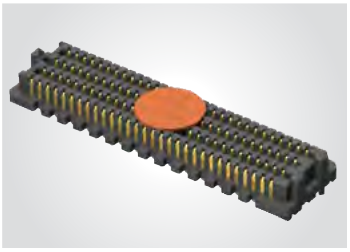

## KEY SPECIFICATIONS

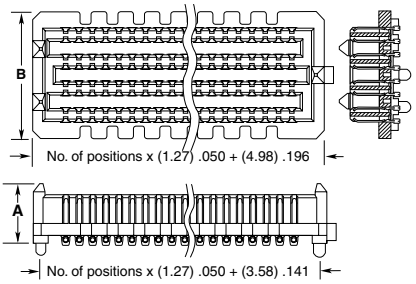
| PITCH | STACK HEIGHTS | TOTAL PINS | INSULATOR MATERIAL | CONTACT MATERIAL | PLATING | OPERATING TEMP RANGE | CURRENT RATING | WORKING VOLTAGE | LEAD-FREE SOLDERABLE |
|---|---|---|---|---|---|---|---|---|---|
| 1.27 mm x 1.27 mm | 7 mm - 18.5 mm | 40 - 560 | Black LCP | Copper Alloy | Au or Sn over 50 µ" (1.27 µm) Ni | -55 °C to +125 °C | 2.7 A per pin (10 adjacent pins powered) 7 mm stack height | 240 VAC | Yes |

**Note:** Some lengths, styles and options are non-standard, non-returnable

| SERIES | POSITIONS PER ROW | LEAD STYLE | PLATING OPTION | NO. OF ROWS | SOLDER TYPE | A | K | TR |
|---|---|---|---|---|---|---|---|---|
| **A-SEAM** Terminal<br>**A-SEAF** Socket | **–10, –15, –20, –30, –40, –50**<br>A-SEAM & A-SEAF: –10 only available in –04 Row<br>A-SEAM: -15 only available in –04 Row with –02.0 Lead Style, and -10 Row with any Lead Style;<br>A-SEAF: –15 only available in –04 or –10 Row with –5.0 Lead Style | Specify LEAD STYLE from chart | **–L** = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on solder tail<br>**–S** = 30 µ" (0.76 µm) Gold on contact area, Matte Tin on solder tail | **–04**<br>**–05**<br>**–06**<br>**–08**<br>**–10** A-SEAM: –04, –05 & –06 (Rows not available with –06.5 Lead Style) | **–2** = Lead-Free Solder Charge | **–A** = Alignment Pin<br>**–K** Polyimide Film Pick & Place Pad<br>**–TR** = Tape & Reel | | |

## A-SEAM
**Board Mates:** A-SEAF

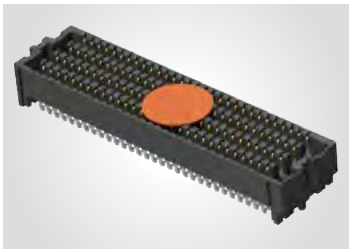


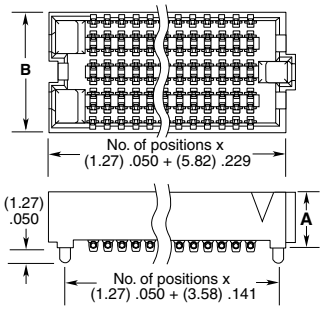



| LEAD STYLE | A |
|---|---|
| –02.0 | (5.61) .221 |
| –03.0 | (6.60) .260 |
| –03.5 | (7.11) .280 |
| –06.5 | (10.16) .400 |
| –07.0 | (10.59) .417 |
| –09.0 | (12.60) .496 |
| –11.0 | (14.61) .575 |

| NO. OF ROWS | B |
|---|---|
| –04 | (7.06) .278 |
| –05, –06 | (9.60) .378 |
| –08 | (12.14) .478 |
| –10 | (14.68) .578 |

## A-SEAF
**Board Mates:** A-SEAM






| LEAD STYLE | A |
|---|---|
| –05.0 | (5.05) .199 |
| –06.0 | (6.05) .238 |
| –06.5 | (6.55) .258 |
| –07.5 | (7.54) .297 |

| NO. OF ROWS | B |
|---|---|
| –04 | (5.66) .223 |
| –05, –06 | (8.20) .323 |
| –08 | (10.74) .423 |
| –10 | (13.28) .523 |

## MATED HEIGHTS

| A-SEAM LEAD STYLE | A-SEAF LEAD STYLE | | | |
|---|---|---|---|---|
| | -05.0 | -06.0 | -06.5 | -07.5 |
| -02.0 | 7 mm | 8 mm | 8.5 mm | 9.5 mm |
| -03.0 | 8 mm | 9 mm | 9.5 mm | 10.5 mm |
| -03.5 | 8.5 mm | 9.5 mm | 10 mm | 11 mm |
| -06.5 | 11.5 mm | 12.5 mm | 13 mm | 14 mm |
| -07.0 | 12 mm | 13 mm | 13.5 mm | 14.5 mm |
| -09.0 | 14 mm | 15 mm | 15.5 mm | 16.5 mm |
| -11.0 | 16 mm | 17 mm | 17.5 mm | 18.5 mm |

## STANDARDS

VITA 47
VITA 57.1 FMC
VITA 57.4 FMC+
VITA 74 VNX
PISMO™2

Visit www.samtec.com/standards for more information.

**Notes:**
IPC-A-610F and
IPC J-STD-001F Class 3 solder joint.

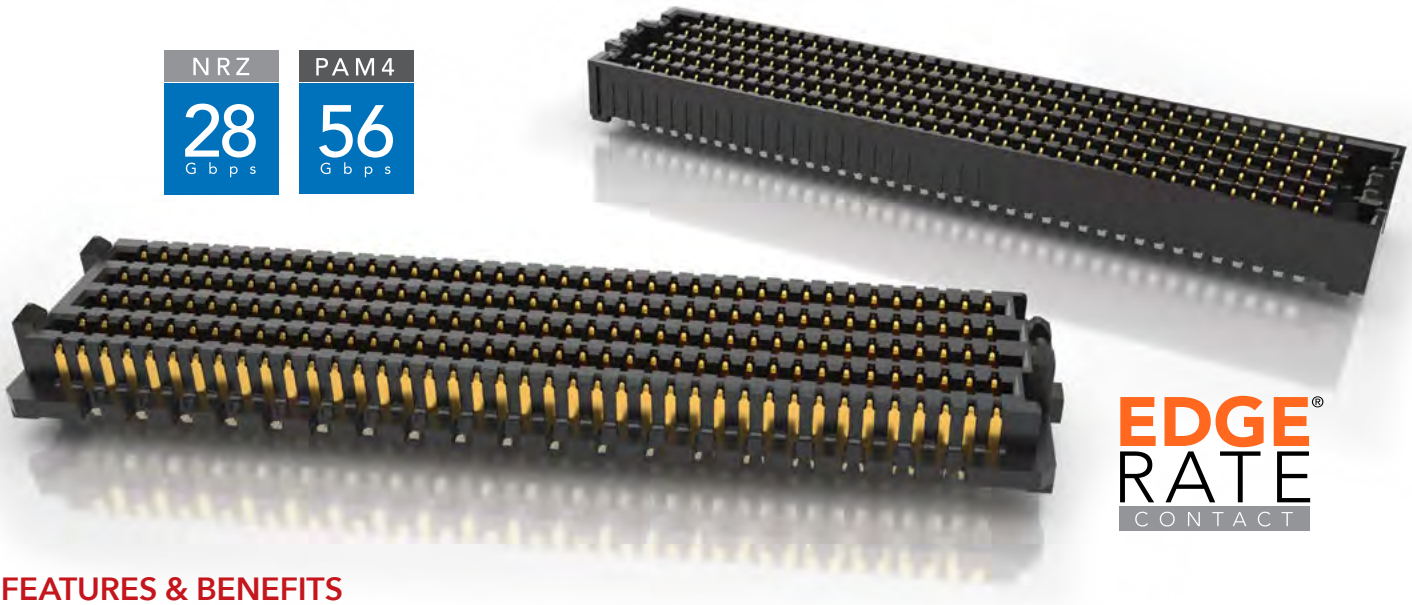
# SEARAY™ .8mm

# ULTRA HIGH-DENSITY, HIGH-SPEED OPEN-PIN-FIELD ARRAYS

(0.80 mm) .0315" PITCH

NRZ 28 Gbps

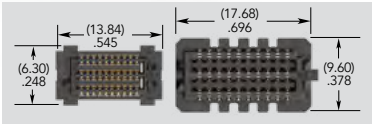
PAM4 56 Gbps



EDGE® RATE CONTACT

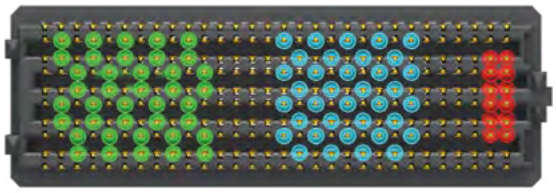
## FEATURES & BENEFITS

- 0.80 mm (.0315") pitch grid
- 50% board space savings versus .050" (1.27 mm) pitch arrays
- Performance up to 28 Gbps NRZ/56 Gbps PAM4
- Rugged Edge Rate® contact system
- Up to 500 I/Os
- 7 mm and 10 mm stack heights
- Solder charge terminations for ease of processing
- Lower insertion/withdrawal forces




0.80 mm pitch vs. 1.27 mm pitch
(60 pins shown)

### MAXIMUM GROUNDING & ROUTING FLEXIBILITY

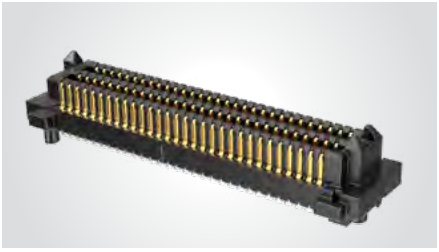


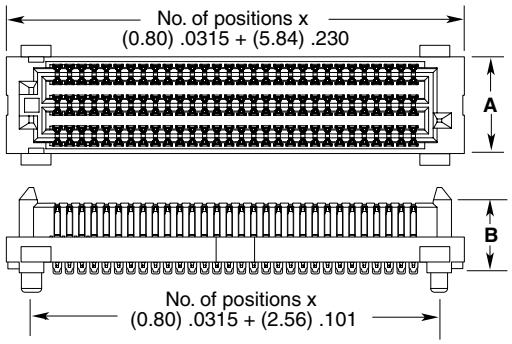

## KEY SPECIFICATIONS

| PITCH | STACK HEIGHTS | TOTAL PINS | INSULATOR MATERIAL | CONTACT MATERIAL | PLATING | CURRENT RATING | LEAD-FREE SOLDERABLE |
|---|---|---|---|---|---|---|---|
| 0.80 mm | 7 mm & 10 mm | up to 500 I/Os | Black LCP | Copper Alloy | Au or Sn over 50 µ" (1.27 µm) Ni | 1.3 A per pin (10 adjacent pins powered) | Yes |

| SERIES | NO. PINS PER ROW | LEAD STYLE | PLATING OPTION | NO. OF ROWS | SOLDER TYPE | OPTION | K |
|---|---|---|---|---|---|---|---|
| **A-SEAM8** Terminal<br>**A-SEAF8** Socket | **–10, –20, –30, –40, –50** | **–S02.0** = 2 mm Body Height (A-SEAM8 only)<br>**–S05.0** = 5 mm Body Height (A-SEAM8 only)<br>**–05.0** = 5 mm Body Height (A-SEAF8 only) | **–S** = 30 µ" (0.76 µm) Gold on contact area, Matte Tin on solder tail | **–04**<br>**–06**<br>**–08** | **–2** = Lead-Free Solder Crimp | **–GP** = =Guide Post (A-SEAM8 only) | **–K** = Polyimide film Pick & Place Pad |

## A-SEAM8
**Board Mates:**
A-SEAF8






| NO. OF ROWS | A |
|---|---|
| –04 | (4.30) .169 |
| –06 | (6.30) .248 |
| –08 | (8.30) .327 |

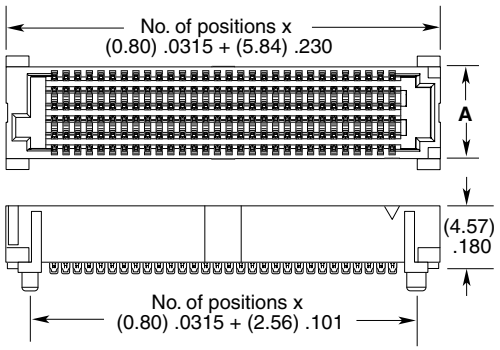
| LEAD STYLE | B |
|---|---|
| -S02.0 | (4.54) .179 |
| -S05.0 | (7.54) .297 |

**MATED HEIGHTS***

| A-SEAF8 LEAD STYLE | A-SEAM8 LEAD STYLE | |
|---|---|---|
| | -S02.0 | -S05.0 |
| -05.0 | (7.00) .276 | (10.00) .394 |

*Processing conditions will affect mated height.

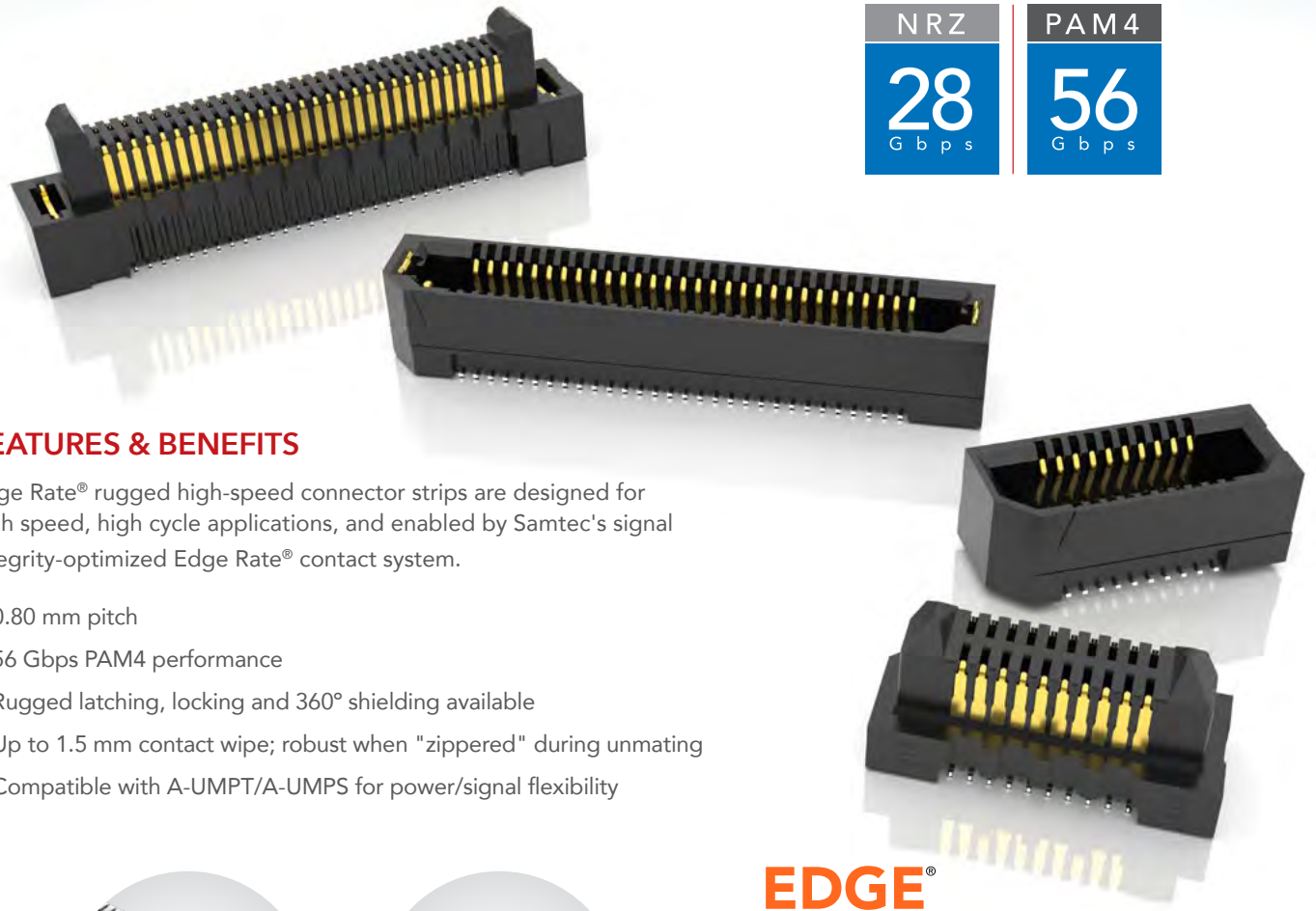
## A-SEAF8
**Board Mates:**
A-SEAM8



EDGE® RATE SYSTEM

# RUGGED HIGH-SPEED STRIPS

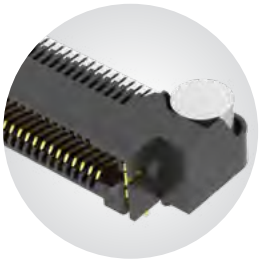
NRZ 28 Gbps | PAM4 56 Gbps



## FEATURES & BENEFITS

Edge Rate® rugged high-speed connector strips are designed for high speed, high cycle applications, and enabled by Samtec's signal integrity-optimized Edge Rate® contact system.

- 0.80 mm pitch
- 56 Gbps PAM4 performance
- Rugged latching, locking and 360° shielding available
- Up to 1.5 mm contact wipe; robust when "zippered" during unmating
- Compatible with A-UMPT/A-UMPS for power/signal flexibility



Contact Automotive group at autosalesgroup@samtec.com for information about Edge Rate® right-angle products.

EDGE® RATE CONTACT

Signal integrity-optimized Edge Rate® contact system reduces broadside coupling

## KEY SPECIFICATIONS

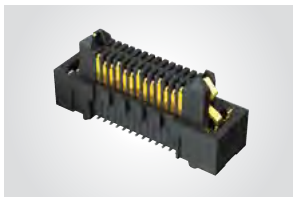
| SERIES | PITCH | STACK HEIGHTS | TOTAL PINS / PAIRS | INSULATOR MATERIAL | TERMINAL MATERIAL | PLATING | OPERATING TEMP RANGE | LEAD-FREE SOLDERABLE |
|---|---|---|---|---|---|---|---|---|
| A-ERM8 / A-ERF8 | 0.80 mm | 7-18 mm | 10-200 | Black LCP | Phosphor Bronze or BeCu (A-ERM8), BeCu (A-ERF8) | Au or Sn over 50 µ" (1.27 µm) Ni | -55 °C to +125 °C | Yes |

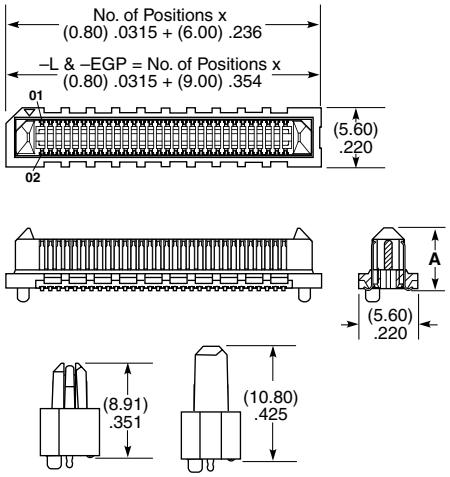
## (0.80 mm) .0315" PITCH • RUGGED HIGH-SPEED HEADERS & SOCKETS

| TYPE | POSITIONS PER ROW | LEAD STYLE | PLATING OPTION | DV | OPTIONS | TR |
|---|---|---|---|---|---|---|
| **A-ERM8** = Header<br>**A-ERF8** = Socket | **–005, –010, –011, –013, –020, –025, –030, –035, –040, –049, –050, –060, –070, –075, –100**<br>(100 Position Only Available with A-ERM8–09.0 & A-ERF8–05.0 Lead Styles; –L or –EGP not available) | Specify LEAD STYLE from Chart | **–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail<br>**–S** = 30 µ" (0.76 µm) Gold on contact, Matte Tin on tail | | **–DS** = Differential Pair (A-ERM8 –05.0 Lead Style with –010, –013, –025, –049 Positions only)<br>**–L** = Latching (A-ERM8–05.0 and –09.0 Lead Styles only and –EGP Option not available) (A-ERF8–05.0 Lead Style only and –L to –EGP Option not available)<br>**–EGP** = Extended Guide Post (A-ERM8–05.0 and A-ERF8–07.0 Lead Style Only and –L Option not available)<br>**–DSP** = Differential Pair with Extended Guide Post (A-ERM8 –05.0 Lead Style with –013 and –025 Positions only)<br>**–K** = Polyimide Film Pick & Place Pad (–02.0 Lead Style not available) | **–TR** = Tape & Reel |

EDGE® RATE SYSTEM

**A-ERM8**
**Board Mates:**
A-ERF8

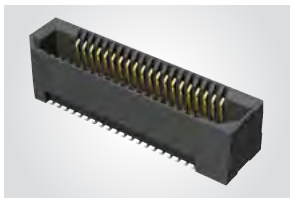


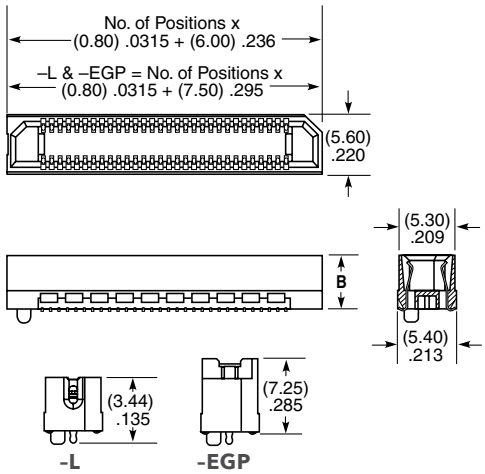



| LEAD STYLE | A (A-ERM8) | B (A-ERF8) |
|---|---|---|
| –02.0 | (5.97) .235 | N/A |
| –05.0 | (8.91) .351 | (5.10) .200 |
| –07.0 | N/A | (7.00) .276 |
| –08.0 | (11.91) .469 | N/A |
| -09.0 | (12.91) .508 | (9.00) .354 |

EDGE® RATE SYSTEM

**A-ERF8**
**Board Mates:**
A-ERM8






| MATED HEIGHT* | | | |
|---|---|---|---|
| A-ERM8 LEAD STYLE | A-ERF8 LEAD STYLE | | |
| | –05.0 | –07.0 | –09.0 |
| –02.0 | (7.00) .276 | (9.00) .354 | (11.00) .433 |
| –05.0 | (10.00) .394 | (12.00) .472 | (14.00) .551 |
| –08.0 | (13.00) .512 | (15.00) .591 | (17.00) .669 |
| –09.0 | (14.00) .551 | (16.00) .629 | (18.00) .709 |

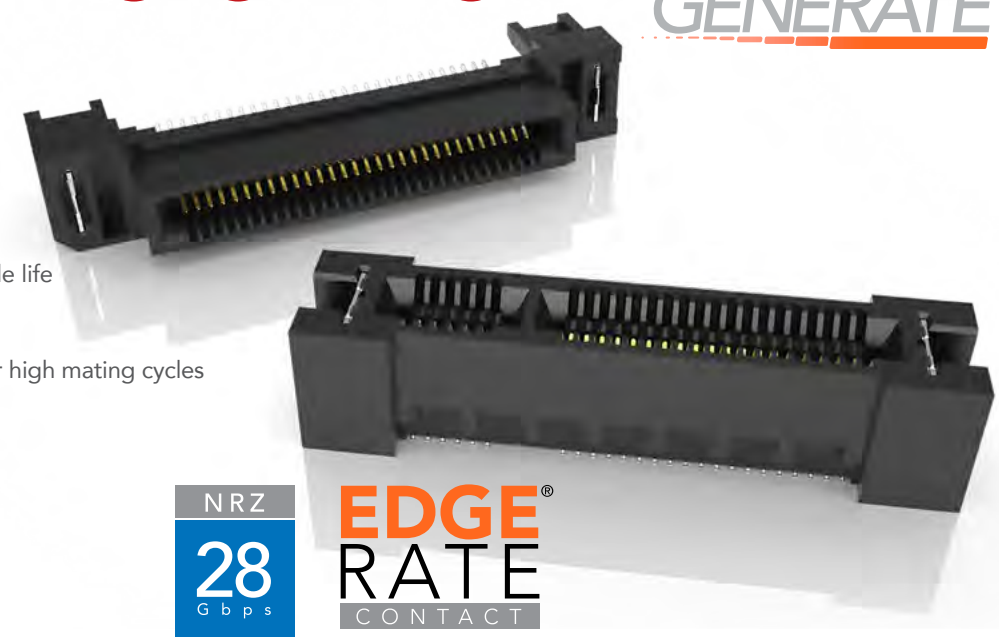
*Processing conditions will affect mated height.

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

# HIGH-SPEED EDGE CARD SYSTEMS

## 0.80 mm PITCH

GENERATE™



## FEATURES & BENEFITS

- 28 Gbps NRZ performance
- PCI Express® 3.0 & 4.0 Capable
- Edge Rate® contacts optimized for signal integrity performance and cycle life
- Up to 200 positions available
- Extended Life Product™ (E.L.P.™) for high mating cycles

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

NRZ 28 Gbps

EDGE® RATE CONTACT

## KEY SPECIFICATIONS

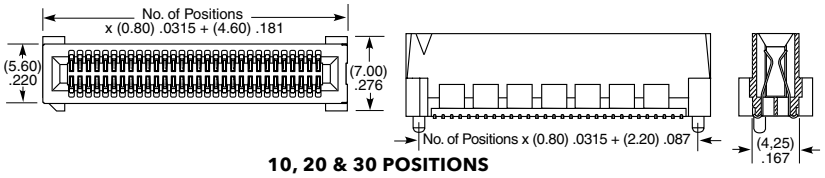
| SERIES | PITCH | TOTAL POSITIONS | INSULATOR MATERIAL | CONTACT MATERIAL | OPERATING TEMP RANGE | CURRENT RATING | VOLTAGE RATING | LEAD-FREE SOLDERABLE |
|---|---|---|---|---|---|---|---|---|
| A-HSEC8 | 0.80 mm | 18-200 | Black LCP | BeCu | -55 °C to +125 °C | 2.8 A (2 pins) | 240 VAC | Yes |

## (0.80 mm) .0315" PITCH • VERTICAL EDGE CARD SOCKET

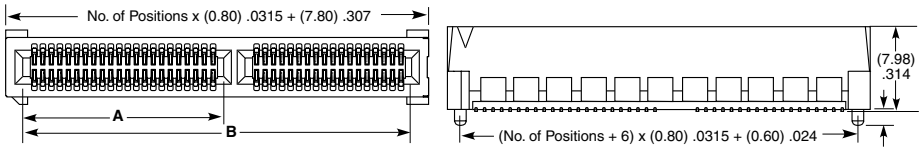
### A-HSEC8-DV

**Card Mates:**
(1.60 mm) .062" card
(2.36 mm) .093" card

| A-HSEC8 | 1 | POSITIONS PER ROW | CARD THICKNESS | PLATING OPTION | DV | A | OTHER OPTIONS | TR |
|---|---|---|---|---|---|---|---|---|
| | | 10, 20, 30, 40, 50, 60, 70, 80, 100 | –01 = (1.60 mm) .062" thick card<br>–03 = (2.36 mm) .093" thick card | –L = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on tail | | | –K = Polyimide Pick & Place Pad<br>–BL = Board Locks (–01 card only) Weld tab standard | –TR = Tape & Reel (10 - 70 only) |




**10, 20 & 30 POSITIONS**




**40 THRU 100 POSITIONS**

| POSITIONS PER ROW | A | B |
|---|---|---|
| 40 | (18.90) .744 | (36.60) 1.441 |
| 50 | (22.90) .902 | (44.60) 1.756 |
| 60 | (26.90) 1.059 | (52.60) 2.071 |
| 70† | (26.90) 1.059 | (60.60) 2.386 |
| 80† | (26.90) 1.059 | (68.60) 2.701 |
| 100† | (26.90) 1.059 | (84.60) 3.331 |

Positions where no dimensions are given do not have keying feature.
† Available with -01 Card Only

**Note:**
Some sizes, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# (0.80 mm) .0315" PITCH • RIGHT-ANGLE & POWER COMBO SOCKET

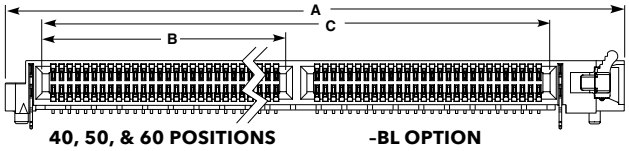
| A-HSEC8 | – | 1 | POSITIONS PER ROW | – | CARD THICKNESS | – | PLATING OPTION | – | RA | – | OTHER OPTIONS | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 09, 10, 13, 20, 25, 30, 40, 49, 50, 60 | | –01 = (1.60 mm) .062" thick card | | –L = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on tail | | | | –BL = Board Locks (09, 13, 25, 49, 40, 50, 60 only) | | –TR = Tape & Reel |

EDGE® RATE CONTACT

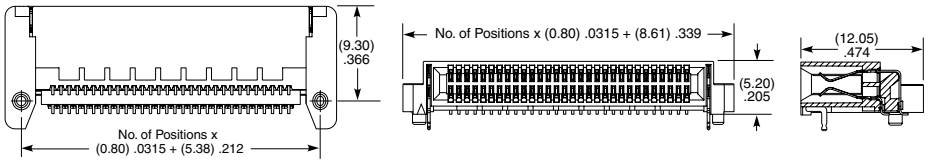
## A-HSEC8-RA

**Card Mates:**
(1.60 mm)
.062" card

| POSITIONS PER ROW | A | B | C |
|---|---|---|---|
| 40 | (43.80) 1.724 | (18.90) .744 | (36.60) 1.441 |
| 50 | (51.80) 2.039 | (22.90) .902 | (44.60) 1.756 |
| 60 | (59.80) 2.354 | (26.90) 1.059 | (52.60) 2.071 |
| 40-BL | (51.30) 2.020 | (18.90) .744 | (36.60) 1.441 |
| 50-BL | (59.30) 2.335 | (22.90) .902 | (44.60) 1.756 |
| 60-BL | (67.30) 2.650 | (26.90) 1.059 | (52.60) 2.071 |




**40, 50, & 60 POSITIONS** **-BL OPTION**




**10, 20 & 30 POSITIONS**

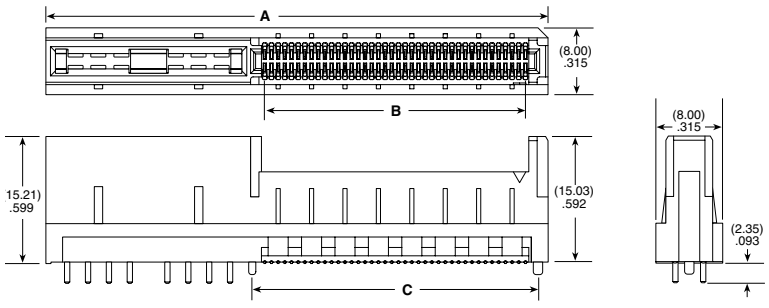
| A-HSEC8 | – | 1 | SIGNAL POSITIONS | – | CARD THICKNESS | – | PLATING OPTION | – | PV | – | POWER POSITIONS | – | POWER TAIL | – | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 20, 30, 40 (Signal positions per row) | | –01 = (1.60 mm) .062" thick card | | –L = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on tail | | | | –2, –4 (Total, 2 per power bank) | | –1 = Use with (1.60 mm) .062" Thick PCB | | –WT = Weld Tab |

EDGE® RATE CONTACT

## A-HSEC8-PV

**Card Mates:**
(1.60 mm)
.062" card

| SIGNAL POSITIONS | POWER POSITIONS | | | | | |
|---|---|---|---|---|---|---|
| | A (–2) | B (–2) | C (–2) | A (–4) | B (–4) | C (–4) |
| 20 | (32.10) 1.264 | (15.20) .598 | (18.20) .717 | (44.10) 1.736 | (15.20) .598 | (18.20) .717 |
| 30 | (40.10) 1.579 | (23.20) .913 | (26.20) 1.031 | (52.10) 2.051 | (23.20) .913 | (26.20) 1.031 |
| 40 | (48.10) 1.894 | (31.20) 1.228 | (34.20) 1.346 | (60.10) 2.366 | (31.20) 1.228 | (34.20) 1.346 |

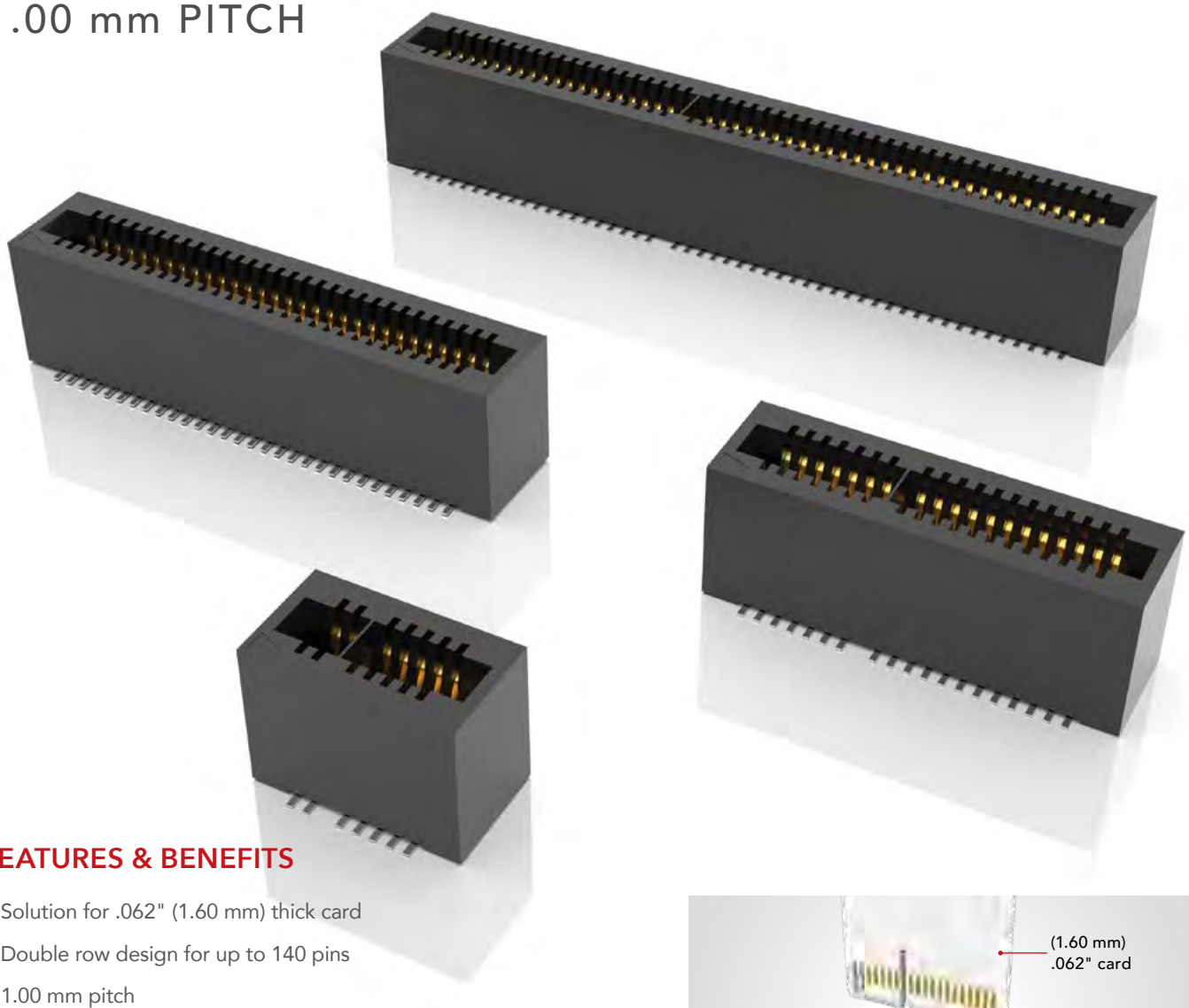



**Note:**
Some sizes, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

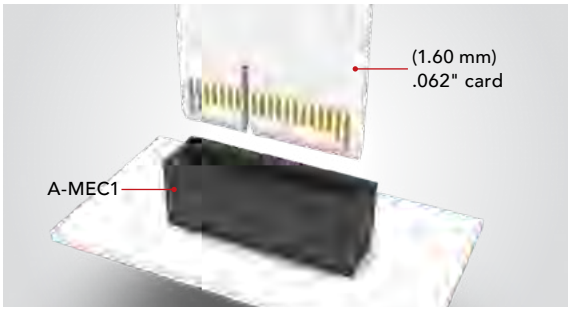
# MICRO EDGE CARD SYSTEM

## 1.00 mm PITCH



## FEATURES & BENEFITS

- Solution for .062" (1.60 mm) thick card
- Double row design for up to 140 pins
- 1.00 mm pitch
- Vertical through-hole orientation
- Non polarization option available
- Contact **autosalesgroup@samtec.com**, for information about right-angle or edge mount options.




(1.60 mm) .062" card mating into A-MEC1 (1.00 mm) .0394"

## KEY SPECIFICATIONS

| SERIES | PITCH | TOTAL POSITIONS | INSULATOR MATERIAL | CONTACT MATERIAL | OPERATING TEMP RANGE | CURRENT RATING | VOLTAGE RATING | LEAD-FREE SOLDERABLE |
|---|---|---|---|---|---|---|---|---|
| A-MEC1 | 1.00 mm | 10-140 | Black LCP | BeCu | -55 °C to +125 °C | 2.2 A (2 pins) | 250 VAC | Yes |

# (1.00 mm) .0394" PITCH • MINI EDGE CARD SOCKET

| A-MEC1 | - | 1 | POSITIONS PER ROW | - | 02 | - | PLATING OPTION | - | D | - | NP | - | OTHER OPTIONS | - | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**POSITIONS PER ROW**
**05, 08, 10, 20, 30, 40, 50, 60, 70**

**PLATING OPTION**
**–F**
= Gold flash on contact, Matte Tin on tail

**–L**
= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail

**NP**
Leave blank for polarization

**–NP**
=No Polarization (05, 08, 20 & 30 positions only)

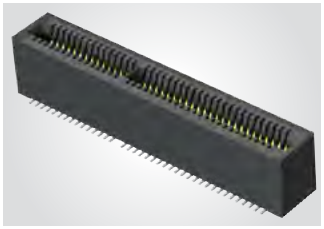
**OTHER OPTIONS**
**–A**
= Alignment Pin plastic at Samtec discretion

**–K**
= (7.87 mm) .310" DIA Polyimide film Pick & Place Pad

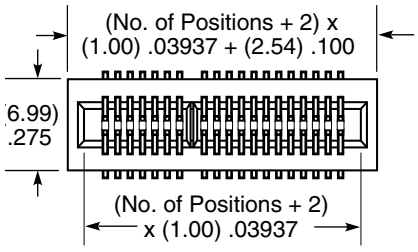
**TR**
**–TR**
=Tape & Reel (05-60 only)

## A-MEC1

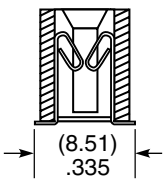
**Card Mates:**
(1.60 mm) .062" thick card

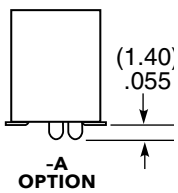


| POSITIONS PER ROW | POLARIZED POSITIONS (No Contact) |
|---|---|
| 05 | 3, 4 |
| 08 | 5, 6 |
| 10 | 13, 14 |
| 20 | 15, 16 |
| 30 | 21, 22 |
| 40 | 31, 32 |
| 50 | 41, 42 |
| 60 | 31, 32, 63, 64 |
| 70 | 53, 54, 115, 116 |







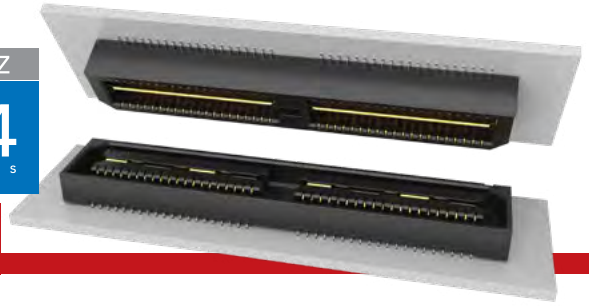

**Note:**
Some sizes, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

NRZ 14 Gbps



## (0.80 mm) .0315" PITCH • A-QTE/A-QSE SERIES

**A-QTE**
**Board Mates:**
A-QSE

**A-QSE**
**Board Mates:**
A-QTE

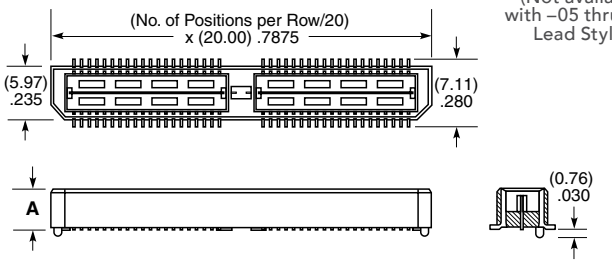
QSTRIP®

| A-QTE | – | PINS PER ROW NO. OF PAIRS | – | LEAD STYLE | – | PLATING OPTION | – | TYPE | – | A | – | OTHER OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –020, –040, –060 (40 total pins per bank) | | Specify LEAD STYLE from Chart | | –F = Gold flash on contact, Matte Tin on tail<br>–L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail<br>–C = 50 µ" (1.27 mm) Electro-Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing) | | –D = Single-Ended | | | | –GP = Guide Post (–020 only)<br>–K = (7.00 mm) .275" DIA Polyimide Film Pick & Place Pad<br>–FL = Friction Locks (–01 & –02 Lead Style only) (Not available with –GP)<br>–TR = Tape & Reel (Not available with –05 thru –08 Lead Style) |

## SPECIFICATIONS

**Insulator Material:**
Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating:**
**Contact:**
2 A per pin (2 pins powered)
**Ground Plane:**
23 A per ground plane
(1 ground plane powered)
**Operating Temp Range:**
-55 °C to +125 °C
**Voltage Rating:**
225 VAC when mated
& 5 mm Stack Height
**Max Cycles:**
100

| A-QTE LEAD STYLE | A | HEIGHT WITH A-QSE |
|---|---|---|
| –01 | (4.27) .168 | (5.00) .197 |
| –02 | (7.26) .286 | (8.00) .315 |
| –03 | (10.27) .404 | (11.00) .433 |
| –04 | (15.25) .600 | (16.00) .630 |
| –05 | (18.26) .718 | (19.00) .748 |
| –09 | (13.26) .522 | (14.00) .551 |
| –10 | (14.24) .561 | (15.00) .590 |

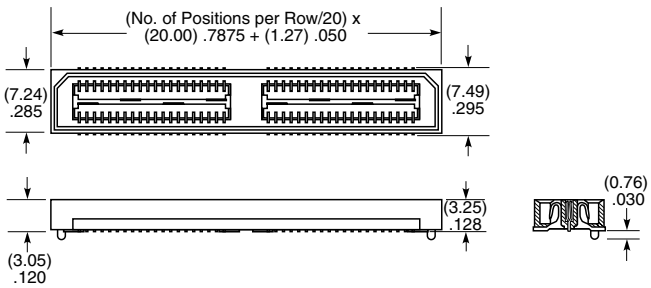



## PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max
(020-060)
**Board Stacking:**
For applications requiring more than two connectors contact ipg@samtec.com

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

| A-QSE | – | PINS PER ROW NO. OF PAIRS | – | 01 | – | PLATING OPTION | – | TYPE | – | A | – | OTHER OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –020, –040, –060 (40 total pins per bank) | | | | –F = Gold flash on contact, Matte Tin on tail<br>–L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail<br>–C = 50 µ" (1.27 mm) Electro-Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing) | | –D = Single-Ended | | | | –GP = Guide Post (–020 only)<br>–K = (8.25 mm) .325" DIA Polyimide Film Pick & Place Pad<br>–FL = Friction Locks (Not available with –GP)<br>–TR = Tape & Reel |




**Note:**
Some lengths, styles and options are non-standard, non-returnable.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

NRZ 28 Gbps

## (0.80 mm) .0315" PITCH • A-QRM8/A-QRF8 SERIES

**A-QRM8**
**Board Mates:**
A-QRF8

**A-QRF8**
**Board Mates:**
A-QRM8

QRATE®

### SPECIFICATIONS

**Insulator Material:**
Black LCP
**A-QRM8 Terminal Material:**
Phosphor Bronze
**A-QRF8 Contact Material:**
BeCu
**Ground Plane Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating:**
**Contact:**
2.2 A per pin (2 pins powered)
**Ground:**
8.5 A per ground plane
(1 ground plane powered)
**Operating Temp Range:**
-55 °C to +125 °C
**Voltage Rating:**
215 VAC
**Max Cycles:**
100

### A-QRM8 – PINS PER ROW NO. OF PAIRS – LEAD STYLE – PLATING OPTION – TYPE – A – OTHER OPTIONS

**–026, –052, –078**
(52 total pins per bank = –D)

**–018, –036, –054**
(18 pairs per bank = –D–DP)

**–02.0**
= 2 mm Body Height (N/A –054 & –078 Positions)

**–05.0**
= 5 mm Body Height

**–07.0**
= 7 mm Body Height

**–L**
= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail

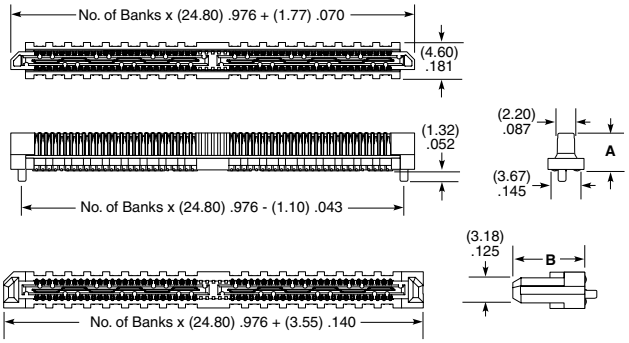
**–D**
= Single-Ended

**–D-DP**
= Differential Pair

**–GP**
= Guide Post

**–K**
= (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad

**–TR**
= Tape & Reel (–018, –026, –036, –052 only



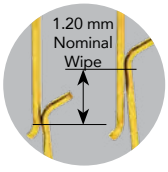

| LEAD STYLE | A | B |
|---|---|---|
| –02 | (4.81) .189 | (6.12) .241 |
| –05 | (7.81) .307 | (9.12) .359 |
| –07 | (9.78) .385 | (11.12) .438 |

**-GP OPTION**

### PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max
(018-026)
0.15 mm) .006" max
(036-078)*
*(.004" stencil solution may be available; contact ipg@samtec.com)
**Board Stacking:**
For applications requiring more than two connectors contact ipg@samtec.com

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES




**Note:**
Some lengths, styles and options are non-standard, non-returnable.

### A-QRF8 – PINS PER ROW NO. OF PAIRS – LEAD STYLE – PLATING OPTION – TYPE – A – OTHER OPTIONS

**–026, –052, –078**
(52 total pins per bank = –D)

**–018, –036, –054**
(18 pairs per bank = –D–DP)

**–05.0**
= 5 mm Body Height

**–07.0**
= 7 mm Body Height

**–L**
= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail

**–D**
= Single-Ended

**–D-DP**
= Differential Pair

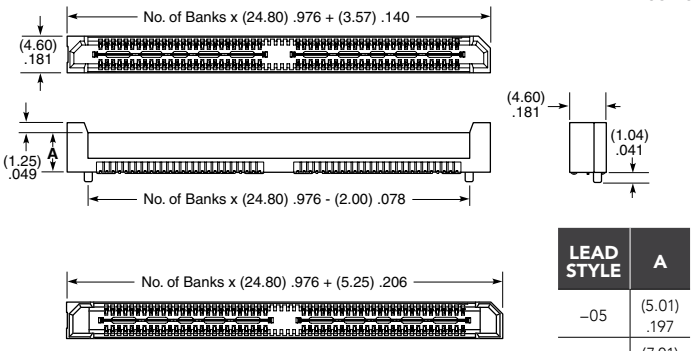
**–GP**
= Guide Post

**–K**
= (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad

**–TR**
= Tape & Reel (–018, –026, –036, –052 only)

| MATED HEIGHT* | | | |
|---|---|---|---|
| A-QRF8 LEAD STYLE | A-QRM8 LEAD STYLE | | |
| | -02.0 | -05.0 | -07.0 |
| –05 | (7.00) .276 | (10.00) .394 | (12.00) .472 |
| –07 | (9.00) .354 | (12.00) .472 | (14.00) .551 |

*Processing conditions will affect mated height. See SO Series for board space tolerances.




| LEAD STYLE | A |
|---|---|
| –05 | (5.01) .197 |
| –07 | (7.01) .276 |

**-GP OPTION**

Due to technical progress, all designs, specifications and components are subject to change without notice.

RAZOR™ BEAM SYSTEM

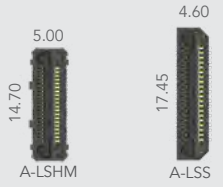
# FINE PITCH SELF MATING CONNECTORS

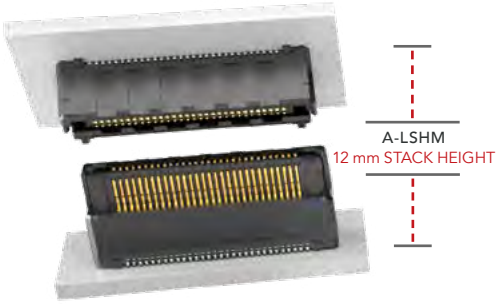
## (0.50 mm) .0197" or (0.635 mm) .025" PITCHES

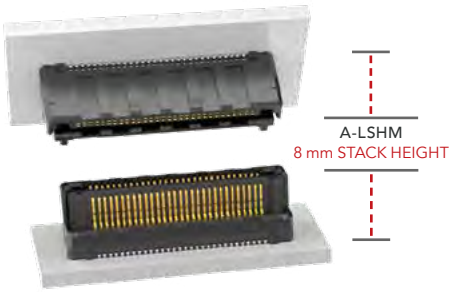
### FEATURES & BENEFITS

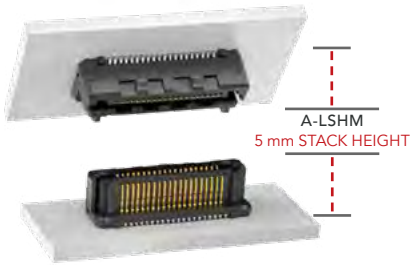
- Ten stack height options from 5.00 mm to 12.00 mm
- 0.50 mm or 0.635 mm pitches
- Audible click when mated
- Mating and unmating forces approximately 4-6x greater than typical micro pitch connectors
- Self-mating system reduces inventory cost

### SLIM BODY DESIGNS
(40 total positions each)




### KEY SPECIFICATIONS

| INSULATOR MATERIAL | CONTACT MATERIAL | PLATING | OPERATING TEMP RANGE | CURRENT RATING | SMT COPLANARITY | LEAD-FREE SOLDERABLE |
|---|---|---|---|---|---|---|
| Black LCP | Phosophor Bronze | Au or Sn over 50 µ" (1.27 µm) Ni | -55 °C to +125 °C | A-LSHM: 2.0 A per pin<br>A-LSS: 1.7 A per pin | (0.10 mm) .004" max | Yes |

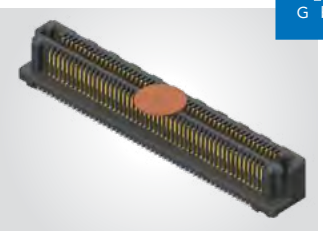
## (0.50 mm) .0197" PITCH • RUGGED HERMAPHRODITIC CONNECTORS

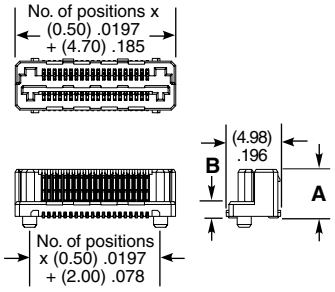
| A-LSHM | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | TAIL OPTION | – | A | – | SHIELD OPTION | – | K | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 05, 10, 20, 30, 40, 50 | | Specify LEAD STYLE from chart | | –L =10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –DV = Vertical | | | | –N = Without Shield | | –K = (3.50 mm) .138" DIA Polyimide film Pick & Place Pad | | –TR = Tape & Reel |

RAZOR™ BEAM SYSTEM

14 Gbps

**A-LSHM**
**Board Mates:**
A-LSHM






| LEAD STYLE (STANDARD) | A | B |
|---|---|---|
| –02.5 | (3.95) .156 | (1.00) .039 |
| –03.0 | (4.45) .175 | (1.50) .059 |
| –04.0 | (5.45) .215 | (2.50) .098 |
| –06.0 | (7.45) .293 | (4.50) .177 |

| LEAD STYLE | MATED HEIGHT * |
|---|---|
| -02.5 & -02.5 | (5.00) .196 |
| -02.5 & -03.0 | (5.50) .217 |
| -03.0 & -03.0 | (6.00) .236 |
| -02.5 & -04.0 | (6.50) .256 |
| -03.0 & -04.0 | (7.00) .276 |
| -04.0 & -04.0 | (8.00) .315 |
| -02.5 & -06.0 | (8.50) .335 |
| -03.0 & -06.0 | (9.00) .354 |
| -04.0 & -06.0 | (10.00) .394 |
| -06.0 & -06.0 | (12.00) .472 |

*Processing conditions will affect mated height.

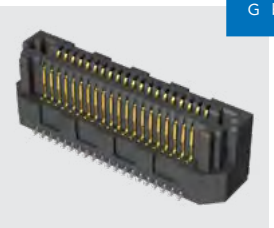
## (0.635 mm) .025" PITCH • RUGGED HERMAPHRODITIC CONNECTORS

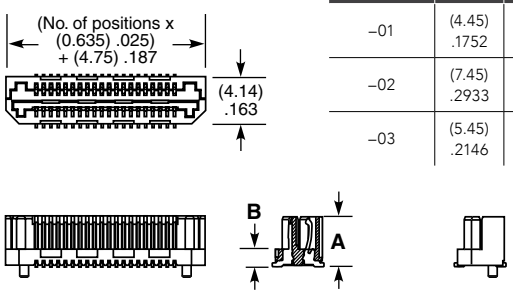
| A-LSS | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | DV | – | A | – | K | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10, 20, 30, 40, 50 | | Specify LEAD STYLE from chart | | –L =10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | | | –K = (3.50 mm) .138" DIA Polyimide film Pick & Place Pad | | –TR = Tape & Reel |

RAZOR™ BEAM SYSTEM

25 Gbps

**A-LSS**
**Board Mates:**
A-LSS






| LEAD STYLE | A | B |
|---|---|---|
| –01 | (4.45) .1752 | (1.59) .0628 |
| –02 | (7.45) .2933 | (4.59) .1808 |
| –03 | (5.45) .2146 | (2.59) .1021 |

| LEAD STYLE | MATED HEIGHT * |
|---|---|
| -01 & -01 | (6.00) .236 |
| -01 & -03 | (7.00) .276 |
| -03 & -03 | (8.00) .315 |
| -01 & -02 | (9.00) .354 |
| -02 & -03 | (10.00) .394 |
| -02 & -02 | (12.00) .472 |

*Processing conditions will affect mated height.

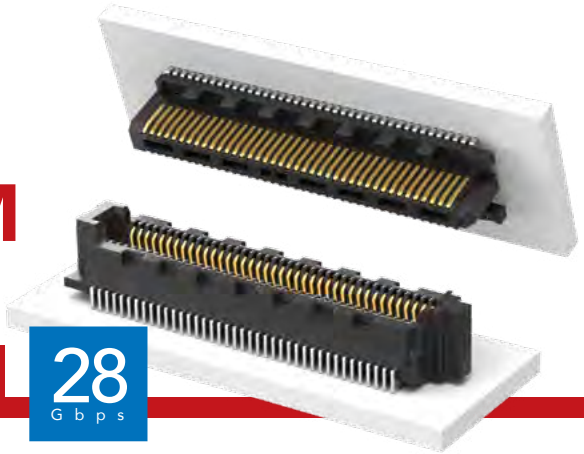
**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# MICRO BLADE & BEAM SOCKET & HEADER

## (0.40 mm) .0158" PITCH • A-SS4/A-ST4 SERIES

28 Gbps



**A-SS4**
**Mates:**
A-ST4

**A-ST4**
**Mates:**
A-SS4

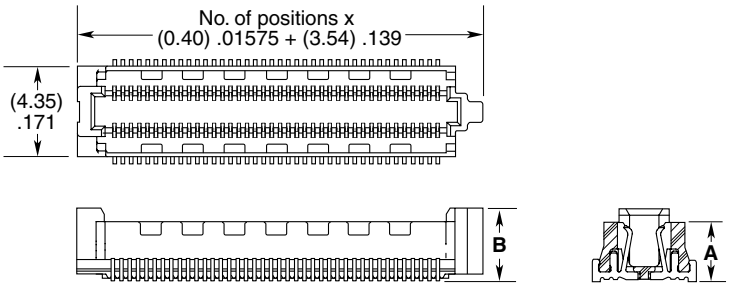
### SPECIFICATIONS

**Insulator Material:**
Black LCP
**Contact Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C
**Current Rating:**
1.6 A per pin
(2 pins powered)

### PROCESSING

**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max

| A-SS4 | – | POSITIONS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | D | – | K | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –10, –20, –30, –40, –50 | | –3.00 = 3.00 mm<br>–3.50 = 3.50 mm | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | (Required in callout)<br>–K = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad | | (Required in callout)<br>–TR = Tape & Reel |



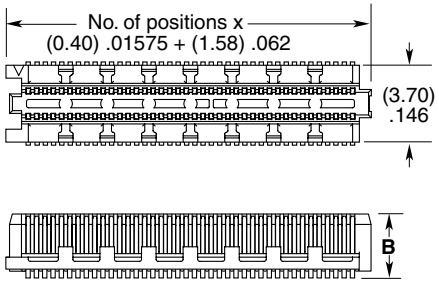

| LEAD STYLE | A | B |
|---|---|---|
| –3.00 | (2.85) .112 | (3.50) .138 |
| –3.50 | (3.35) .132 | (4.00) .157 |

| A-ST4 | – | POSITIONS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | D | – | P | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –10, –20, –30, –40, –50 | | –1.00 = 1.00 mm<br>–1.50 = 1.50 mm<br>–2.50 = 2.50 mm | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | (Required in callout)<br>–P = Pick & Place Pad | | (Required in callout)<br>–TR = Tape & Reel |

### MATED HEIGHT *

| A-ST4 LEAD STYLE | A-SS4 LEAD STYLE | |
|---|---|---|
| | -3.00 | -3.50 |
| -1.00 | (4.00 mm) .157" | (4.50 mm) .177" |
| -1.50 | (4.50 mm) .177" | (5.00 mm) .197" |
| -2.50 | (5.50 mm) .217" | (6.00 mm) .236" |

*Processing conditions will affect mated height.




| LEAD STYLE | A | B |
|---|---|---|
| –1.00 | (1.00) .039 | (3.08) .121 |
| –1.50 | (1.50) .059 | (3.58) .141 |
| –2.50 | (2.50) .098 | (4.58) .180 |

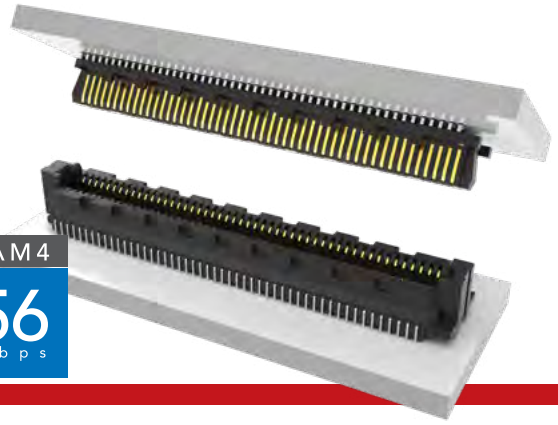
**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

# MICRO BLADE & BEAM SOCKET & HEADER




## (0.50 mm) .0197" PITCH • A-SS5/A-ST5 SERIES

**A-SS5**
**Mates:**
A-ST5

**A-ST5**
**Mates:**
A-SS5

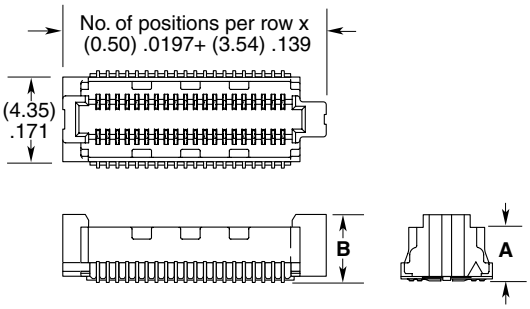
### SPECIFICATIONS

**Insulator Material:**
Black LCP
**Contact Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C
**Current Rating:**
1.6 A per pin
(2 pins powered)

### PROCESSING

**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max

| A-SS5 | NO. OF POSITIONS | LEAD STYLE | PLATING OPTION | D | K | TR |
|---|---|---|---|---|---|---|
| | –10, –15, –20, –30, –40, –50, –60, –70, –80 (Per Row) | –3.00 = 3.00 mm<br>–3.50 = 3.50 mm | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | (Required in callout)<br>–K = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad | (Required in callout)<br>–TR = Tape & Reel |



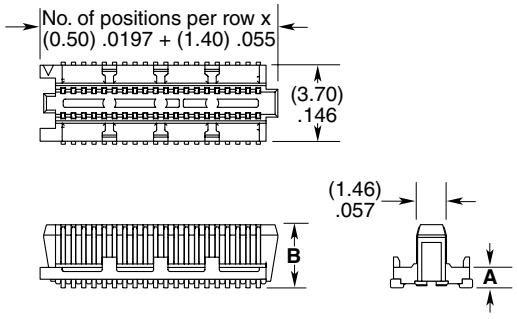

| LEAD STYLE | A | B |
|---|---|---|
| –3.00 | (2.85) .112 | (3.50) .138 |
| –3.50 | (3.35) .132 | (4.00) .157 |

### MATED HEIGHT *

| A-ST5 LEAD STYLE | A-SS5 LEAD STYLE | |
|---|---|---|
| | -3.00 | -3.50 |
| -1.00 | (4.00 mm) .157" | (4.50 mm) .177" |
| -1.50 | (4.50 mm) .177" | (5.00 mm) .197" |

*Processing conditions will affect mated height.

| A-ST5 | NO. OF POSITIONS | LEAD STYLE | PLATING OPTION | D | P | TR |
|---|---|---|---|---|---|---|
| | –10, –15, –20, –30, –40, –50, –60, –70, –80 (Per Row) | –1.00 = 1.00 mm<br>–1.50 = 1.50 mm | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | (Required in callout)<br>–P = Pick & Place Pad | (Required in callout)<br>–TR = Tape & Reel |




| LEAD STYLE | A | B |
|---|---|---|
| –1.00 | (1.00) .039 | (3.08) .121 |
| –1.50 | (1.50) .059 | (3.58) .141 |

### ALSO AVAILABLE

Other lead styles
(MOQ Required)

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

mPOWER®

# ULTRA MICRO POWER SYSTEM

## (2.00 mm) .0787" PITCH

**A-UMPT/A-UMPS** compared to another small form factor power solution

Terminals shown at 4 positions

mPower®

Traditional Power Solutions

## FEATURES & BENEFITS

- Up to 18 A per blade (1 blade powered)
- Design flexibility as a power-only system or a two-piece system for power/signal applications
- Use with Samtec's high-speed connector systems for a unique power/signal system
- Choice of 2 to 10 positions
- 5 mm to 20 mm stack heights available
- Tin or 10 µ" Gold plated power blades; 30 µ" Gold plating available to meet specific regulations
- Right-angle and cable components available

## CREEPAGE & CLEARANCE

| A-UMPT/A-UMPS | |
|---|---|
| CREEPAGE | 2.20 mm |
| CLEARANCE | 1.65 mm |

Selectively loading contacts achieves customer specific creepage and clearance requirements.

## KEY SPECIFICATIONS

| PITCH | STACK HEIGHTS | INSULATOR MATERIAL | CONTACT MATERIAL | PLATING | OPERATING TEMP RANGE | VOLTAGE RATING | LEAD-FREE SOLDERABLE |
|---|---|---|---|---|---|---|---|
| 2.00 mm | 5 to 20 mm | Black LCP | Copper Alloy | Sn or Au over 50 µ" (1.27 µm) Ni | -55 °C to +105 °C with Tin<br>-55 °C to +125 °C with Gold | 460 VAC/ 650 VDC | Yes |

MAX 18 Amps

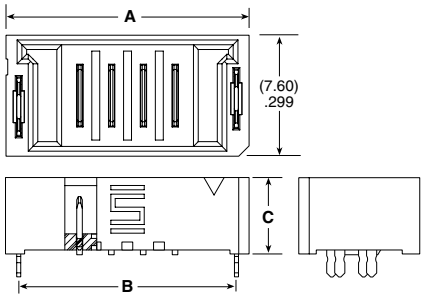
# ULTRA MICRO POWER TERMINAL/SOCKET

| A-UMPT | – | NO. OF POSITIONS | – | LEAD STYLE | – | PLATING OPTION | – | V | – | S | – | WELD TAB | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –02, –03, –04, –05, –06, –07, –08, –09, –10 | | –01.5 = (01.5 mm) .059"<br>–02.5 = (02.5 mm) .098"<br>–06.5 = (06.5 mm) .256"<br>– 07.5 = (07.5 mm) .295"<br>– 12.5 = (12.5 mm) .492" | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail<br>–T = Matte Tin | | | | | | (Leave blank for no weld tab)<br>–W = Weld Tab Through-hole | | –TR = Tape & Reel |

mPOWER®

**A-UMPT**
**Board Mates:**
A-UMPS

**Note:**
Some lengths, styles and options are non-standard, non-returnable.




**A-UMPT-04-01.5-X-V-S-W SHOWN**

| NO. OF POSITIONS | A | B |
|---|---|---|
| –02 | (11.30) .445 | (9.70) .382 |
| –03 | (13.30) .524 | (11.70) .460 |
| –04 | (15.30) .602 | (13.70) .539 |
| –05 | (17.30) .681 | (15.70) .618 |
| –06 | (19.30) .760 | (17.70) .697 |
| –07 | (21.30) .839 | (19.70) .776 |
| –08 | (23.30) .917 | (21.70) .854 |
| –09 | (25.30) .996 | (23.70) .933 |
| –10 | (27.30) 1.075 | (25.70) 1.012 |

| LEAD STYLE | C |
|---|---|
| –01.5 | (4.80) .189 |
| –02.5 | (5.80) .228 |
| –06.5 | (9.55) .376 |
| –07.5 | (10.80) .425 |
| –12.5 | (15.80) .622 |

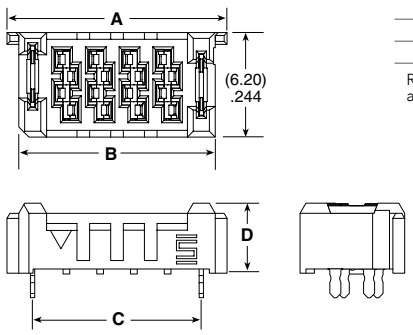
| A-UMPS | – | NO. OF POSITIONS | – | LEAD STYLE | – | PLATING OPTION | – | V | – | S | – | OPTION | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –02, –03, –04, –05, –06, –07, –08, –09, –10 | | –03.5 = (03.5 mm) .138"<br>–05.5 = (05.5 mm) .217"<br>–07.5 = (07.5 mm) .295" | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail<br>–T = Matte Tin | | | | | | –W = Weld Tab Through-hole (Leave blank for no weld tab) | | –TR = Tape & Reel |

mPOWER®

**A-UMPS**
**Board Mates:**
A-UMPT

| LEAD STYLE | D |
|---|---|
| –03.5 | (4.15) .163 |
| –05.5 | (6.15) .242 |
| –07.5 | (8.15) .321 |

**Notes:**
Some lengths, styles and otpons are non-standard, non-returnable




**A-UMPS-04-03.5-X-V-S-W SHOWN**

## A-UMPT/A-UMPS CURRENT RATING (PER CONTACT)

| PINS | –T | –L |
|---|---|---|
| 1 | 18.3 A | 16.2 A |
| 2 | 14.5 A | 14.6 A |
| 3 | 14.2 A | 12.6 A |
| 4 | 12.9 A | 12.3 A |
| 5 | 12.9 A | N/A |
| 10 | N/A | 9.4 A |

Ratings are derated 20% with 30 °C rise to maximum allowable temperature.

| NO. OF POSITIONS | A | B | C |
|---|---|---|---|
| –02 | (9.05) .356 | (7.65) .301 | (6.00) .236 |
| –03 | (11.05) .435 | (9.65) .380 | (8.00) .315 |
| –04 | (13.05) .514 | (11.65) .459 | (10.00) .394 |
| –05 | (15.05) .593 | (13.65) .537 | (12.00) .472 |
| –06 | (17.05) .671 | (15.65) .616 | (14.00) .551 |
| –07 | (19.05) .750 | (17.65) .695 | (16.00) .630 |
| –08 | (21.05) .829 | (19.65) .774 | (18.00) .709 |
| –09 | (23.05) .907 | (21.65) .852 | (20.00) .787 |
| –10 | (25.05) .986 | (23.65) .931 | (22.00) .866 |

Due to technical progress, all designs, specifications and components are subject to change without notice.

TIGER™ EYE SYSTEM

# RUGGED TIGER EYE™ SYSTEMS

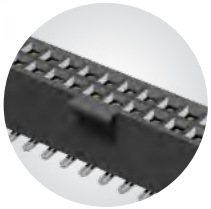
## (1.27 mm) .050" PITCH

MAX 3.2 Amps | 8 Gbps

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

## FEATURES & BENEFITS

- High-Reliability Rugged Tiger Eye™ contact system
- Surface mount & through-hole tails
- Vertical & horizontal orientation
- Up to 8 Gbps of performance
- SET qualified product
- Extended Life Product™ (E.L.P.™) for high mating cycles to 2,500
- Discrete Wire assemblies available. Contact autosalesgroup@samtec.com for other solutions.



Locking for increased unmating force (A-SFML/A-TFML)

TIGER™ EYE CONTACT

- High-Reliability
- High Mating Cycles
- Multi-finger Contact

## KEY SPECIFICATIONS (A-TFM/A-SFM)

| PITCH | STACK HEIGHTS | INSULATOR MATERIAL | CONTACT MATERIAL | PLATING | OPERATING TEMP RANGE | CURRENT RATING | VOLTAGE RATING | MAX CYCLES |
|---|---|---|---|---|---|---|---|---|
| 1.27 mm | 6 to 12 mm | Black LCP | BeCu (A-SFM)<br>Phosphor Bronze (A-TFM) | Au or Sn over 50 µ" (1.27 µm) Ni | -55 °C to +125 °C | 3.2 A per pin (2 pins powered) | 250 VAC | 10,000 with 30 µ" (0.76 µm) Au<br>(Call Samtec for E.L.P.™ plating option) |

Due to technical progress, all designs, specifications and components are subject to change without notice.

## (1.27 mm) .050" PITCH • SMT/THROUGH-HOLE SOCKET

| SERIES | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|

**A-SFM**
= Standard

**A-SFML**
= Locking

TIGER™ EYE SYSTEM

**03, 04, 06, 08**
(A-SFM only)

**05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50**
(Standard sizes)

**–02**
(Surface Mount)
= Tiger Eye™ Contact (BeCu)

**–01, –03**
(Through-hole)
= Tiger Eye™ Contact (BeCu)

**–L**
= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail
(Call Samtec for E.L.P.™ plating option)

**–S**
= Single Row
(A-SFM only)

**–D**
= Double Row

**–SH**
= Single Horizontal
(05 thru 30 positions only)
(A-SFM only)
(Lead style –02 only)

**–DH**
= Double Horizontal
(05 thru 30 positions only)
(A-SFM only)
(Lead style –02 only)

**–A**
= Alignment Pin
(Not available with –DH, –SH)

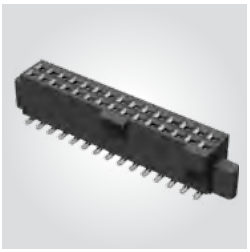
**–K**
= Polyimide film Pick & Place Pad
(Not available with –DH, –SH, –P)
(Lead styles –02, only)

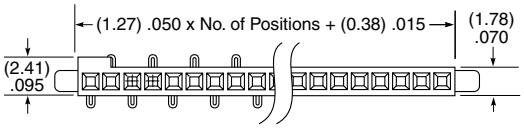
**–P**
= Plastic Pick & Place Pad
(Not available with –DH, –SH, –K)
(Lead styles –02, only)

**–TR**
= Tape & Reel
Specify –TR last;
Required for –DH & –SH.
(Lead styles –02 only)

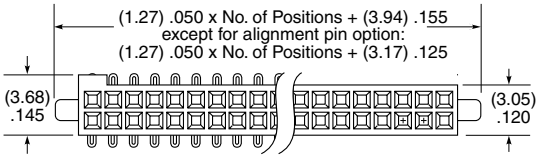
**A-SFM**
**Board Mates:**
A-TFM

**A-SFML**
**Board Mates:**
A-TFML



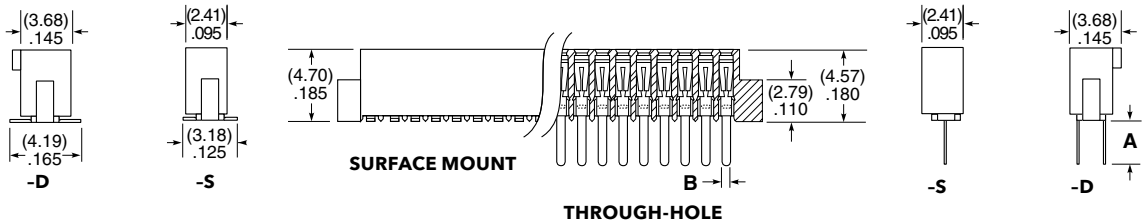


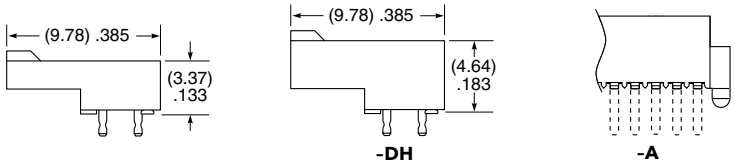
SINGLE ROW



DOUBLE ROW

| LEAD STYLE | A | B |
|---|---|---|
| –01 | (3.05) .120 | (0.51) .020 |
| –03 | (1.91) .075 | (0.41) .016 |




**Note:**
Some lengths, styles and options are non-standard, non-returnable.

# SMT & THROUGH-HOLE TIGER EYE™ HEADER

MAX 3.2 Amps | 8 Gbps

**(1.27 mm) .050" • A-TFM/A-TFML SERIES**

| SERIES | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|

**A-TFM**
= Standard

**A-TFML**
= Locking (–01 & –02 lead style only)

TIGER™ EYE SYSTEM

**03, 04, 06, 08**
(A-TFM –01 & –02 only)

**05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50**
(Standard sizes)

**Specify LEAD STYLE from chart**

**–L**
= 15 µ" (0.38 µm) Gold on post, Matte Tin on tail (Call Samtec for E.L.P.™ plating option)

**–S**
= Single Row (A-TFM only)

**–D**
= Double Row

Specify only –RA

**–RA**
= Right-angle (Lead style –01 only)

Specify only –A, or –WT
Not available with –RA, unless otherwise noted.

**–A**
= Alignment Pin

**–WT**
= Weld Tab (A-TFM lead styles –01 and –02 only) (05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50 positions only)

SMT lead styles only
Specify only –K or –P

**–K**
= Polyimide Film Pick & Place Pad

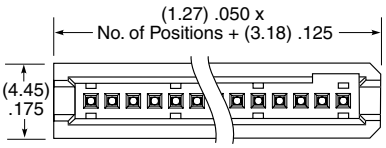
**–P**
= Plastic Pick & Place Pad (5 positions min.) (Not available with 5 position with –WT)

Specify –TR last

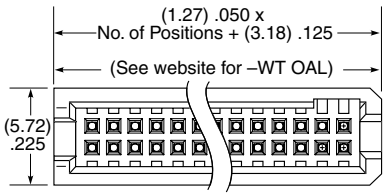
**–TR**
= Tape & Reel

**A-TFM**
**Board Mates:**
A-SFM,A-SFMC

**A-TFML**
**Board Mates:**
A-SFML




**SINGLE ROW**




**DOUBLE ROW**

| MATED HEIGHTS* | |
|---|---|
| LEAD STYLE (SMT) | MATED HEIGHT* |
| A-TFM / A-SFM | |
| -02 / -02 | (6.35) .250 |
| -12 / -02 | (8.13) .320 |
| -22 / -02 | (9.91) .390 |
| -32 / -02 | (11.81) .465 |
| **LEAD STYLE (T/H)** | **MATED HEIGHT*** |
| A-TFM / A-SFM | |
| -01 / -01 | (5.97) .235 |
| -03 / -01 | (5.97) .235 |
| -11 / -01 | (7.75) .305 |
| -13 / -01 | (7.75) .305 |
| -21 / -01 | (9.53) .375 |
| -23 / -01 | (9.53) .375 |
| -31 / -01 | (11.43) .450 |

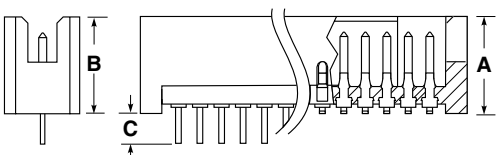
*Processing conditions will affect mated height.

| LEAD STYLE (SMT) | A |
|---|---|
| –02 | (5.72) .225 |
| –12* | (7.49) .295 |
| –22* | (9.27) .365 |
| –32* | (11.18) .440 |

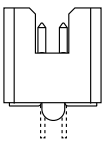
* N/A with 07, -S row option

| LEAD STYLE (T/H) | B | C |
|---|---|---|
| –01 | (5.59) .220 | (1.97) .078 |
| –03* | (5.59) .220 | (2.77) .109 |
| –11* | (7.37) .290 | (1.97) .078 |
| –13* | (7.37) .290 | (2.77) .109 |
| –21* | (9.14) .360 | (1.97) .078 |
| –23* | (9.14) .360 | (2.77) .109 |
| –31* | (11.05) .435 | (1.97) .078 |

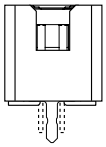
* Not Available with 07 or -S row option



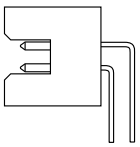

**THROUGH-HOLE** **SURFACE MOUNT**



**-A**



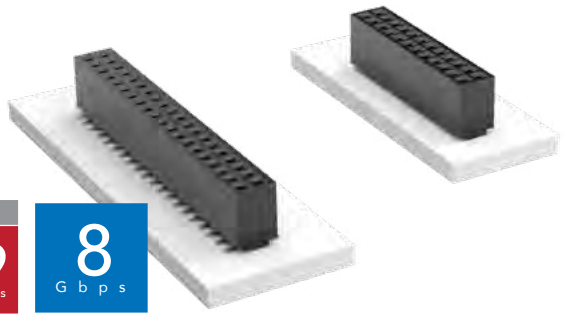
**-WT**



**-RA**

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

# FLEXIBLE PIN COUNT TIGER EYE™ SOCKET



MAX 2.9 Amps

8 Gbps

**(1.27 mm) .050" PITCH • A-SFMC SERIES**

**A-SFMC**
**Board Mates:**
A-TFM

TIGER™ EYE SYSTEM

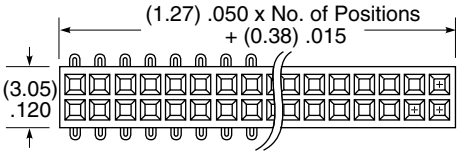
| A-SFMC | - | 1 | NO. PINS PER ROW | - | LEAD STYLE | - | PLATING OPTION | - | D | - | OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 50 | | –01, –03 = Through-hole<br>–02 = Surface Mount | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | –K = (4.00 mm) .157" DIA Polyimide film Pick & Place Pad (4 positions min.)<br>–P = Plastic Pick & Place Pad (5 positions min.)<br>–TR = Tape & Reel |

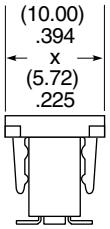
## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
BeCu
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating:**
2.9 A per pin
(2 pins powered)
**Voltage Rating:**
220 VAC/310 VDC
**Operating Temp Range:**
-55 °C to +125 °C
**Insertion Depth:**
(3.05 mm) .120" to
(4.06 mm) .160"
**Normal Force:**
Standard= 132 g (1.29 N) avg.
**Max Cycles:**
10,000 with 30 µ" (0.76 µm) Au

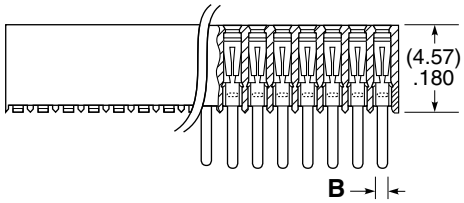
## PROCESSING

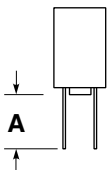
**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (02-26)
(0.15 mm) .006" max (27-50)*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)

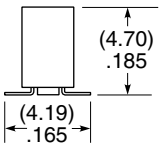



**-P OPTION**




## ALSO AVAILABLE

Other plating
(MOQ Required)

| LEAD STYLE | A | B |
|---|---|---|
| –01 | (3.05) .120 | (0.51) .020 |
| –03 | (1.91) .075 | (0.41) .016 |

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

TIGER™ EYE SYSTEM

# RUGGED TIGER EYE™ SYSTEMS

## (2.00 mm) .0787" PITCH

MAX 3.8 Amps | 8 Gbps

## FEATURES & BENEFITS

- Rugged Tiger Eye™ contact system for high-reliability
- Wide range of stack heights (A-SMM/A-TMM Series)
- Right-angle mating headers available
- Up to 8 Gbps of performance
- Surface mount or through-hole
- Discrete wire assemblies available in 24-30 AWG PVC or Teflon® wire; contact asp@samtec.com for custom solutions

TIGER™ EYE CONTACT

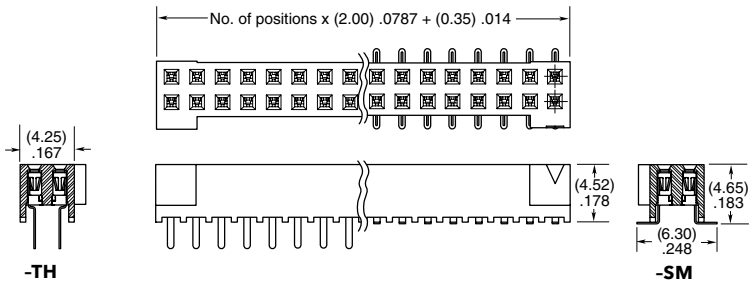
- High-Reliability
- High Mating Cycles
- Multi-finger Contact

## KEY SPECIFICATIONS (A-S2M/A-T2M)

| PITCH | STACK HEIGHTS | TOTAL PINS | INSULATOR MATERIAL | CONTACT MATERIAL | PLATING | OPERATING TEMP RANGE | CURRENT RATING | MAX CYCLES |
|---|---|---|---|---|---|---|---|---|
| 2.00 mm | 6 & 7 mm | 10 - 60 | Black LCP | BeCu (S2M)<br>Phosphor Bronze (T2M) | Au or Sn over<br>50 µ" (1.27 µm) Ni | -55 °C to +125 °C | 3.8 A (A-T2M)<br>2.6 A (A-S2M<br>(2 pins powered) | 100 with 10 µ"<br>(0.25 µm) Au |

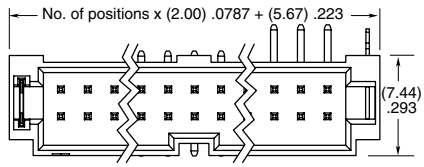
| SERIES | | 1 | NO. OF POSITIONS | | LEAD STYLE | | PLATING OPTION | | D | | OPTIONS | | PACKAGING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A-S2M**<br>Socket<br><br>TIGER™ EYE SYSTEM | | | **05, 07, 10, 15, 20, 25, 30**<br>(Per Row) | | **–01**<br>= Through-hole<br><br>**–02**<br>= Surface Mount | | **–L**<br>= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | **–K**<br>= (5.50 mm) .217" DIA Polyimide film Pick & Place Pad (–02 only) | | Leave blank for tube packaging<br><br>**–TR**<br>= Tape & Reel (–02 only) |

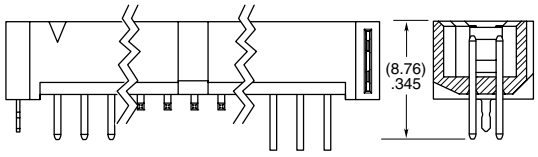
**A-S2M**
**Board Mates:**
A-T2M

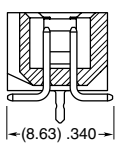


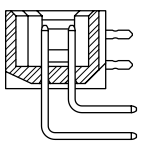

| SERIES | | 1 | NO. OF POSITIONS | | 01 | | PLATING OPTION | | D | | TAIL OPTION | | OTHER OPTIONS | | PACKAGING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A-T2M**<br>Header<br><br>TIGER™ EYE SYSTEM | | | **05, 07, 10, 15, 20, 25, 30**<br>(Per Row) | | | | **–L**<br>= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | **–TH**<br>= Through-hole<br><br>**–RA**<br>= Right-angle<br><br>**–SM**<br>= Surface Mount | | **–WT**<br>= Weld Tab<br><br>**–K**<br>= (7.50 mm) .295" DIA Polyimide film Pick & Place Pad (–SM only) | | Leave blank for tube packaging<br><br>**–TR**<br>= Tape & Reel (–SM only) |

**A-T2M**
**Board Mates:**
A-S2M

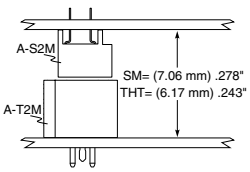



**MATED HEIGHT**

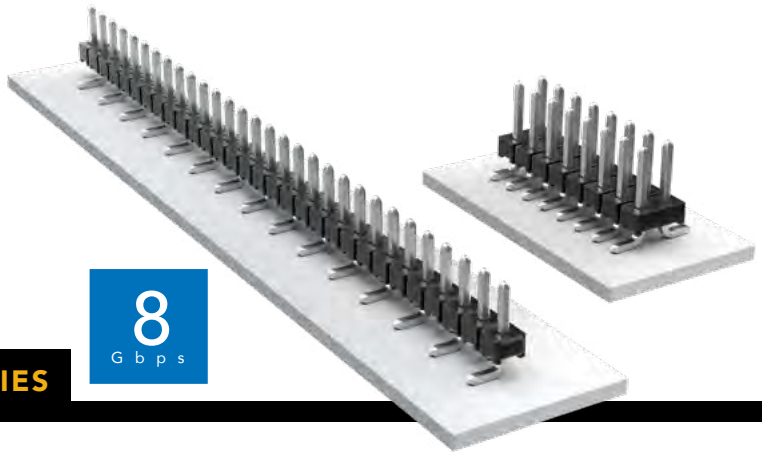



**Note:** Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# LOW-PROFILE SMT HEADER

**(2.00 mm) .0787" PITCH • A-TMM SERIES**




**A-TMM**
**Board Mates:**
A-CLT, A-SQT, A-SQW, A-ESQT, A-SMM, A-MMS

## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**Current Rating:**
3.2 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
**Voltage Rating:**
281 VAC mated with A-SQW;
250 VAC mated with A-SQT

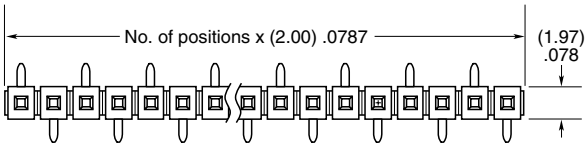
## PROCESSING

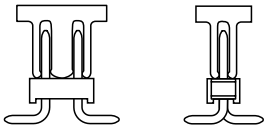
**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)

## ALSO AVAILABLE

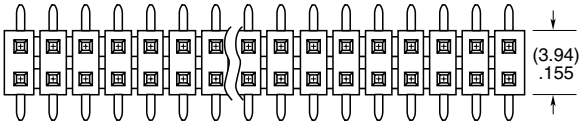
Other plating
(MOQ Required)

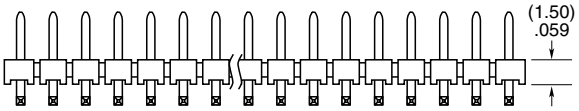
| A-TMM | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | SM | – | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 40 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–T = Matte Tin | | –S = Single Row<br>–D = Double Row | | | | –A = Alignment Pin (Metal or plastic at Samtec's discretion) (5 positions minimum) (–D only)<br>–P = Pick & Place Pad (3 positions minimum)<br>–TR = Tape & Reel (3 thru 36 positions only) |

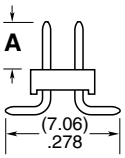


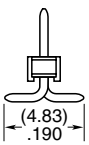
-P




-D




-S

| LEAD STYLE | A | MATES WITH |
|---|---|---|
| –01 | (3.20) .126 | A-SQT, A-SQW, A-ESQT, A-SMM, A-MMS |
| –04 | (1.91) .075 | A-CLT |
| –05 | (1.65) .065 | |
| –06 | (4.27) .168 | A-CLT-BE |

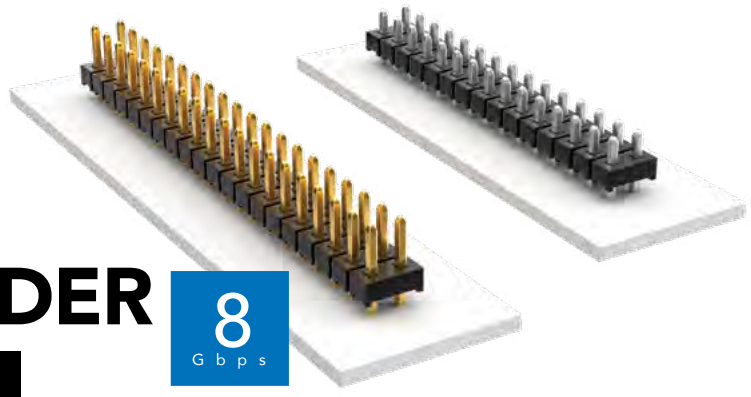
10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED



# THROUGH-HOLE LOW-PROFILE HEADER

8 Gbps

## (2.00 mm) .0787" PITCH • A-TMM SERIES

**A-TMM**
**Board Mates:**
A-CLT, A-SQT, A-SQW, A-ESQT, A-SMM, A-MMS

| A-TMM | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 50 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–T = Matte Tin | | –S = Single Row<br>–D = Double Row | | –RA & –RE = Right-angle (Lead Style –01 only) (2 positions minimum) |

## SPECIFICATIONS

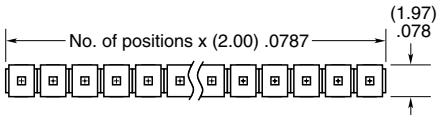
**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**Current Rating (A-SMM/A-TMM):**
3.2 A per row
(2 pins powered)
**Operating Temp Range:**
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
**Voltage Rating:**
281 VAC mated with A-SQW;
250 VAC mated with A-SQT

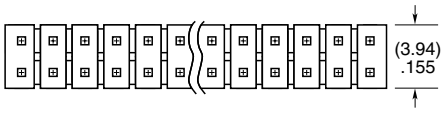
## PROCESSING

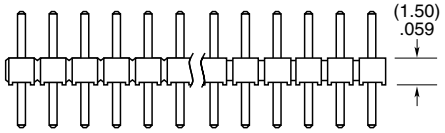
**Lead–Free Solderable:**
Yes

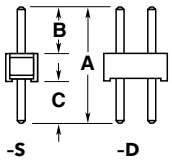
## ALSO AVAILABLE

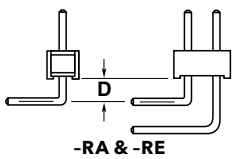
Other plating
(MOQ Required)




| LEAD STYLE | A | B | C |
|---|---|---|---|
| –01 | (8.20) .323 | (3.20) .126 | (3.50) .138 |
| –02 | | (3.70) .146 | (3.00) .118 |
| –03 | | (4.00) .158 | (2.70) .106 |
| –04 | (5.69) .224 | (1.91) .075 | (2.29) .090 |
| –05 | (5.43) .214 | (1.65) .065 | |
| –06 | (9.58) .377 | (3.20) .126 | (4.88) .192 |

| OPTION | D |
|---|---|
| –RA | (1.27) .050 |
| –RE | (3.56) .140 |

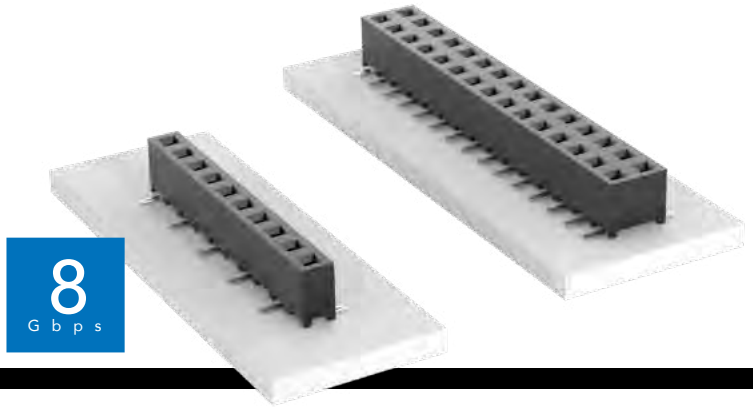
10 YEAR MFG WITH 30 µ" GOLD
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# HIGH RELIABILITY SOCKET STRIPS

**(2.00 mm) .0787" PITCH • A-SMM**




**A-SMM**
**Board Mates:**
A-TMM, A-TMMH,
A-MTMM, A-MMT, A-TW

TIGER™ EYE SYSTEM

| A-SMM | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | OTHER OPTION | – | PACKAGING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 40 | | –01 Through-hole<br>–02 = Surface Mount | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –S = Single Row<br>–D = Double Row | | –P = Plastic Pick & Place Pad (–02 thru –05 requires –TR)<br>–K = (5.50 mm) .217" DIA Polyimide Film Pick & Place Pad (-02 only) (2 positions minimum, –02 thru –05 requires –TR) | | Leave blank for Tube packaging<br>–TR = Tape & Reel Packaging (27 positions maximum) |

## SPECIFICATIONS

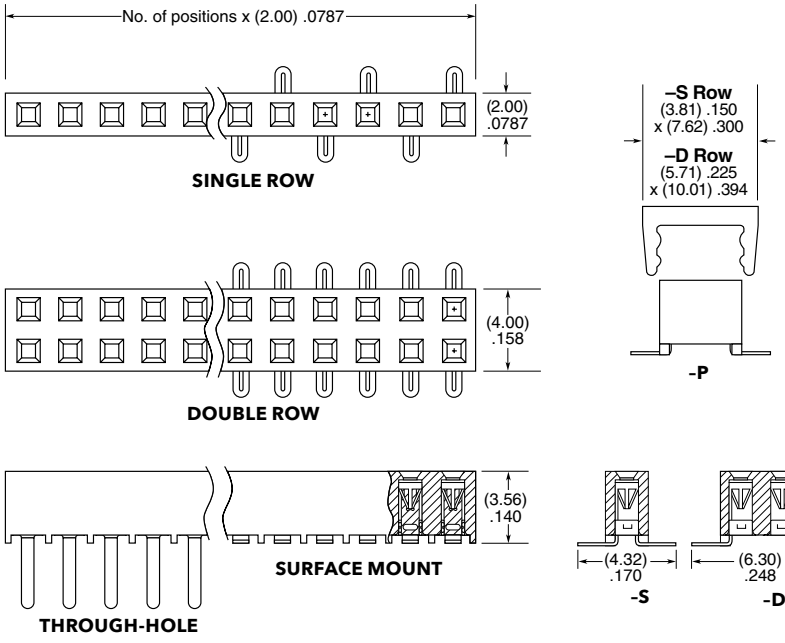
**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
BeCu
**Plating:** Sn or Au over
50 µ" (1.27 µm) Ni
**Current Rating (A-TMM/A-SMM):**
3.2 A per pin
(2 pins powered)
**Voltage Rating:**
350 VAC
**Operating Temp Range:**
-55 °C to +125 °C
**Insertion Depth:**
(3.05 mm) .120" to
(3.25 mm) .128"
**Max Cycles:**
100 with 10 µ" (0.25 µm) Au

## PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max

## ALSO AVAILABLE

Other Platings
(MOQ Required)



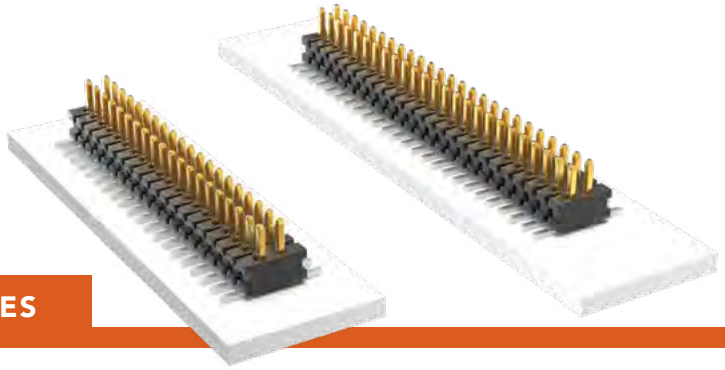

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# SMT MICRO TERMINAL STRIPS

## (1.00 mm) .0394" PITCH • A-FTMH SERIES



### SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over 50 µ" (1.27 µm) Ni
**Current Rating (A-FTMH/A-CLM):**
2.8 A per pin (2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C

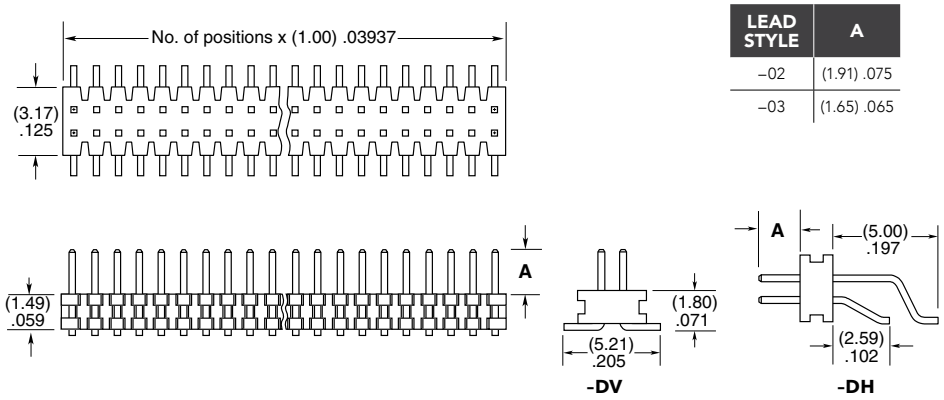
### PROCESSING

**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
-DV: (0.10 mm) .004" max
-DH: (0.10 mm) .004" max (05-25)
(0.15 mm) .006" max (26-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

### ALSO AVAILABLE
MOQ Required

Other platings

| A-FTMH | - | 1 | NO. PINS PER ROW | - | LEAD STYLE | - | PLATING OPTION | - | ROW OPTION | - | OTHER OPTION | - | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **05 thru 50** | | **–02** = (1.91 mm) .075" Post<br>**–03** = (1.65 mm) .065" Post | | **–F** = Gold flash on post, Matte Tin on tail<br>**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail | | **–DV** = Dual Vertical<br>**–DH** = Dual Horizontal | | **–A** = Alignment Pin (3 positions min.) Metal or plastic at Samtec discretion<br>**–K** = (2.50 mm) .098" DIA Polyimide Film Pick & Place Pad (6 position min.) (–DH only)<br>**–P** = Plastic Pick & Place Pad (6 positions min.) (–DV only) | | Leave blank for tube packaging<br>**–TR** Tape & Reel |




| LEAD STYLE | A |
|---|---|
| –02 | (1.91) .075 |
| –03 | (1.65) .065 |

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

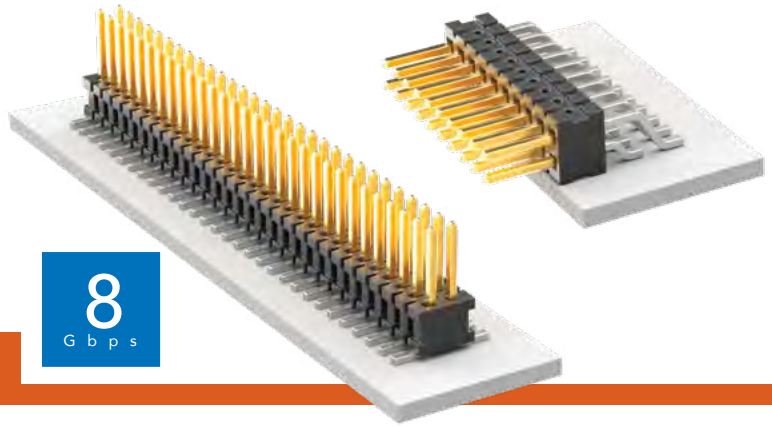
ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

# SURFACE MOUNT MICRO HEADER

## (1.27 mm) .050" PITCH • A-FTSH SERIES

8 Gbps



**A-FTSH**
**Board Mates:**
A-CLP

| A-FTSH | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | TAIL OPTION | – | OTHER OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|

**02 thru 50**

**–01**
= (3.05 mm) .120" Post

**–02**
= (1.91 mm) .075" Post

**–03**
= (1.65 mm) .065" Post
(Mates with A-CLP–D)

**–04**
= (3.81 mm) .150" Post
(Mates with A-CLP-DH)

**–05**
= (4.32 mm) .170" Post
(Mates with A-CLP–BE)

**–L**
= 10 µ" (0.25 µm) Gold on post, Matte Tin on tail

**–DV**
= Double Vertical

**–DH**
= Double Horizontal
(Styles –01, –02 & –04 only)

**–K**
= Keying Shroud Style –01 only and 05, 08, 10, 13, 15, 17, 20 & 25 pins/row only.
(–DV only)

**–A**
= Alignment Pin
(–DV 3 positions minimum)
(–DH 5 positions minimum)
(plastic at Samtec discretion)

**–C**
= (5.00 mm) .197" DIA Polyimide film Pick & Place Pad
(–DH only)

**–P**
= Pick & Place Pad
(–DV 4 positions minimum)
(–DH not available)

**–TR**
= Tape & Reel

## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
Current Rating
**(A-FTSH/A-CLP):**
3.4 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C

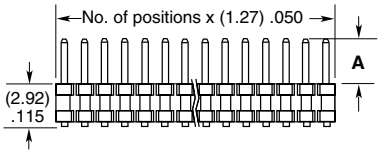
## PROCESSING

**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
–DV Tail Option:
(0.10 mm) .004" max (02-25)
–DH Tail Option:
(0.15 mm) .006" max (26-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

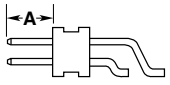
## ALSO AVAILABLE
MOQ Required

Molded Pick & Place pads
Latches
Other platings

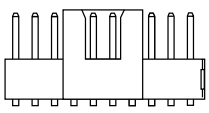
| LEAD STYLE | A |
|---|---|
| –01 | (3.05) .120 |
| –02 | (1.91) .075 |
| –03 | (1.65) .065 |
| –04 | (3.81) .150 |
| –05 | (4.32) .170 |



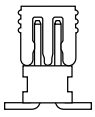

–DV



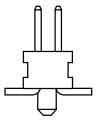

**–DH**
**(Styles –01, –02, –04 only)**



–K



–P



–A

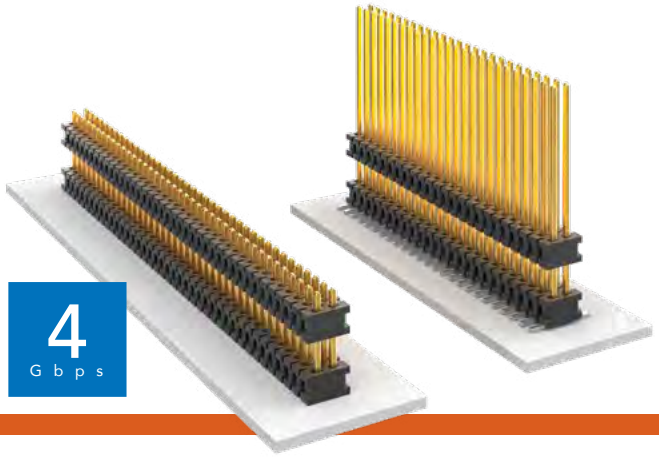
10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

**Notes:**
Some sizes, styles and options are non-standard, non-returnable.

See A-SFM/A-TFM for positive alignment feature.

# MICRO BOARD STACKER

## (1.27 mm) .050" PITCH • A-FW SERIES




**A-FW**
**Board Mates:**
A-CLP

FLEX STACK

| A-FW | – | NO. OF PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | D | – | STACKER HEIGHT | – | POST HEIGHT | – | OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 02 thru 50 | | Specify LEAD STYLE from chart | | –F = Gold flash on post, Matte Tin on tail<br>–L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–G = 10 µ" (0.25 µm) Gold on post, Gold flash on tail | | | | –"XXX" = Stacker Height (in inches)<br>Example: –250 = (6.35 mm) .250" | | –"XXX" = Post Height (in inches)<br>(1.65 mm) .065" minimum<br>Example: –065 = (1.65 mm) .065" | | –ES = End Shroud (–075 post height only. Mates only with A-CLP) (5.46 mm) .215" to (15.49 mm) .610" stacker height only 9 pins/row min.<br>–A = Alignment Pin (3 positions min.) (5.46 mm) .215" to (15.75 mm) .620" stacker height only (SMT only)<br>–P = Pick & Place Pad (5 positions min.) (SMT only)<br>–TR = Tape & Reel (Max overall height = Post+Stacker Height+Pad+ Alignment Pin = (17.78) .700") (SMT only) |

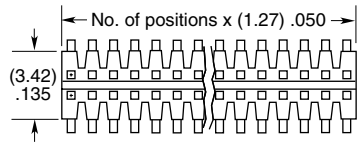
## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over 50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C

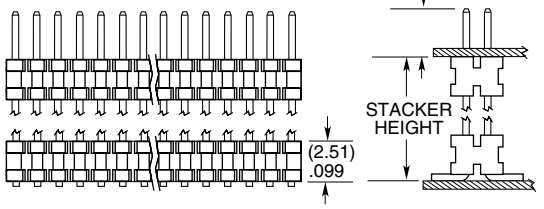
| LEAD STYLE | STACKER HEIGHT | STACKER + POST |
|---|---|---|
| –03 | (5.46) .215 to (8.51) .335 | (7.11) .280 to (10.16) .400 |
| –05 | (8.64) .340 to (15.49) .610 | (10.29) .405 to (17.15) .675 |

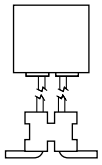
## PROCESSING

**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (02-30)
(0.15 mm) .006" max (31-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

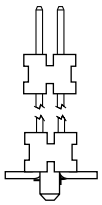



SURFACE MOUNT

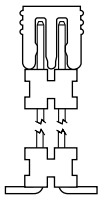


–ES



–A



–P

## MATED HEIGHT

| A-FW LEAD STYLE | A-CLP LEAD STYLE | MATED HEIGHT* |
|---|---|---|
| A-FW-XX-03-X-X-233-065 | -02 | 8.13 mm) .329" |
| A-FW-XX-03-X-X-303-065 | | 9.91 mm) .390" |

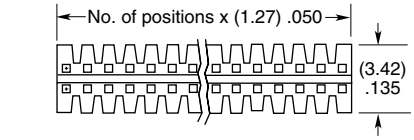
*Processing conditions will affect mated height.

## ALSO AVAILABLE

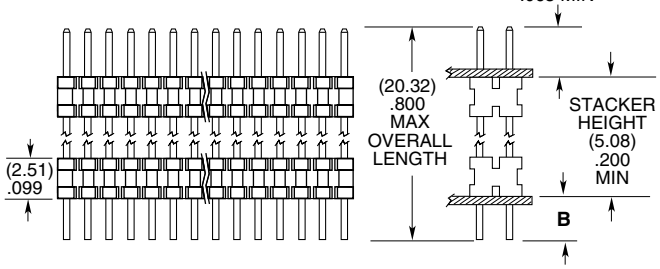
Smaller stack heights (MOQ Required)

**Notes:**
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

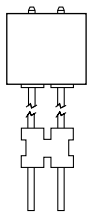
This Series is non-standard, non-returnable.




THROUGH-HOLE




| LEAD STYLE | TAIL (B) |
|---|---|
| –01 | (1.14) .045 |
| –02 | (1.91) .075 |
| –04 | (2.29) .090 |



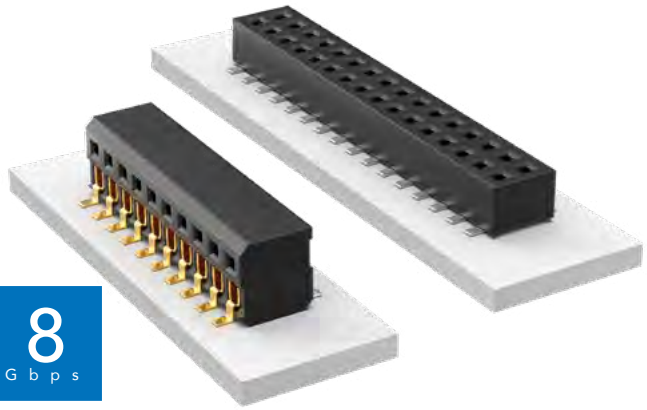
–ES

Due to technical progress, all designs, specifications and components are subject to change without notice.

# LOW-PROFILE DUAL WIPE SOCKET

8 Gbps

**(1.27 mm) .050" PITCH • A-CLP SERIES**



**A-CLP**
**Mates:**
A-FTSH, A-FW

TIGER™ CLAW CONTACT

| A-CLP | - | 1 | NO. PINS PER ROW | - | 02 | - | PLATING OPTION | - | ROW OPTION | - | OTHER OPTIONS | - | PACKAGING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 50 | | | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –S = Single Row<br>–D = Double Row<br>–DH = Double Horizontal (Requires A-FTSH–04 lead style) | | Leave blank for single row<br>–BE = Bottom Entry (Required for bottom entry applications)<br>–A = Alignment Pin (05, 06, 07, 08, 10, 12, 15, 20, 25, 30, 40 positions only) (–DH option and other sizes. Contact Samtec.)<br>–K = (4.00 mm) .157" DIA Polyimide film Pick & Place Pad (3 positions minimum) | | –TR = Tape & Reel |

## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**Current Rating (A-CLP/A-FTSH):**
3.4 A per pin
(2 pins powered)
**Voltage Rating:**
280 VAC/395 VDC
**Operating Temp Range:**
-55 °C to +125 °C
**Insertion Depth:**
Top Entry =
(1.40 mm) .055" minimum
Bottom Entry =
(2.41 mm) .095" minimum
plus board thickness
DH Entry =
(2.31 mm) .091"to (2.67 mm) .105"
**Normal Force:**
60 grams (0.59 N) average
**Max Cycles:**
100 with 10 µ" (0.25 µm) Au

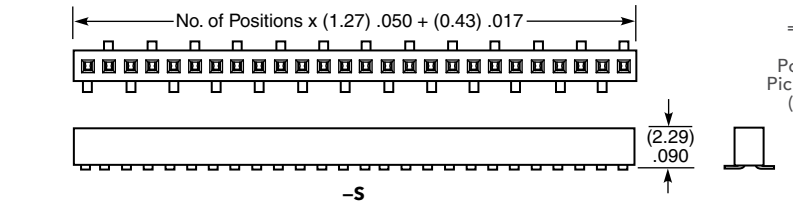
## PROCESSING

**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (02-35)
(0.15 mm) .006" max (36-50)*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)

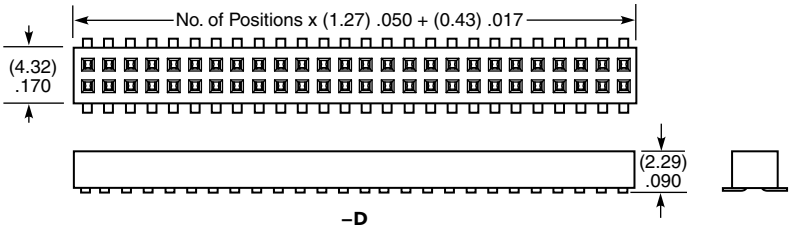
## ALSO AVAILABLE
MOQ Required

Single row
Other platings

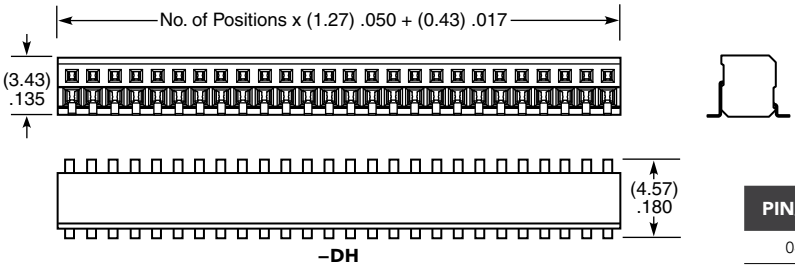
10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES



–S

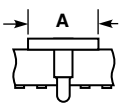


–D



–DH

| PIN/ROW | A |
|---|---|
| 04-15 | (3.56) .140 |
| 16-50 | (7.11) .280 |

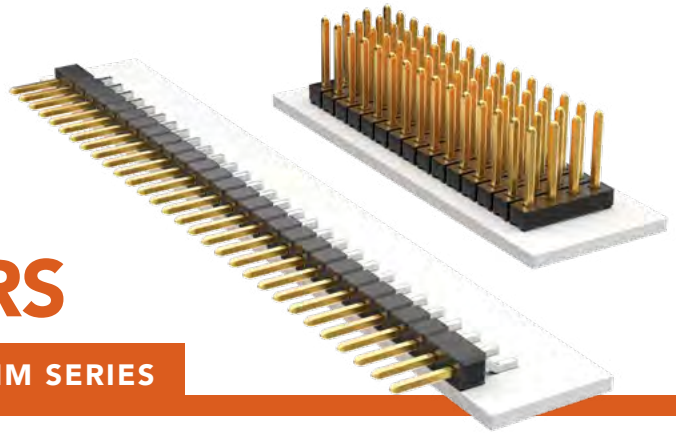



If odd pins/row, alignment pins are on middle position on centerline of the part. If even pins/row, then alignment pins are between middle two positions.

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# HORIZONTAL & MODIFIED HEADERS



## (2.00 mm) .0787" PITCH • A-MMT/A-MTMM SERIES

**A-MMT/A-MTMM**
**Board Mates:**
A-CLT, A-SQT*, A-SQW, A-ESQT, A-SMM, A-MMS

***Important Note:**
A-SQT will not mate to the A-MMT –02 lead style .

## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

## PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity (A-MMT):**
(0.10 mm) .004" max (02-25)
(0.15 mm) .006" max (26-36)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

| A-MMT | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|

**02 thru 50**

**–01**
= (3.20 mm) .126" post

**–02**
= (4.45 mm) .175" post

**–L**
= 10 µ" (0.25 µm) Gold post, Matte Tin on tail

**–T**
= Matte Tin

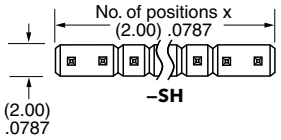
**–SH**
= Single Row

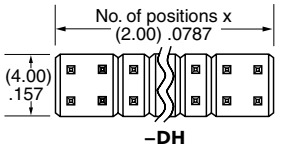
**–DH**
= Double Row

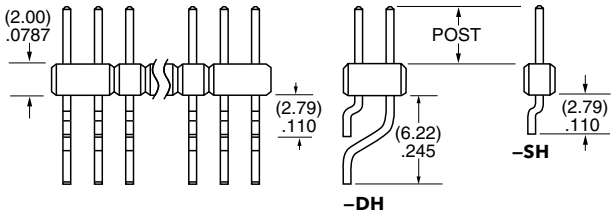
**–K**
= (4.00 mm) .157" DIA Polyimide Film Pick & Place Pad (3 positions min.)

**–P**
= Pick & Place Pad (2 positions min.)

**–TR**
= Tape & Reel




**ALSO AVAILABLE**
MOQ Required

Molded Alignment Pin (-A)
Other platings

| A-MTMM | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | POST HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|

**01 thru 50**

**Specify LEAD STYLE from chart**

**–L**
= 10 µ" (0.25 µm) Gold post, Matte Tin on tail

**–T**
= Matte Tin

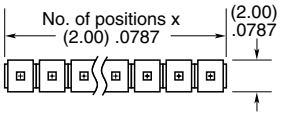
**–S**
= Single Row

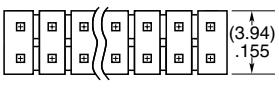
**–D**
= Double Row

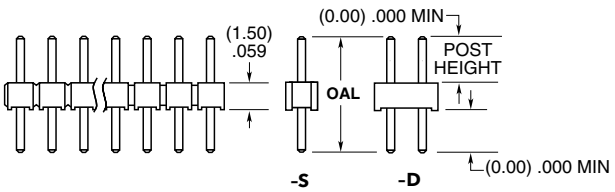
**–"XXX"**
= Post Height in inches (0.13 mm) .005" increments

Example:
–070
= (1.78 mm) .070"

| LEAD STYLE | OAL |
|---|---|
| –02 | (6.48) .255 |
| –03 | (7.67) .302 |
| –04 | (8.20) .323 |
| –05 | (9.58) .377 |
| –06 | (10.08) .397 |
| –07 | (11.58) .456 |
| –08 | (12.09) .476 |
| –09 | (13.59) .535 |
| –10 | (14.10) .555 |
| –11 | (15.09) .594 |
| –12 | (15.60) .614 |
| –13 | (17.09) .673 |
| –14 | (19.08) .751 |
| –15 | (21.08) .830 |




**ALSO AVAILABLE**

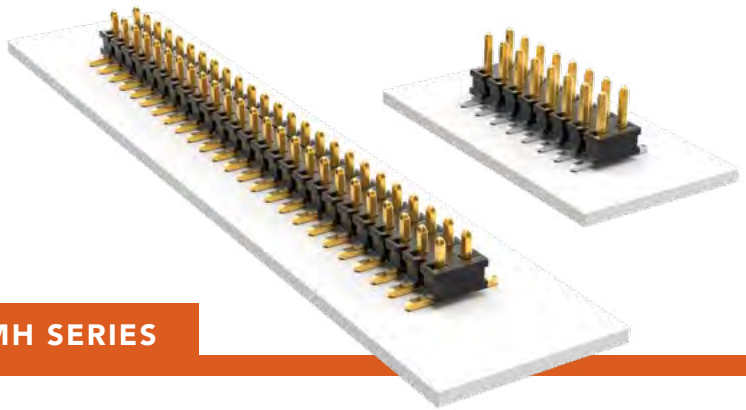
Other Platings
(MOQ Required)

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# FLEXIBLE SMT HEADER

## (2.00 mm) .0787" PITCH • A-TMMH SERIES



**A-TMMH**
**Board Mates:**
A-CLT, A-SQT, A-SQW, A-ESQT, A-SMM, A-MMS

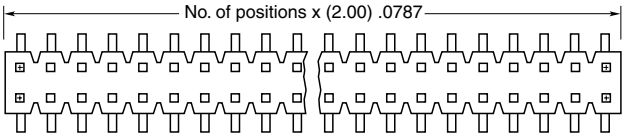
| A-TMMH | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | DV | – | OTHER OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 03 thru 50 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–T = Matte Tin | | | | –A = Alignment Pin (3 positions minimum)<br>–M = Pick & Place Pad (5 positions minimum)<br>–TR = Tape & Reel Packaging (36 positions maximum) |

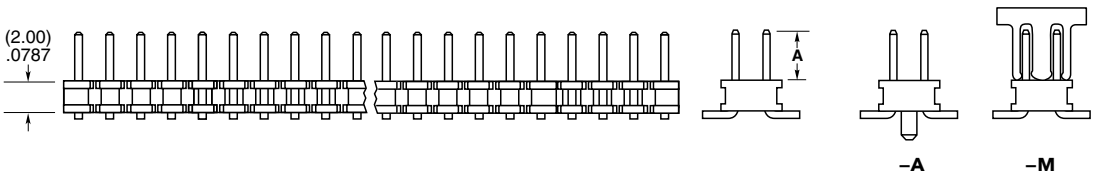
## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over 50 µ" (1.27 µm) Ni
**Current Rating (A-TMMH/A-ESQT):**
4.5 A per pin
(2 pins powered)
**Current Rating (A-TMMH/A-SQT):**
5.1 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
**Voltage Rating:**
281 VAC mated with A-SQW;
250 VAC mated with A-SQT

## PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max




10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

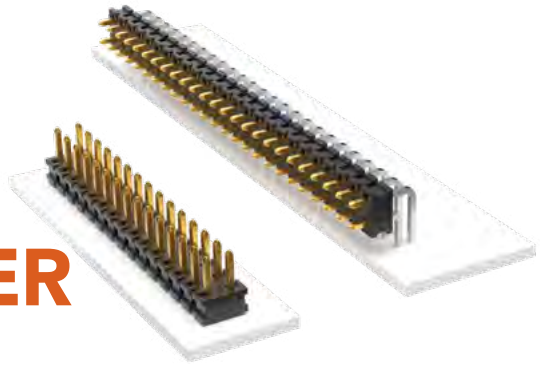
## ALSO AVAILABLE

Other Platings
(MOQ Required)

| LEAD STYLE | A | MATES WITH |
|---|---|---|
| –01 | (3.20) .126 | A-SQT, A-SQW, A-ESQT, A-SMM, A-MMS |
| –04 | (1.91) .075 | A-CLT |
| –05 | (1.65) .065 | |

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

# FLEXIBLE THROUGH-HOLE HEADER



## (2.00 mm) .0787" PITCH • A-TMMH SERIES

**A-TMMH**
**Board Mates:**
A-CLT, A-SQT, A-SQT, A-ESQT, A-SMM. A-MMS

| A-TMMH | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | TAIL OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 03 thru 50 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–T = Matte Tin | | –D = Double Row | | –RA = Right-angle |

## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over 50 µ" (1.27 µm) Ni
**Current Rating (A-TMMH/A-ESQT):**
4.5 A per pin
(2 pins powered)
**Current Rating (A-TMMH/A-SQT):**
5.1 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
**Voltage Rating:**
281 VAC mated with A-SQW;
250 VAC mated with A-SQT

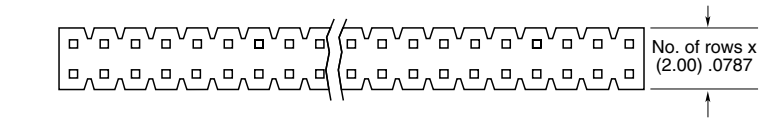
## PROCESSING

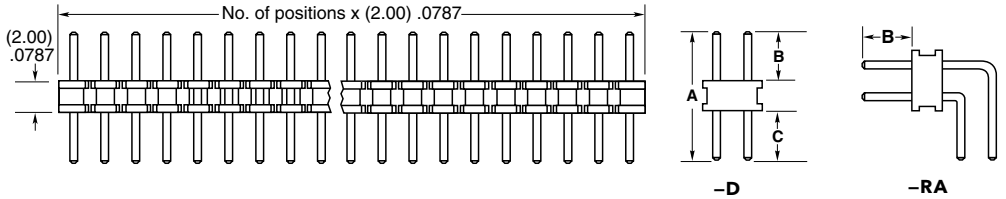
**Lead–Free Solderable:**
Yes

## ALSO AVAILABLE

Other Platings
(MOQ Required)

| LEAD STYLE | A | B | C |
|---|---|---|---|
| –01 | (7.67) .302 | (3.20) .126 | (2.46) .097 |
| –04 | (6.45) .254 | (1.91) .075 | (2.57) .101 |
| –05 | (6.45) .254 | (1.65) .065 | (2.29) .090 |



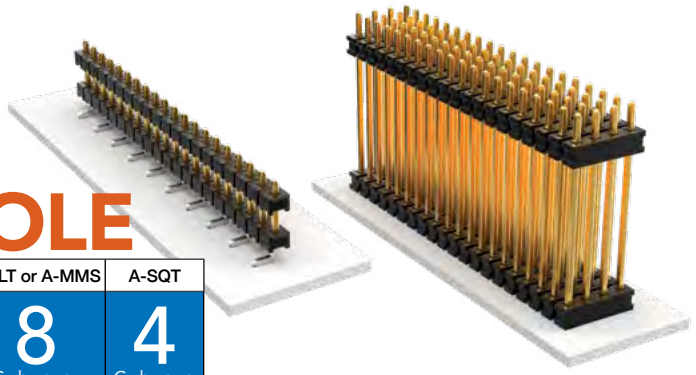




10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# SMT & THROUGH-HOLE BOARD STACKERS



| A-CLT or A-MMS | A-SQT |
|---|---|
| 8 Gbps | 4 Gbps |

## (2.00 mm) .0787" PITCH • A-TW SERIES

**A-TW**
**Board Mates:**
A-CLT, A-SQT,
A-ESQT, A-MMS

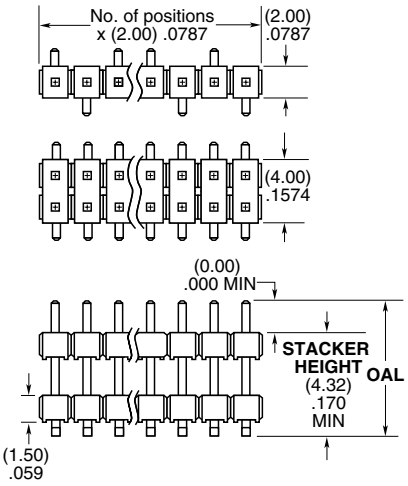
## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**Current Rating:**
A-TW-SM = 4.9 A per pin
(2 pins powered)
A-TW-TH = 5.2 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

## PROCESSING

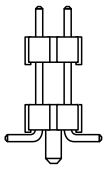
**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)

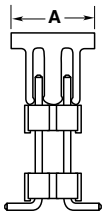
| A-TW | – | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | STACKER HEIGHT | – | SM | – | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 02 thru 36 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–T = Matte Tin | | –S = Single Row<br>–D = Double Row | | –"XXX" = Stacker Height in inches (4.32 mm) .170" min. (0.13 mm) .005" increments<br>Example: –250 = (6.35 mm) .250" | | | | –A = Alignment Pin (Plastic at Samtec discretion) (4.83 mm) .190" min. board space (–D only)<br>–P = Pick & Place Pad (1.91 mm) .075" min. post height (04-36 only)<br>–TR = Tape & Reel (–07 lead style N/A) (–06 lead style with –P option N/A as standard) |




| ROW OPTION | A |
|---|---|
| –S | (5.08) .200 |
| –D | (6.35) .250 |

| LEAD STYLE | OAL |
|---|---|
| –02 | (7.85) .309 |
| –03 | (11.86) .467 |
| –04 | (12.37) .487 |
| –06 | (15.37) .605 |
| –07 | (17.35) .683 |
| –09 | (9.86) .388 |


–A OPTION

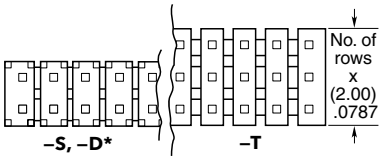


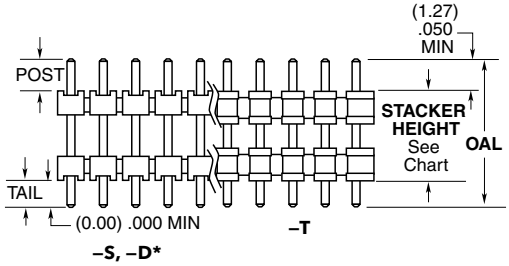
–P OPTION

## ALSO AVAILABLE
MOQ Required

Other Platings
End shrouds with or
without guide post

| A-TW | – | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | STACKER HEIGHT | – | TAIL SPEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 02 thru 50 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–T = Matte Tin | | –S = Single Row<br>–D = Double Row<br>–T = Triple Row | | –"XXX" = Stacker Height in inches (0.13 mm) .005" increments<br>Example: –250 = (6.35 mm) .250" | | –"XXX" = Tail Length in inches (1.93 mm) .076" min. (0.13 mm) .005" increments<br>Example: -150 = (3.81 mm) .150" |




| ROW OPTION | STACKER HEIGHT |
|---|---|
| –S, –D* | (3.05) .120 MIN |
| –T | (4.06) .160 MIN |

*–D with stacker height greater than (4.06 mm) .160" will not have standoffs.

| LEAD STYLE | OAL |
|---|---|
| –01 | (8.20) .323 |
| –02 | (9.60) .377 |
| –03 | (13.60) .535 |
| –04 | (14.10) .555 |
| –05 | (15.10) .594 |
| –06 | (17.10) .673 |
| –07 | (19.10) .751 |
| –08* | (21.10) .830 |
| –09 | (11.60) .456 |
| –10 | (15.60) .614 |
| –11 | (10.08) .397 |
| –12* | (28.19)1.110 |

*Style –08 & –12 = S & D only

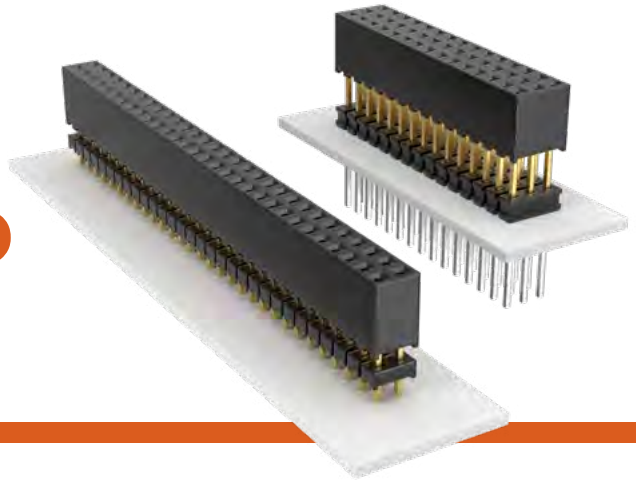
**Notes:**
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# FLEXIBLE ELEVATED SOCKET STRIPS

## (2.00 mm) .0787" PITCH • A-ESQT SERIES



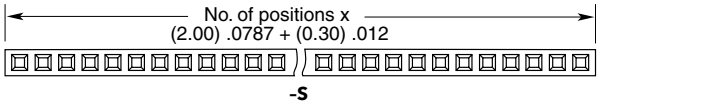
**A-ESQT**
**Board Mates:**
A-TMMH, A-TMM, A-MTMM, A-MMT, A-TW, A-ESQT

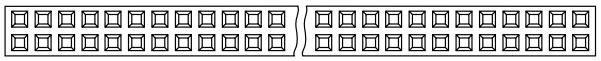
TIGER BUY™ CONTACT

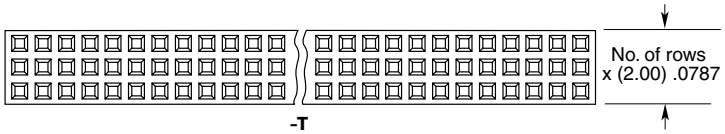
| A-ESQT | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | BODY HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 50 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –S = Single Row<br>–D = Double Row<br>–T = Triple Row | | –"XXX" = Body Height (in inches)<br>(7.87 mm) .309" minimum for –S, –D<br>(9.53 mm) .375" minimum for –T |

## SPECIFICATIONS

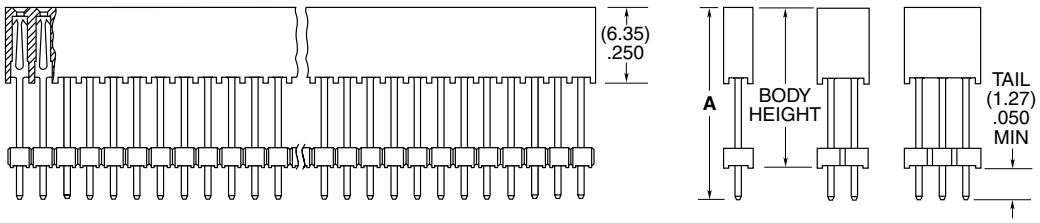
**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**Current Rating (A-ESQT/A-TMMH):**
4.5 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C
**Insertion Depth:**
(2.62 mm) .103" to
(5.03 mm) .198" with
(0.38 mm) .015" wipe
**Max Cycles:**
100 with 10 µ" (0.25 µm) Au
**Lead-Free Solderable:**
Yes, for -S, -D
(Wave only for -T)




| LEAD STYLE | A | MAX TAIL | MAX BODY HEIGHT |
|---|---|---|---|
| –02 | (21.59) .850 | (13.72) .540 | (20.32) .800 |
| –03 | (11.63) .458 | (3.76) .148 | (10.36) .408 |

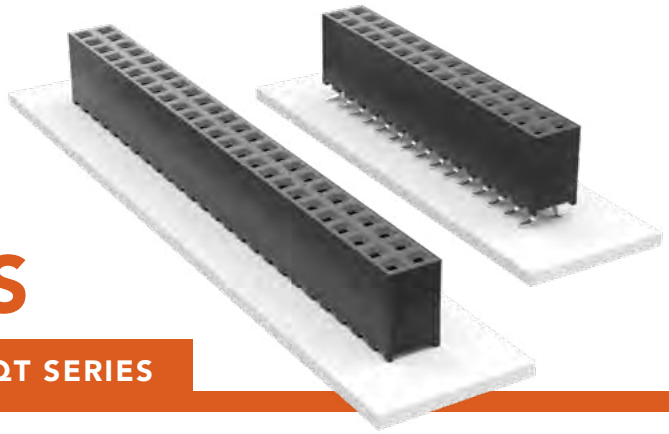



**Note:**
This Series is non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# COST-EFFECTIVE RUGGED SOCKETS

## (2.00 mm) .0787" PITCH • A-SQW/A-SQT SERIES



**A-SQW/A-SQT**
**Board Mates:**
A-TMMH, A-TMM,
A-MTMM, A-MMT, A-TW

TIGER BUY™ CONTACT

### SPECIFICATIONS

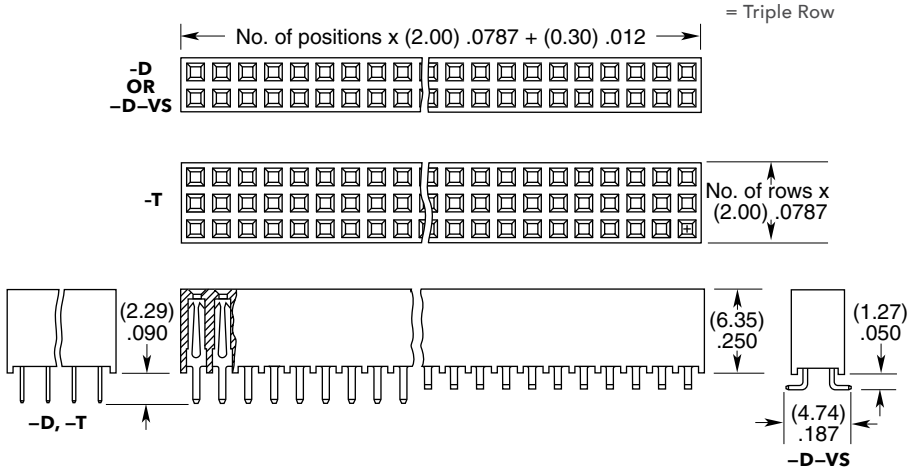
**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**A-SQW Current Rating (A-SQW/A-TMMH):**
3.8 A per pin (2 pins powered)
**A-SQT Current Rating (A-SQT/A-TMMH):**
5.1 A per pin (2 pins powered)
**Voltage Rating:**
281 VAC mated with A-TMM;
250 VAC mated with A-TMMH
**Operating Temp Range:**
-55 °C to +125 °C
**A-SQW Insertion Depth:**
(2.62 mm) .103" to
(5.03 mm) .198" with
(0.38 mm) .015" wipe
**A-SQT Insertion Depth:**
(2.62 mm) .103" to
(5.03 mm) .198"
**A-SQT Normal Force:**
60 grams (0.59 N) average
**Max Cycles:**
100 with 10 µ" (0.25 µm) Au

### PROCESSING

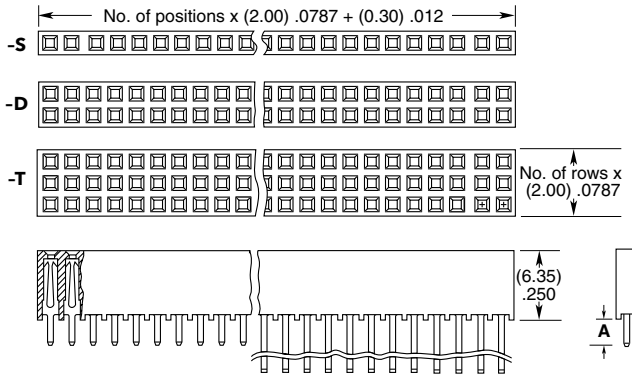
**A-SQW Lead–Free Solderable:**
Yes, for -D & -D-VS
Wave only for -T
**A-SQT Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (02-10)
(0.15 mm) .006" max (11-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

| A-SQW | – | 1 | NO. PINS PER ROW | – | 01 | – | PLATING OPTION | – | ROW OPTION | – | OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 50 | | | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –D = Double Row<br>–D–VS = Double Row Surface Mount<br>–T = Triple Row | | –A = Alignment Pin (5 positions minimum) Plastic at Samtec discretion.<br>–K = (4.25 mm) .167" DIA Polyimide Film Pick & Place Pad (4 positions minimum)<br>–TR = Tape & Reel (4–28 positions only) |




| A-SQT | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 Gbps | | | 02 thru 50 | | Specify LEAD STYLE from chart | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –S = Single Row<br>–D = Double Row<br>–T = Triple Row | | –RA = Right-angle (Lead Style –01 only) |



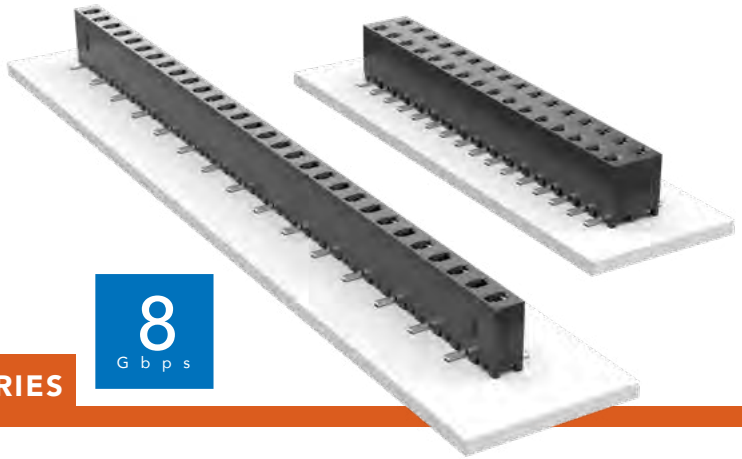

| LEAD STYLE | A |
|---|---|
| –01 | (2.29) .090 |
| –02 | (15.24) .600 |
| –03 | (5.28) .208 |

Due to technical progress, all designs, specifications and components are subject to change without notice.

# TIGER CLAW™ SOCKET STRIP

## (2.00 mm) .0787" PITCH • A-MMS SERIES

8 Gbps



**A-MMS**
**Board Mates:**
A-TMMH, A-TMM,
A-MTMM, A-MMT, A-TW

TIGER™ CLAW CONTACT

| A-MMS | - | 1 | - | 02 | - | | - | | - | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | NO. PINS PER ROW | | | | PLATING OPTION | | ROW OPTION | | OTHER OPTION |
| | | 02 thru 40 | | | | –L = 10 µ" (0.25 µm) Gold contact, Matte Tin on tail | | –SV = Single Vertical<br>–DV = Double Vertical<br>–SH = Single Horizontal<br>–DH = Double Horizontal | | –A = Alignment Pin (-DV only)<br>–K = (5.50 mm) .217" DIA Polyimide Film Pick & Place Pad (–SV & –DV only) (–SV= 3 positions min.) (–DV= 4 positions min.)<br>–P = Plastic Pick & Place Pad (4 positions min., –SV only) (5 positions min., –DV only)<br>–TR = Tape & Reel |

## SPECIFICATIONS

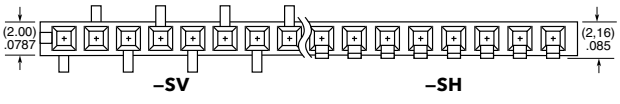
**Insulator Material:**
Black LCP
**Contact Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**Current Rating (A-MMS/A-TMM):**
3.9 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
**Insertion Depth:**
DH = (2.13 mm) .084" to (2.79 mm) .110",
SH = (2.13 mm) .084" minimum or pass-through
Top Entry DV/SV = (2.13 mm) .084" to (4.32 mm) .170"
Bottom Entry DV/SV = (4.27 mm) .168" minimum (Plus board)

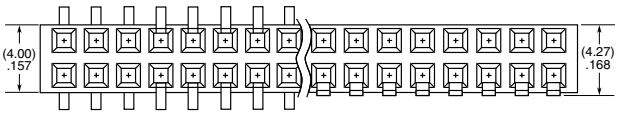
## PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)

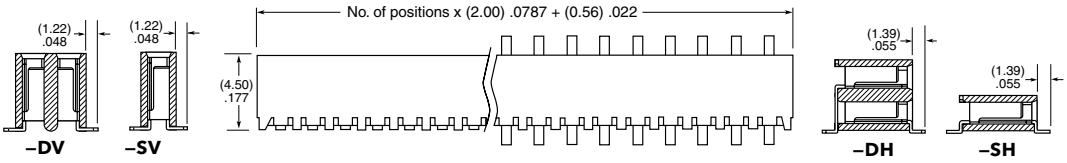
## ALSO AVAILABLE
MOQ Required

Through-hole pass-through options
Other platings








**Note:**
Some lengths, styles and options are non-standard, non-returnable.

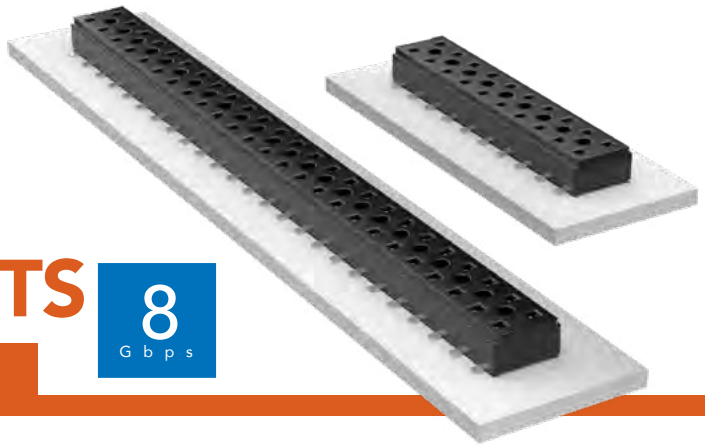
ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

# COST-EFFECTIVE & DUAL WIPE SOCKETS

8 Gbps

## (2.00 mm) .0787" PITCH • A-CLT SERIES



**A-CLT**
**Mates:**
A-TMM, A-TMMH,
A-MTMM, A-MMT, A-TW

TIGER™ CLAW CONTACT

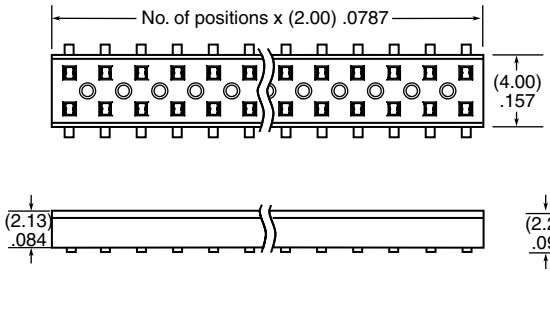
| A-CLT | - | 1 | NO. PINS PER ROW | - | LEAD STYLE | - | PLATING OPTION | - | D | - | OTHER OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 50 | | –02 = Surface Mount | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | All options require Style –02<br>**–BE** = Bottom Entry (Required for bottom entry applications)<br>**–A** = Alignment Pin (3 positions minimum)<br>**–K** = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad (04 thru 50 only)<br>**–TR** = Tape & Reel (36 positions max) |

## SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze
**Plating:**
Sn or Au over 50 µ" (1.27 µm) Ni
**Current Rating (A-TMMH/A-CLT):**
4.1 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C
**Insertion Depth:**
Top Entry=
(1.40 mm) .055" minimum
Bottom Entry=
(2.57 mm) .101" minimum
(add board thickness for correct post OAL)
**Max Cycles:**
100 with 10 µ" (0.25 µm) Au

## PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (02-25)
(0.15 mm) .006" max (26-34)*
(0.20 mm) .008" max (35-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)




## ALSO AVAILABLE

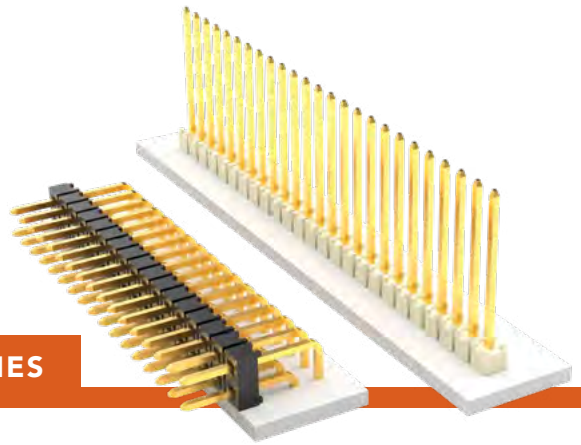
Other Platings
(MOQ Required)

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# MODIFIED .025" SQ POST HEADERS

## (2.54 mm) .100" PITCH • A-MTSW/A-HMTSW SERIES



**A-MTSW/A-HMTSW**
**Board Mates:**
A-SSW, A-SSQ, A-SSM

FLEX STACK

### SPECIFICATIONS

**Insulator Material:**
A-MTSW: Black Glass Filled Polyester
A-HMTSW: Natural Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Au or Sn over 50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

### PROCESSING

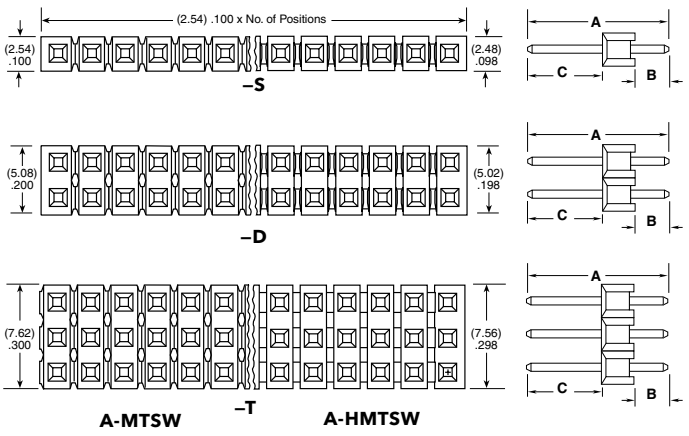
**Lead–Free Solderable:**
A-MTSW: No, Lead Wave Only
A-HMTSW: Yes

| SERIES | PIN CENTERS | NO. PINS PER ROW | LEAD STYLE | PLATING OPTION | ROW OPTION | POST HEIGHT | END OPTION |
|---|---|---|---|---|---|---|---|
| **A-MTSW** = Modified Strip<br>**A-HMTSW** = Hi-Temp Modified Strip | **–1** = (2.54 mm) .100" Pitch (All positions filled)<br>**–2** = (5.08 mm) .200" Pitch (Every other position filled) | **01 thru 50** = .100" (2.54 mm) Center Version<br>**02 thru 25** = .200" (5.08 mm) Center Version | **Specify LEAD STYLE from chart** | **–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>**–T** = Matte Tin | **–S** = Single Row<br>**–D** = Double Row<br>**–T** = Triple Row | **"XXXX"** = "C" Dimension (Specify post height in INCHES .005" (0.13 mm) increments) | **–RA** = Right-Angle<br>**–RE** = Right-Angle Elevated (Single row only) |

| LEAD STYLE | A |
|---|---|
| – 06 | (7.62) .300 |
| – 07 | (10.92) .430 |
| – 08 | (13.46) .530 |
| – 09 | (18.54) .730 |
| – 10 | (21.08) .830 |
| – 11 | (23.62) .930 |
| – 12 | (26.16) 1.030 |
| – 13 | (31.24) 1.230 |
| – 21 | (36.32) 1.430 |
| – 22 | (16.00) .630 |
| – 23 | (11.30) .445 |
| – 24 | (12.19) .480 |
| – 27 | (33.78) 1.330 |
| – 28 | (28.70) 1.130 |

| FOR "B" = (2.29) .090 | |
|---|---|
| LEAD STYLE | C MAXIMUM STRAIGHT |
| – 06 | (2.79) .110 |
| – 07 | (6.10) .240 |
| – 08 | (8.64) .340 |
| – 09 | (13.72) .540 |
| – 10 | (16.26) .640 |
| – 11 | (18.80) .740 |
| – 12 | (21.34) .840 |
| – 13 | (26.42) 1.040 |
| – 21 | (31.50) 1.240 |
| – 22 | (11.18) .440 |
| – 23 | (6.48) .255 |
| – 24 | (7.37) .290 |
| – 27 | (28.96) 1.140 |
| – 28 | (23.88) .940 |

### STRAIGHT PIN VERSIONS

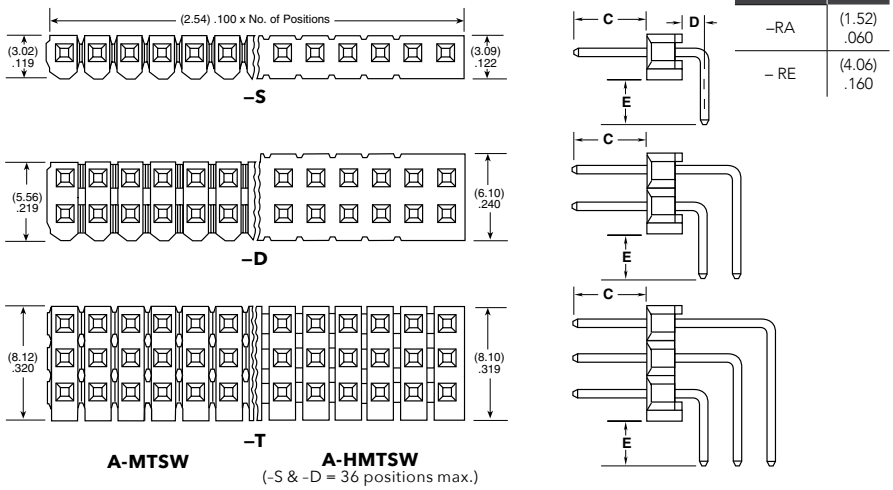



| FOR "E" = (2.29) .090 MIN FOR –RA & –RE) | | |
|---|---|---|
| LEAD STYLE | C MAXIMUM with/–RA | C MAXIMUM with/–RE |
| – 06 | Not Available | Not Available |
| – 07 | (3.30) .130 | Not Available |
| – 08 | (5.84 .230 | (3.30) .130 |
| – 09 | (10.92 .430 | (8.38) .330 |
| – 10 | (13.46) .530 | (10.92) .430 |
| – 11 | (16.00 .630 | (13.46) .530 |
| – 12 | (18.54) .730 | (16.00) .630 |
| *– 13 | (23.62) .930 | (21.08) .830 |
| *– 21 | (28.70) 1.130 | (26.16) 1.030 |
| – 22 | (8.38) .330 | (5.84) .230 |
| *– 23 | (3.68) .145 | Not Available |
| *– 24 | (4.57) .180 | |
| *– 27 | (26.16) 1.030 | (23.62) .930 |
| *– 28 | (21.08) .830 | (18.54) .730 |

* Styles –21, –23, –24, –27 not available with –D Right-angle
Styles –13, –21, –23, –24, –27, –28 not available with –T or Right-angle

**Note:**
These Series are non-standard, non-returnable.

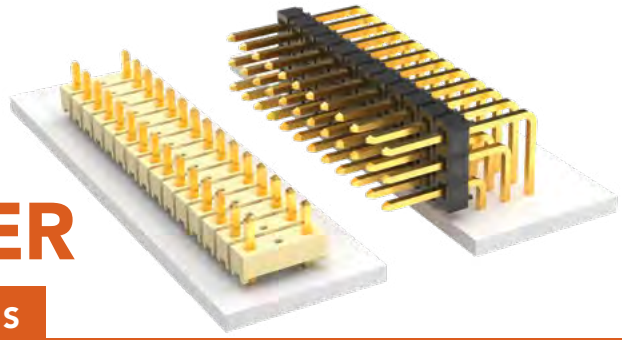
### RIGHT-ANGLE PIN VERSIONS




| –RX OPTION | D |
|---|---|
| –RA | (1.52) .060 |
| – RE | (4.06) .160 |

Due to technical progress, all designs, specifications and components are subject to change without notice.

# THROUGH-HOLE .025" SQ POST HEADER



## (2.54 mm) .100" PITCH • A-TSW/A-HTSW SERIES

**A-TSW, A-HTSW**
**Board Mates:**
A-SSW, A-SSQ, A-SSM

| SERIES | PIN CENTERS | NO. PINS PER ROW | LEAD STYLE |
|---|---|---|---|
| **A-TSW**<br>= Standard Strip<br><br>**A-HTSW**<br>= Hi-Temp Strip | **–1**<br>= .100" (2.54 mm) Centers,<br>(All positions filled)<br><br>**–2**<br>= .200" (5.08 mm) Centers,<br>(Every other position filled) | **01 thru 50**<br>= .100" (2.54 mm)<br>Center Version<br><br>**02 thru 25**<br>= .200" (5.08 mm)<br>Center Version | **Specify LEAD STYLE from chart** |

## SPECIFICATIONS

**Insulator Material:**
A-TSW: PBT
A-HTSW: Natural LCP
**Terminal Material:**
Phosphor Bronze
**Plating:**
Au or Sn over 50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
**Voltage Rating:**
550 VAC mated with A-SSW
450 VAC -RA mated with A-SSM
**Lead–Free Solderable:**
A-HTSW: Yes
A-TSW: No, Lead Wave Only

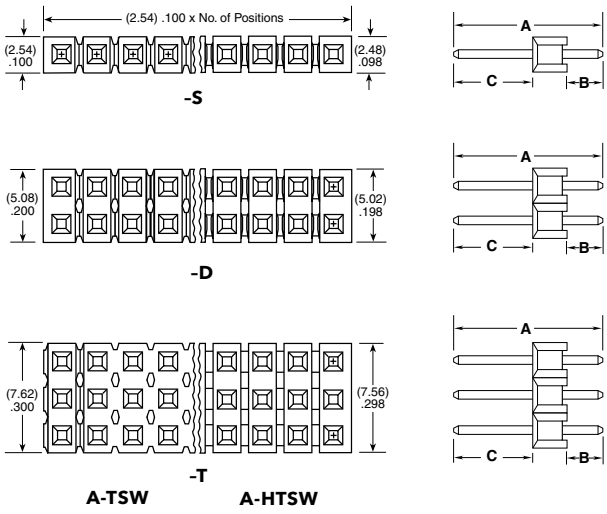
| CURRENT RATING (PER PIN) | | |
|---|---|---|
| A-TSW mated with | | |
| A-SSW | A-SSQ | A-SSM |
| 5.7 A | 6.3 A | 5.2 A |

**2 POSITIONS POWERED**

## ALSO AVAILABLE

Other Platings
(MOQ Required)

### STRAIGHT PIN VERSIONS



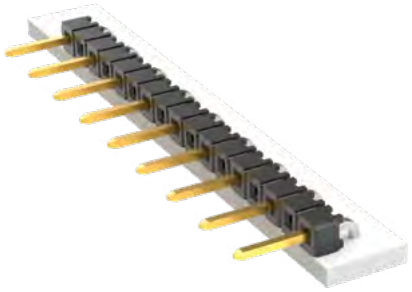

| STRAIGHT PIN VERSIONS | | | |
|---|---|---|---|
| LEAD STYLE | A | B | C |
| –05 | (8.51) .335 | (3.30) .130 | (2.67) .105 |
| – 06 | (7.62) .300 | (2.41) .095 | (2.67) .105 |
| – 07 | (10.92) .430 | (2.54) .100 | (5.84) .230 |
| – 08 | (13.46) .530 | (5.08) .200 | |
| – 09 | (18.54) .730 | (10.16) .400 | |
| –10 | (21.08) .830 | (12.70) .500 | |
| –11 | (23.62) .930 | (15.24) .600 | |
| –12 | (26.16) 1.030 | (17.78) .700 | |
| –13 | (31.24) 1.230 | (22.86) .900 | |
| –14 | (13.46) .530 | (2.79) .110 | (8.13) .320 |
| –15 | (18.54) .730 | | (13.21) .520 |
| –16 | | (7.87) .310 | (8.13) .320 |
| –17 | (21.08) .830 | (2.79) .110 | (15.74) .620 |
| –18 | (23.62) .930 | | (18.29) .720 |

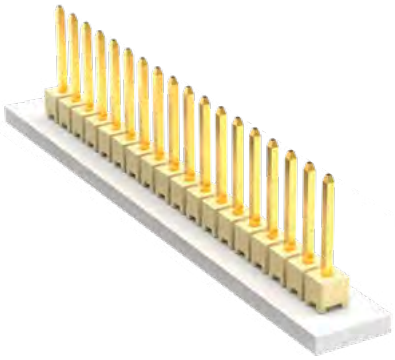
| STRAIGHT PIN VERSIONS | | | |
|---|---|---|---|
| LEAD STYLE | A | B | C |
| –19 | (26.16) 1.030 | (2.79) .110 | (20.83) .820 |
| – 20 | (31.24) 1.230 | | (25.91) 1.020 |
| – 21 | (36.32) 1.430 | (2.79) .110 | (30.99) 1.220 |
| – 22 | (16.00) .630 | (7.62) .300 | (5.84) .230 |
| – 23 | (11.30) .445 | (2.92) .115 | |
| – 24 | (12.15) .480 | | (6.73) .265 |
| 25 | (16.00) .630 | (5.33) .210 | (8.13) .320 |
| ▲– 26 | (11.58) .456 | (3.20) .126 | (5.84) .230 |
| – 27 | (33.78) 1.330 | (25.40) 1.000 | |
| – 28 | (28.70) 1.130 | (20.32) .800 | |
| – 29 | (33.78) 1.330 | (23.11) .910 | (8.13) .320 |
| – 30 | (28.70) 1.130 | (18.03) .710 | |
| +– 41 | (9.27) .365 | (0.89) .035 | (5.84) .230 |
| +– 42 | (11.94) .470 | (1.27) .050 | (8.13) .320 |

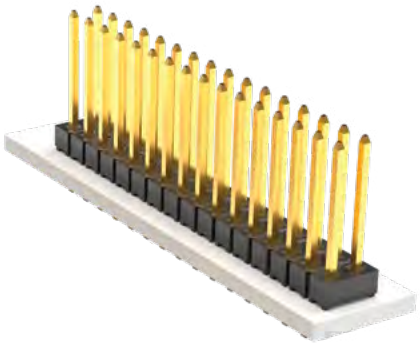
+ Style –41 & –42 available with A-HTSW only.
▲ Except: Style –26 (0.46) .018 DIA Tail

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.







## PLATING OPTION

**–L**
= 10 µ" (0.25 µm) Gold on post, Matte Tin on tail

**–T**
= Matte Tin

## ROW OPTION

**–S**
= Single Row

**–D**
= Double Row

**–T**
= Triple Row

## OTHER OPTION

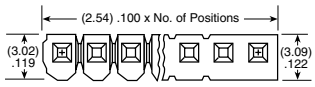
(Leave blank for straight version)

**– RA**
= Right-angle

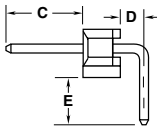
**–RE**
= Right-angle Elevated
(A-HTSW only)

**–NA**
= Right-angle
(Using straight body for coplanar mating with A-SSW-RA series)

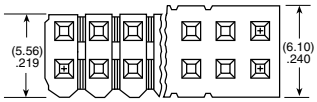
### RIGHT-ANGLE VERSIONS



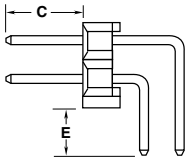

-S

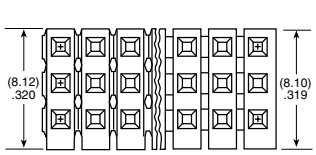



| LEAD STYLE | D |
|---|---|
| – RA | (1.52) .060 |
| – RE | (4.06) .160 |



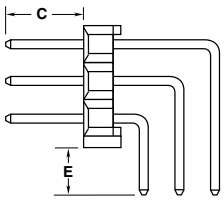

-D




-T

A-TSW A-HTSW

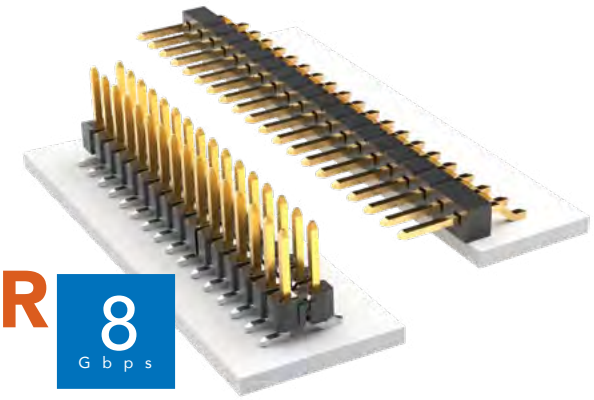



| RIGHT-ANGLE VERSIONS | | |
|---|---|---|
| -RE LEAD STYLE | C | SINGLE E |
| – 09 | (5.84) .230 | (4.83) .190 |
| –10 | | (7.37) .290 |
| –11 | | (9.91) .390 |
| –12 | | (12.45) .490 |
| –13 | | (17.53) .690 |
| –16 | (8.13) .320 | (2.54) .100 |
| – 21 | (5.84) .230 | (22.61) .890 |
| – 22 | | (2.29) .090 |
| – 27 | | (20.07) .790 |
| – 28 | | (14.99) .590 |

| RIGHT-ANGLE VERSIONS | | | | |
|---|---|---|---|---|
| -RA LEAD STYLE | SINGLE (–S) | | DOUBLE (–D) | TRIPLE (–T & –Q) |
| | C | E | E | E |
| – 08 | (5.84) .230 | (2.29) .090 | (2.29) .090 | (2.29) .090 |
| – 09 | | (7.37) .290 | (7.37) .290 | (7.37) .290 |
| –10 | | (9.91) .390 | (9.91) .390 | (9.91) .390 |
| –11 | | (12.45) .490 | (12.45) .490 | (12.45) .490 |
| –12 | | (14.99) .590 | (14.99) .590 | (14.99) .590 |
| –13 | | (20.07) .790 | (20.07) .790 | N/A |
| *–16 | (8.13) .320 | (5.08) .200 | (5.08) .200 | (5.08) .200 |
| – 21 | (5.84) .230 | (25.15) .990 | N/A | N/A |
| *– 22 | | (4.83) .190 | (4.83) .190 | (4.83) .190 |
| *– 25 | (8.13) .320 | (2.54) .100 | (2.54) .100 | (2.54) .100 |
| – 27 | (5.84) .230 | (22.61) .890 | N/A | N/A |
| – 28 | | (17.53) .690 | (17.53) .690 | |
| – 29 | (8.13) .320 | (20.32) .800 | N/A | |
| – 30 | | (15.24) .600 | (15.24) .600 | |

* Available with –LA (Locking Lead) Option

# SURFACE MOUNT .025" SQ POST HEADER




**(2.54 mm) .100" PITCH • A-TSM SERIES**

**A-TSM**
**Board Mates:**
A-SSW, A-SSQ, A-SSM

| A-TSM | – 1 | NO. PINS PER ROW | – LEAD STYLE | – PLATING OPTION | – ROW OPTION | – OTHER OPTIONS |
|---|---|---|---|---|---|---|
| | | 02 thru 30 | Specify LEAD STYLE from chart | –L =10 µ" (0.25 µm) Gold on post, Matte Tin on tail<br>–T = Matte Tin | –SV = Single Row Vertical Pin<br>–DV = Double Row Vertical Pin<br>–SH = Single Row Horizontal Pin<br>–DH = Double Row Horizontal Pin (Style –01, –02 & –03 only) | –A = Alignment Pin metal or plastic at Samtec discretion (02 positions minimum)<br>–K = (6.50 mm) .256" DIA Polyimide Film Pick & Place Pad (–SH: 4 positions minimum without –TR; 2 & 3 positions available with –TR) (–DH: 4 positions minimum without –TR)<br>–P = Plastic Pick & Place Pad (–DV: 4 positions minimum without –TR; 2 & 3 positions available with –TR) (–SH: 4 positions minimum without –TR; 2 & 3 positions available with –TR) (–DH: 5 positions minimum without –TR) (–SV: 4 positions minimum without –TR; 2 & 3 positions available with –TR)<br>–TR = Tape & Reel –SV: 02-22 positions, –DV: 02-28 positions, –SH: 02-30 positions, –DH: 02-29 positions |

## SPECIFICATIONS

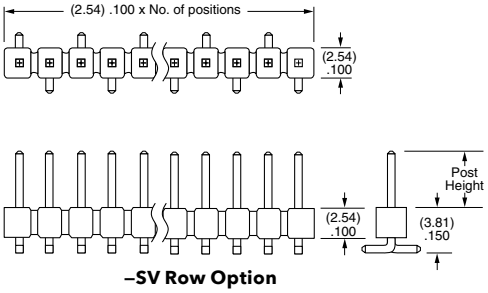
**Insulator Material:**
Black Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
**Voltage Rating:**
475 VAC
-SV/-DV mated with A-SSM

## PROCESSING

**Lead–Free Solderable:**
Yes
**-DH/-SH/-SV Lead Coplanarity:**
(0.15 mm) .006" max (02-36)*
**-DV Lead Coplanarity:**
(0.10 mm) .004" max (02-05)
(0.13 mm) .005" max (06-10)*
(0.15 mm) .006" max (11-36)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

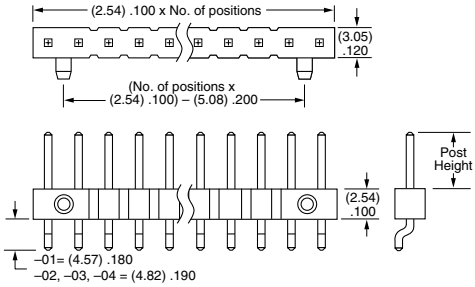
## ALSO AVAILABLE

Other Platings
(MOQ Required)




**–SV Row Option**

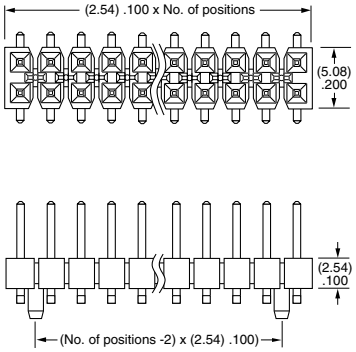
| LEAD STYLE | POST HEIGHT | MATES WITH |
|---|---|---|
| –01 | (5.84) .230 | A-SSW, A-SSM |
| –02 | (8.13) .320 | A-SSM -DH |
| –03 | (10.67) .420 | Bottom Mount & Pass Through |
| –04 | (3.05) .120 | N/A |



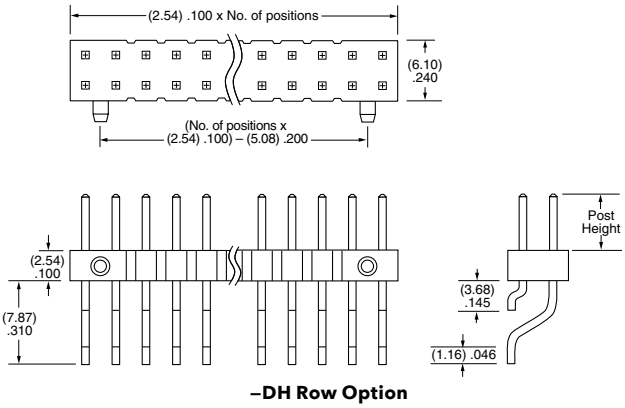

**–SH Row Option**

| MATES | CURRENT RATING (PER PIN) |
|---|---|
| A-TSM/A-SSW | 4.7 A |
| A-TSM/A-SSM | 5.4 A |

**2 POSITIONS POWERED**




**–DV Row Option**



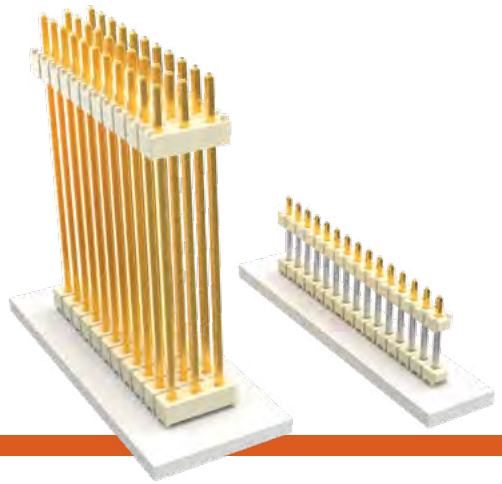

**–DH Row Option**

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# FLEXIBLE .025" SQ BOARD STACKERS

## (2.54 mm) .100" PITCH • A-HW SERIES



**A-HW**
**Board Mates:**
A-SSW, A-SSQ, A-SSM

FLEX STACK

| SERIES | NO. PINS PER ROW | LEAD STYLE | PLATING OPTION | ROW OPTION | STACKER HEIGHT | OTHER OPTION |
|---|---|---|---|---|---|---|
| **A-HW**<br>= High-Temp Custom Tail | **01 thru 50** | **Specify LEAD STYLE from chart** | **–L**<br>= 10 µ" (0.25 µm) Gold on contact area of longer tail, Matte Tin on tail<br>**–T**<br>= Matte Tin | **–S**<br>= Single Row<br>**–D**<br>= Double Row<br>**–T**<br>= Triple Row | **–"XXX"**<br>= Stacker Height (in inches) (5.08 mm) .200" minimum<br>Example: –250 = (6.35 mm) .250" | **–"XXX"**<br>= Tail Length (in inches) (1.40 mm) .055" minimum<br>Example: –250 = (6.35 mm) .250" |

## SPECIFICATIONS

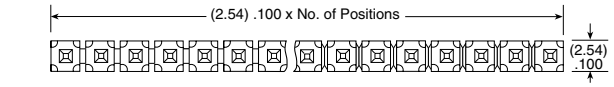
**Insulator Material:**
Natural Liquid Crystal Polymer
**Terminal Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

## PROCESSING

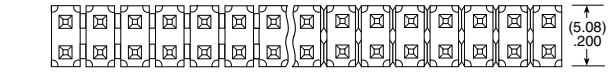
**Lead–Free Solderable:**
Yes

## ALSO AVAILABLE
MOQ Required

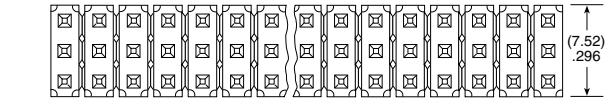
Polarization



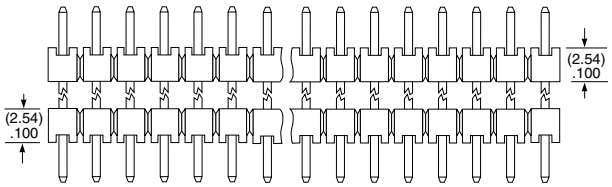
–S



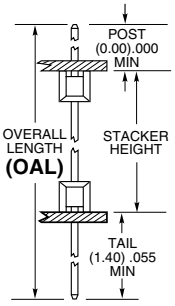
–D



–T




| LEAD STYLE | OAL |
|---|---|
| – 07 | (10.92) .430 |
| – 08 | (13.46) .530 |
| – 09 | (18.54) .730 |
| –10 | (21.08) .830 |
| –11 | (23.62) .930 |
| –12 | (26.16) 1.030 |
| –13 | (31.24) 1.230 |
| –14 | (36.32) 1.430 |
| –15 | (16.00) .630 |
| –16 | (11.30) .445 |
| –17 | (12.19) .480 |
| –19 | (33.78) 1.330 |
| –20 | (28.70) 1.130 |

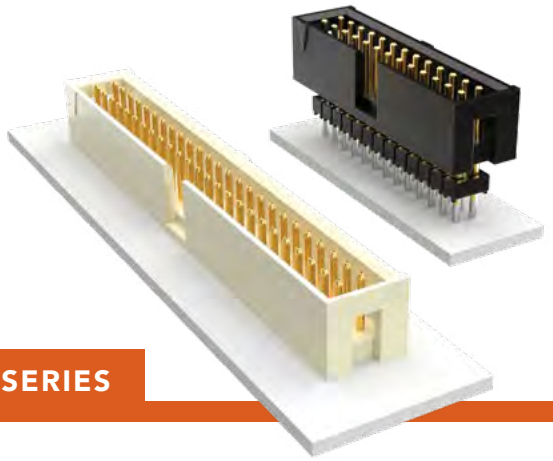



**Notes:**
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

# SHROUDED .025" SQ POST HEADERS

## (2.54 mm) .100" PITCH • A-TSS/A-HTSS/A-ZSS SERIES



**A-TSS/A-HTSS/A-ZSS**
**Mates:**
A-SSW, A-SSQ, A-SSM

| SERIES | - | 1 | NO. PINS PER ROW | - | LEAD STYLE | - | PLATING OPTION | - | ROW OPTION |
|---|---|---|---|---|---|---|---|---|---|

**A-TSS**
= Connector Strip

**A-HTSS**
= High Temp Connector Strip

**03**
(A-TSS only)

**05, 07, 08, 10, 12, 13, 15, 17, 20, 25, 32, 36**
(Standard sizes)

**Specify LEAD STYLE from chart**

**–L**
= 10 µ" (0.25 µm) Gold on post, Matte Tin on tail

**–T**
= Matte Tin

**–D**
= Double Row Through-hole (lead style –01, –02 & –03 only)

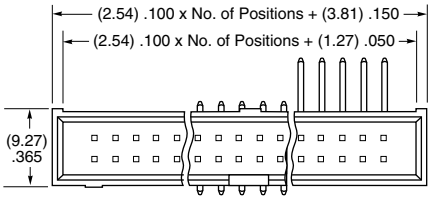
**–DV**
= Double Row Surface Mount (lead style –01 only) (A-HTSS only)

**–D–RA**
= Double Row Right-angle (lead style –04 & –05 only)

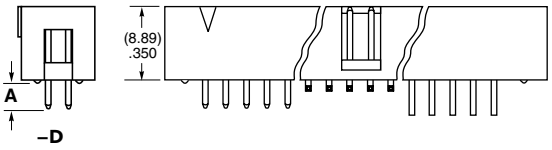
## SPECIFICATIONS

**Insulator Material:**
A-TSS, A-ZSS=Black Glass Filled Polyester
A-HTSS=Natural PCT
**Insulation Resistance:**
5000 MΩ min
**Terminal Material:**
Phosphor Bronze
**Plating:** Au or Sn over 50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
**Withstanding Voltage:**
1000 VRMS

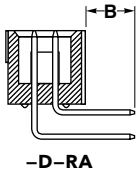
| LEAD STYLE | T/H (A) |
|---|---|
| –01 | (2.92) .115 |
| –02 | (4.19) .165 |
| –03 | (14.35) .565 |




| LEAD STYLE | RIGHT ANGLE (B) |
|---|---|
| –04 | (3.30) .130 |
| –05 | (5.84) .230 |








## PROCESSING

**Lead–Free Solderable:**
A-HTSS=Yes
A-TSS, A-ZSS=No, Lead Wave only
**SMT Lead Coplanarity:**
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)

| A-ZSS | - | 1 | NO. PINS PER ROW | - | LEAD STYLE | - | PLATING OPTION | - | D | - | BODY HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|

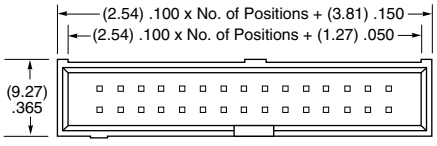
**02-18, 20, 22, 24, 25, 28, 30, 32, 36**
(Standard sizes)

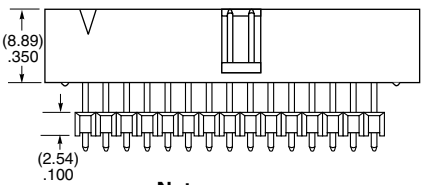
**Specify LEAD STYLE from chart**

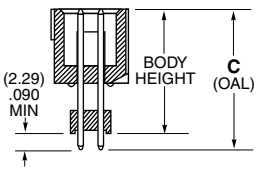
**–L**
= 10 µ" (0.25 µm) Gold on post, Matte Tin on tail

**–T**
= Matte Tin

**–"XXXX"**
= Body Height




| LEAD STYLE | C (OAL) | MAX BODY HEIGHT |
|---|---|---|
| –01 | (16.00) .630 | (13.72) .540 |
| –02 | (18.54) .730 | (16.26) .640 |
| –03 | (21.08) .830 | (18.80) .740 |
| –04 | (23.62) .930 | (21.34) .840 |
| –05 | (26.16) 1.030 | (23.88) .940 |
| –06 | (28.70) 1.130 | (26.42) 1.040 |
| –07 | (31.24) 1.230 | (28.96) 1.140 |
| –08 | (33.78) 1.330 | (31.50) 1.240 |
| –09 | (36.32) 1.430 | (34.04) 1.340 |

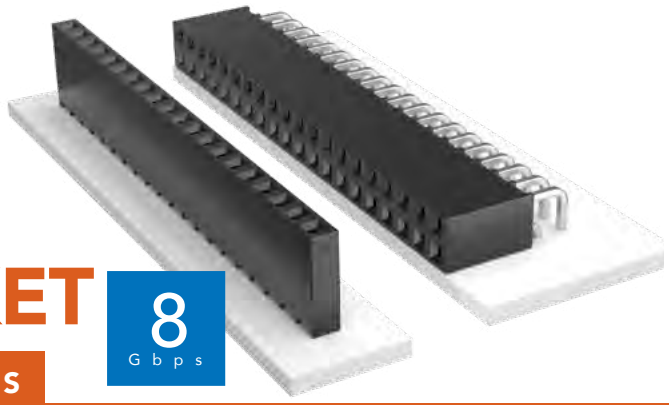
**Note:**
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

## ALSO AVAILABLE
MOQ Required

Other sizes
Other platings
Alignment Pins
Single Row
Locking Leads

**Note:**
Some lengths, styles and options are non-standard, non-returnable. A-ZSS is non-standard, non-returnable.

# THROUGH-HOLE .025" SQ POST SOCKET



8 Gbps

**(2.54 mm) .100" PITCH • A-SSW/A-SSQ SERIES**

**A-SSW/A-SSQ**
**Mates:**
A-TSW, A-MTSW, A-TSS, A-HTSS, A-ZSS, A-TSM

TIGER BUY™ CONTACT

| SERIES | – | 1 | NO. PINS PER ROW | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | TAIL OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A-SSW** = Solder Tail<br>**A-SSQ** = Square Tail | | | **01 thru 50** | | **Specify LEAD STYLE from chart** | | **–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail<br>**–T** = Matte Tin (–T N/A on LIF contacts) | | **–S** = Single Row<br>**–D** = Double Row<br>**–T** = Triple Row | | Leave blank for straight pin version<br>**–RA** = Right-angle (–S & –D only) |

## SPECIFICATIONS

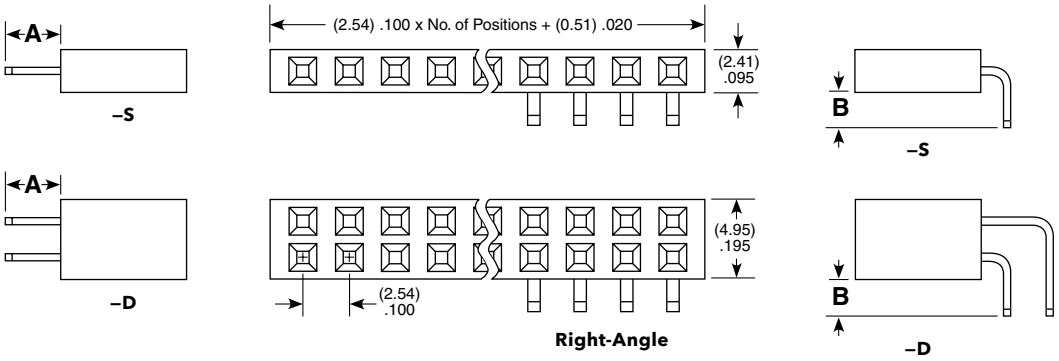
**Insulator Material:**
Black Liquid Crystal Polymer (-S & -D) or
Black High Temperature Thermoplastic (-T)
**Contact Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating (A-SSW/A-TSM):**
4.7 A per pin
(2 pins powered)
**Current Rating (A-SSQ/A-TSW):**
6.3 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
**Insertion Depth:**
(3.68 mm) .145" to
(6.35 mm) .250"
**Normal Force:**
Standard= 125 grams (4.4 N)
**Max Cycles:**
100 with 10 µ" (0.25 µm) Au
**Voltage Rating:**
465 VAC / 655 VDC

## PROCESSING

**Lead–Free Solderable:**
Yes:
-S and -D row option
No, Lead Wave only:
-T row option

| THROUGH-HOLE | | |
|---|---|---|
| LEAD STYLE | | SINGLE DOUBLE OR TRIPLE |
| Standard Insertion Force | Low Insertion Force* | A |
| –01 | –21 | (2.64) .104 |
| –02 | –22 | (4.93) .194 |
| –03 | –24 | (10.00) .394 |
| –04 | –24 | (14.83) .584 |
| –06** | N/A | (3.15) .124 |

* LIF not available with Tin Plating
**Style –06 Not available with A-SSQ




| RIGHT-ANGLE | | | |
|---|---|---|---|
| LEAD STYLE | | SINGLE | DOUBLE |
| Standard Insertion Force | Low Insertion Force* | (–S ) B | (–D ) B |
| –02 | –22 | (2.54) .100 | (2.54) .100 |
| –03 | –23 | (7.62) .300 | (7.62) .300 |
| –04 | –24 | (12.45) .490 | N/A |

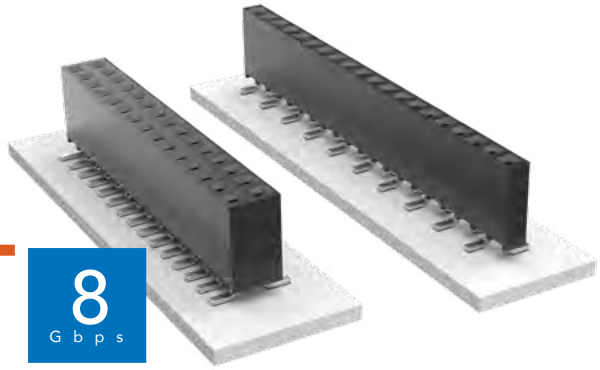
*LIF not available with Tin Plating

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

# SURFACE MOUNT .025" SQ POST SOCKET

## (2.54 mm) .100" PITCH • A-SSW SERIES

8 Gbps



**A-SSW**
**Mates:**
A-TSW, A-MTSW, A-HTSW, A-HMTSW, A-TSS, A-HTSS, A-ZSS, A-TSM, A-HW

TIGER BUY™ CONTACT

| A-SSW | – | 1 | NO. PINS PER ROW | – | 22 | – | PLATING OPTION | – | ROW OPTION | – | VS | – | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 02 thru 36 | | | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –S = Single Row<br>–D = Double Row | | | | –K = –S: (3.50 mm) .138" DIA, –D: (6.50 mm) .256" DIA Polyimide film Pick & Place Pad (03 positions min.)<br>–TR = Tape & Reel (–02 thru –28) |

## SPECIFICATIONS

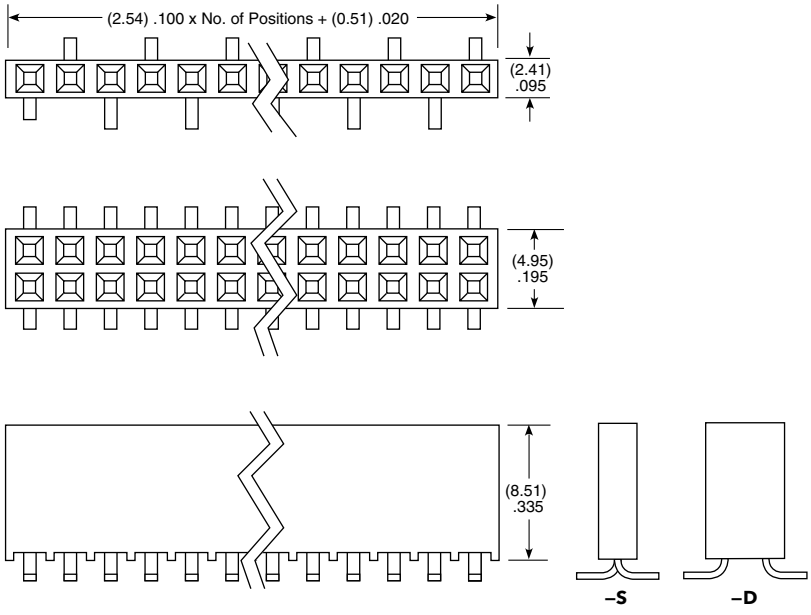
**Insulator Material:**
Black LCP
**Contact Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating (A-SSW/A-TSM):**
4.7 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
**Insertion Depth:**
(3.68 mm) .145" to
(6.35 mm) .250"
**Max Cycles:**
100 with 10 µ" (0.25 µm) Au
**Voltage Rating:**
465 VAC / 655 VDC

## PROCESSING

**Lead–Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max

## ALSO AVAILABLE
MOQ Required

Other platings
Notch option



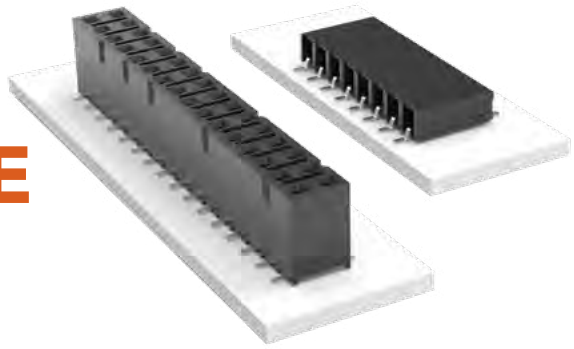

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# TIGER CLAW™ SURFACE MOUNT SOCKET

8 Gbps

**(2.54 mm) .100" PITCH • A-SSM SERIES**



**A-SSM**
**Mates:**
A-TSW, A-MTSW,
A-TSS, A-ZSS, A-DW,
A-ZW, A-TSM, A-HMTSW,
A-HTSW, A-HTSS, A-MTLW

TIGER™ CLAW CONTACT

| A-SSM | - | 1 | NO. PINS PER ROW | - | PLATING OPTION | - | ROW OPTION | - | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|

**02 thru 36**
(–SV, – SH, –DH)

**02 thru 40**
(–DV)

**–L**
= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail

**–SV**
= Single Row Vertical Pin

**–DV**
= Double Row Vertical Pin

**–SH**
= Single Row Horizontal Pin

**–DH**
= Double Row Horizontal Pin

**–A**
=Alignment Pin (-DV only)

**–BE**
= Bottom Entry (–DV & –SV only)

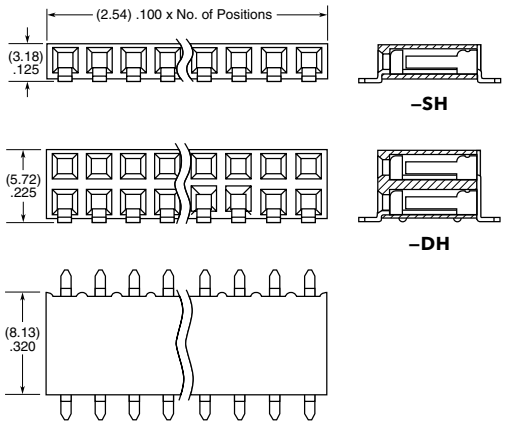
**–P**
= Plastic Pick & Place Pad (–DV & –SV only) (6 positions min.; Contact Samtec on availability of other positions)

**–K**
= (6.50 mm) .256" DIA Polyimide film Pick & Place Pad (2 positions min.) –DV & –SV only

**–TR**
= Tape & Reel (29 positions max.)

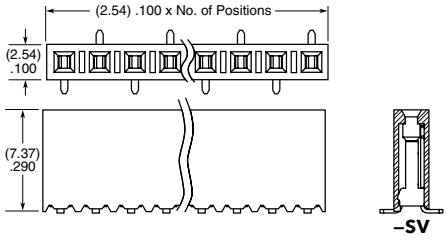
## SPECIFICATIONS

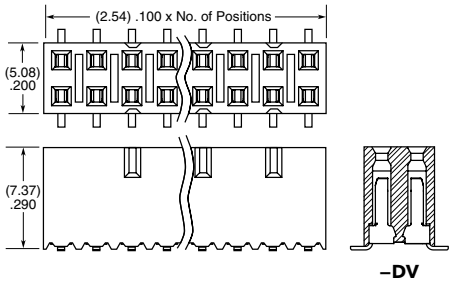
**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating (A-SSM/A-TSW):**
5.2 A per pin
(2 pins powered)
**Voltage Rating:**
405 VAC / 572 VDC
**Operating Temp Range:**
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
**Insertion Depth:**
-SV/-DV = (4.34 mm) .171" to (7.24 mm) .285" or pass-through from top; (5.56 mm) .219" plus board thickness minimum from bottom;
-SH/-DH = (4.34 mm) .171" to (6.35 mm) .250"
**Normal Force:**
125 grams (1.21 N) average




## PROCESSING

**Lead–Free Solderable:**
Yes
**–DH Coplanarity:**
Less than 28 positions
(0.15 mm) .006" max*
More than 27 positions
(0.20 mm) .008" max*
**–SH, –SV, –DV Coplanarity:**
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)



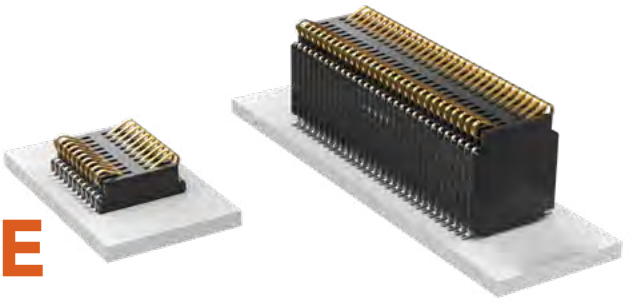




10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.

# LOW-PROFILE AND ELEVATED ONE-PIECE



## (1.00 mm) .0394" PITCH • A-FSI SERIES

## SPECIFICATIONS

**Insulator Material:**
Liquid Crystal Polymer
**Contact Material:**
BeCu
**Current Rating:**
2.8 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C
**Plating:**
Au over 50 µ" (1.27 µm) Ni

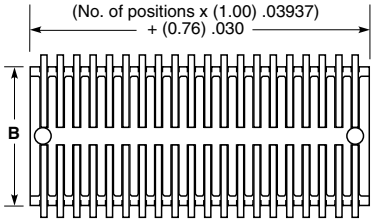
## PROCESSING

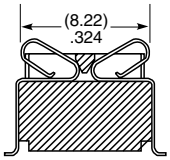
**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (05-30)
(0.15 mm) .006" max (50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)
**Compression Board:**
Gold Pads required

## ALSO AVAILABLE
MOQ Required

No alignment pin
Top side alignment pin
Bottom side alignment pin
Other platings

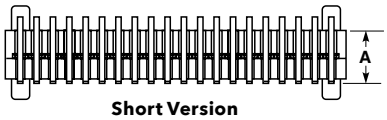
| A-FSI | – | 1 | PINS PER ROW | – | BODY HEIGHT | – | PLATING OPTION | – | ROW OPTION | – | ALIGNMENT OPTION | – | OTHER OPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **05 thru 50**<br>(Multiples of 5) | | **–03**<br>= 3 mm<br>**–06**<br>= 6 mm (Double Row only)<br>**–10**<br>= 10 mm (Double Row only) | | **–L**<br>= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail (Not available with –03 body height)<br>**–S**<br>= 30 µ" (0.76 µm) Gold on contact; Matte Tin on tail | | **–S**<br>= Single Row (Available with 5, 10 & 20 pins with –AD alignment pin)<br>**–D**<br>= Double Row | | Leave blank for no Alignment Pin<br>**–AD**<br>= Alignment Pin Top & Bottom | | **–P**<br>= Plastic Pick & Place Pad (5.08 mm) .200" X (12.45 mm) .490" (Not available with –S row option or –03 body height)<br>**–TR**<br>= Tape & Reel |



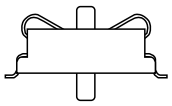




**-06 & -10 Contact Detail**

| BODY HEIGHT | A | B |
|---|---|---|
| –03 | (3.00) .118 | (8.76) .345 |
| –06 | (6.00) .236 | (9.02) .355 |
| –10 | (10.00) .394 | (9.02) .355 |

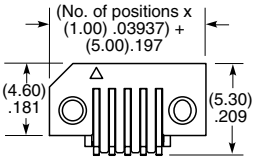


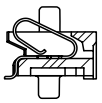

**Short Version**



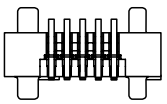
**-03-AD Shown**

**Double Row Version -03, -06, -10**

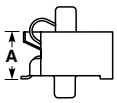


**-03, -06 & -10 Contact Detail**



**Short Version**



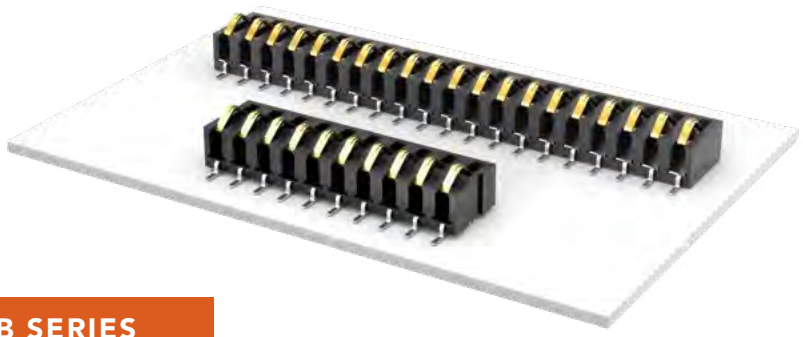

**-03-AD Shown**

**Single Row Version –03, –06, –10**

**Notes:**
Applications requiring 40-50 positions without threaded inserts, please contact Samtec Interconnect Processing Group.

Some lengths, styles and options are non-standard, non-returnable.

# ONE-PIECE INTERFACES



## (2.54 mm) .100" PITCH • A-SIB SERIES

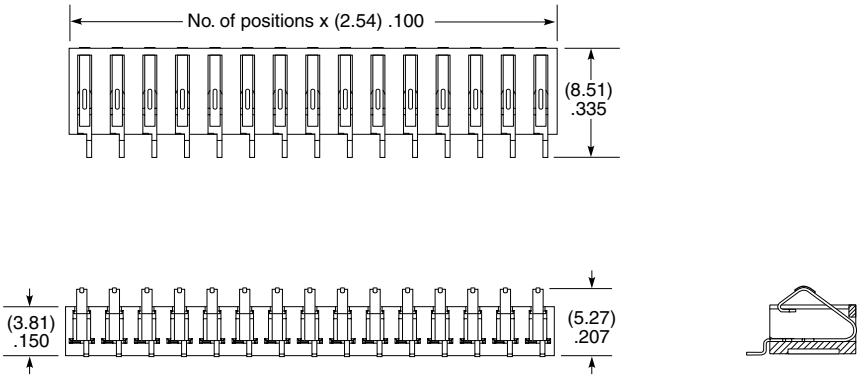
### SPECIFICATIONS

**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating:**
2.6 A per pin
(1 pin powered)
**Operating Temp Range:**
-55 °C to +125 °C

### PROCESSING

**Lead-Free Solderable:**
Yes
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (02-19)
(0.15 mm) .005" max (20-30)*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)

| A-SIB | - | 1 | NO. OF POSITIONS | - | 02 | - | PLATING OPTION | - | S | - | OPTION | - | PACKAGING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **02 thru 30**<br>(Per Row) | | | | **–F**<br>= Gold flash on contact, Matte Tin on tail | | | | **–P**<br>= Pick & Place Pad (Requires –TR; 04-30 Positions only) | | **–TR**<br>= Tape & Reel |




**Notes:**
The A-SIB Series
is intended for vertical
mating only.

Some lengths, styles and
options are non-standard,
non-returnable.

# HIGH-SPEED MICRO PITCH SYSTEM

## (0.50 mm) .0197" PITCH • A-FT5/A-FS5 SERIES

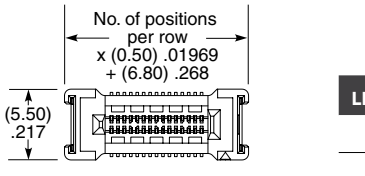
**A-FT5**
**Mates:**
A-FS5

**A-FS5**
**Mates:**
A-FT5

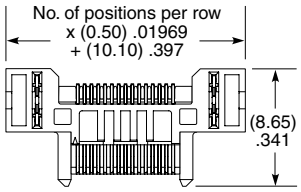
### SPECIFICATIONS

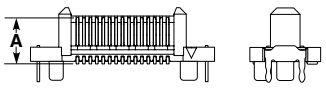
**Insulator Material:**
Black Liquid Crystal Polymer
**Contact Material:**
Phosphor Bronze (A-FT5)
BeCu (A-FS5)
**Weld Tab:**
Phosphor Bronze
**Plating:**
Au or Sn over
50 µ" (1.27 µm) Ni
**Current Rating:**
1.8 A per pin
(2 pins powered)
**Operating Temp Range:**
-55 °C to +125 °C
**Lead-Free Solderable:**
Yes

| A-FT5 | – | NO. OF POSITIONS | – | LEAD STYLE | – | PLATING OPTION | – | ROW OPTION | – | TH | – | OPTION | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –15, –30 (Per Row) | | –01.0 = 1 mm Body Height<br>–03.0 = 3 mm Body Height<br>–01 = Right-angle | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | –DV = Vertical<br>–RA = Right-angle | | Leave blank for –RA<br>–TH = Through-hole weld tab | | Required callouts<br>–P = Pick & Place Pad (–DV only)<br>–K = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad (–RA only) | | –TR = Tape & Reel |

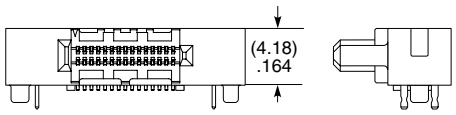



| LEAD STYLE | A |
|---|---|
| –01.0 | (3.72) .146 |
| –03.0 | (5.72) .225 |




–DV OPTION



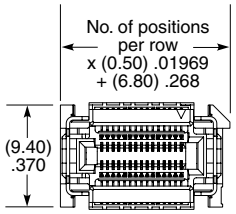

–RA OPTION

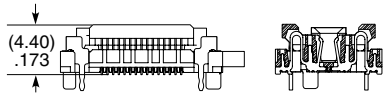
### MATED HEIGHT *

| A-FS5 LEAD STYLE | A-FT5 LEAD STYLE | |
|---|---|---|
| | -01.0 | -03.0 |
| -02.0 | (5.00 mm) .197" | (7.00 mm) .276" |

*Processing conditions will affect mated height.

| A-FS5 | – | NO. OF POSITIONS | – | LEAD STYLE | – | PLATING OPTION | – | DV | – | TH | – | K | – | TR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –15, –30 (Per Row) | | –04.0 = 4 mm Body Height | | –L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail | | | | –TH = Through-hole weld tab | | –K = (8.25 mm) .325" DIA Polyimide Film Pick & Place Pad | | –TR = Tape & Reel |

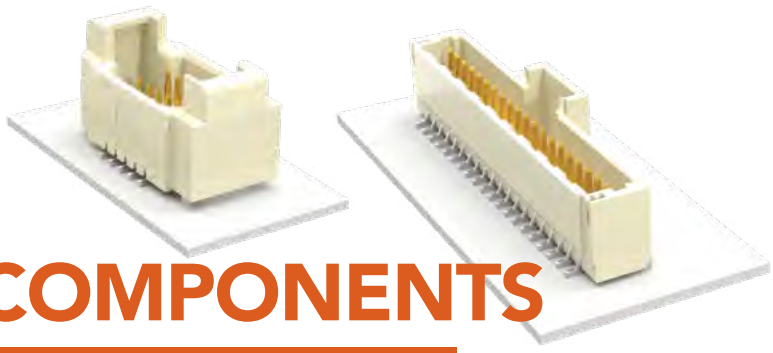



**Notes:**
Contact system provides 0.50 mm float in X and Y directions.

Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.



# DISCRETE WIRE HEADER/CABLE COMPONENTS

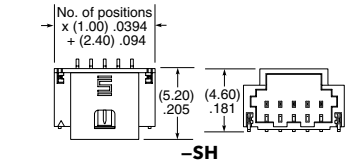
## (1.00 mm) .0394" PITCH • A-T1M, A-ISS1, A-ISD1, A-CC09 SERIES

### SPECIFICATIONS

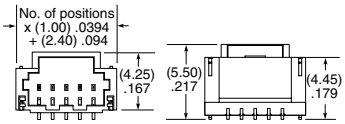
**Insulator Material:**
Natural LCP
**Terminal Material:**
Phosphor Bronze
**Weld Tab:**
Phosphor Bronze
**Plating:**
Au or Sn over
50µ" (1.27 µm) Ni
**Operating Temp Range:**
-55°C to +85°C
**Current Rating:**
3.3 A per pin
(1 pin powered)
**Voltage Rating:**
250 VAC/353 VDC

| A-T1M | – | NO. OF POSITIONS | – | PLATING OPTION | – | ROW OPTION | – | LATCH | – | OPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | –02 thru –20 | | –GF = 3 µ" (0.07 µm) Gold contact and tail (–DH & –DV only)<br>–F = 3 µ" (0.07 µm) Gold on contact, Matte Tin on tail (–SH & –SV only) | | –SH = Single Row Horizontal<br>–SV = Single Row Vertical<br>–DH = Double Row Horizontal<br>–DV = Double Row Vertical | | (Required in callout for –SH & –SV)<br>–L = Positive Latch (–SH & –SV only) | | –K = (4.00 mm) .157" DIA Polyimide Film Pick & Place Pad (–SH & –DV only)<br>–P = Pick & Place Pad (–SV only) |

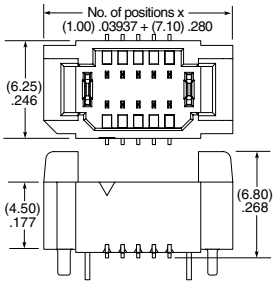
MICROMATE™



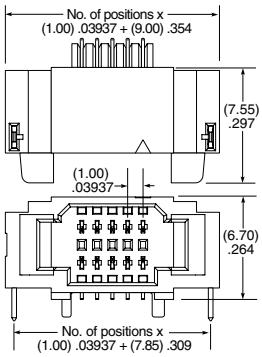
–SH



–SV

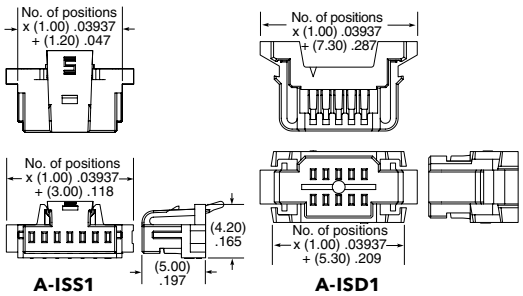


–DV



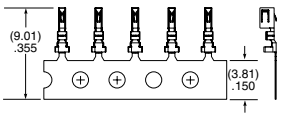
–DH

| SERIES | – | NO. OF POSITIONS | – | LATCH |
|---|---|---|---|---|
| A-ISS1 = Single Row Body<br>A-ISD1 = Double Row Body | | –02 thru –20 | | –L = Positive Latch (Single row only) |



A-ISS1 A-ISD1

| SERIES | – | 01 | – | PLATING |
|---|---|---|---|---|
| A-CC09R = Contact, Full Reel (25,000 Parts per Reel) | | | | –GF = 3 µ" (0.07 µm) Gold contact and tail |



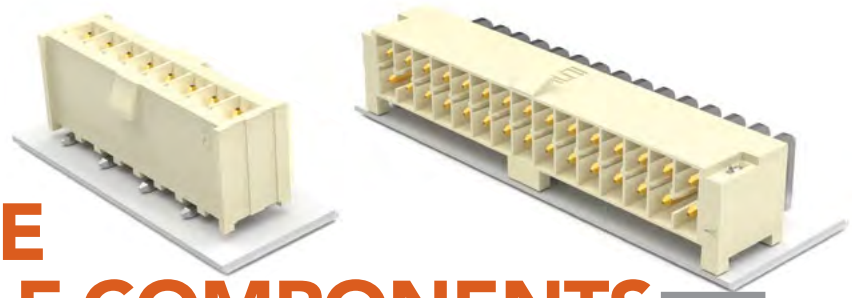

**Contact Material:**
Phosphor Bronze

### TOOLING

| | |
|---|---|
| Hand Tool: CAT-HT-309-2830-12 | Mini Applicator: CAT-MC-309-2830-XX-01 |
| Clamp for mounting hand tool: CAT-HT-MNT-01 | |

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

Due to technical progress, all designs, specifications and components are subject to change without notice.



# DISCRETE WIRE HEADER/CABLE COMPONENTS

MAX 4.8 Amps

## (2.54 mm) .100" PITCH • A-IPL1, A-CC79 SERIES

| A-IPL1 | – 1 | PINS PER ROW | – LEAD STYLE | – PLATING OPTION | – ROW OPTION | – TAIL OPTION | – K | – TR |
|---|---|---|---|---|---|---|---|---|

### SPECIFICATIONS

**Insulator Material:**
Natural LCP
**Terminal Material:**
Phosphor Bronze
**Plating:**
Sn or Au over
50 µ" (1.27 µm) Ni
**Operating Temp Range:**
-55 °C to +125 °C
**Voltage Rating:**
675 VAC/954 VDC

### PROCESSING

**Lead–Free Solderable:**
Yes
**–S & –D (–02 Lead Style)**
**SMT Lead Coplanarity:**
(0.10 mm) .004" max (02-05)
(0.13 mm) .005" max (06-10)*
(0.15 mm) .006" max (11-25)*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)
**–SH SMT Lead Coplanarity:**
(0.15 mm) .006" max (02-25)*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)

**Note:**
Some lengths, styles and options are non-standard, non-returnable.

**02, 03, 04, 05, 06, 08, 10, 12, 15, 16, 20, 25**
(Standard sizes)

**–01**
= Through-hole

**–02**
= Surface Mount

**–L**
= 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail

**–S**
= Single Row

**–SH**
= Single Row Horizontal (–02 lead style only)

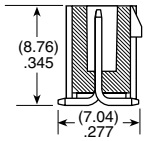
**–D**
= Double Row

**–RA**
=Right-angle (–01 lead style only)

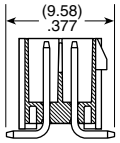
**–RE1**
= Right-angle Elevated (–01 lead style only) (–K is a required callout)

**–K**
=Keyed Polarization

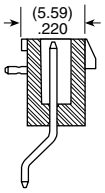
**–TR**
= Tape & Reel (–02 lead style only) Comes with Polyimide Pick & Place Pad



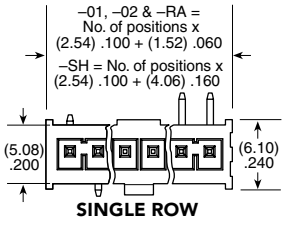
–02–S



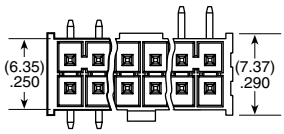
–02–D



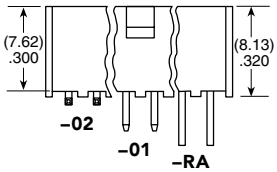
–02–SH



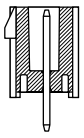
SINGLE ROW

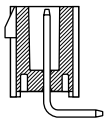


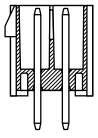
DOUBLE ROW

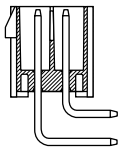


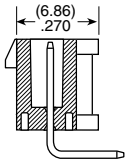
–02 –01 –RA


–01–S

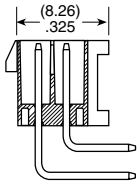

–01–S–RA


–01–D


–01–D–RA



–01–S–RE1



–01–D–RE1

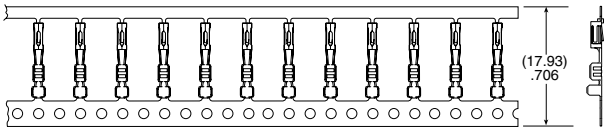
| SERIES | – WIRE GAUGE | – 01 | – PLATING OPTION |
|---|---|---|---|

**A-CC79R**
= Contact, Full Reel
(12,000 Parts per Reel)

**–2630**
= 26 to 30 AWG

**–2024**
= 20 to 24 AWG

**–L**
= 10 µ" (0.25 µm) Gold on contact, Tin on tail




**Note:**
Some lengths, styles and options are non-standard, non-returnable.

### TOOLING

| | |
|---|---|
| Hand Tool: CAT-HT-179-2030-13 (20-30 AWG) | Mini Applicator: CAT-MC-179-2024-XX-01 (20-24 AWG)<br>Mini Applicator: CAT-MC-179-2630 XX-01 (26-30 AWG)<br>Extraction Tool: CAT-EX-179-01 |

Due to technical progress, all designs, specifications and components are subject to change without notice.

# INDEX



## GENERAL POLICY INFORMATION

*Unless otherwise agreed by Samtec in writing, all sales of Samtec products are subject to Samtec's Terms and Conditions of Sale located at* ***https://www.samtec.com/about/legal#samtecterms***

*Federal Supply Code: 55322*

# GLOBAL MANUFACTURING & SUPPORT


samtec
SUDDEN SERVICE®