AUTOMOTIVE SOLUTIONS CATALOG
RUGGED, HIGH-PERFORMANCE INTERCONNECTIONS FOR AUTOMOTIVE APPLICATIONS
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.
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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](http://www.samtec.com/solution-blocks)
ULTRA LOW PROFILE STRIPS
- 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 mPOWERS® 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
- 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 mPOWERS® 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™ 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
- 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
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](http://www.samtec.com/solution-blocks)
HIGH-DENSITY ARRAYS
- 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® 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
- 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
- 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
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.
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.
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](http://www.samtec.com/solution-blocks)
ULTRA LOW PROFILE STRIPS

- 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

- 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
HIGH-SPEED ARRAYS

• 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 full line of JTAG compliant products
RUGGED FEATURES & CUSTOM SOLUTIONS

RUGGEDIZING OPTIONS

**FRICION 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.

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
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

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.
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

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<td>5.1.4.1 Temperature Classification</td>
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<td>5.1.4.2 Sealing Classification</td>
<td>S1 Available</td>
</tr>
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<td>5.1.4.3 Vibration Classification</td>
<td>V1 Available</td>
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<td>5.1.7 Connector and/or Terminal Cycling</td>
<td>Initial Mating/Unmating (25 Cycles)</td>
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<td>5.1.9 Circuit Continuity Monitoring</td>
<td>Continuity Event Detection (Min. 50 ns)</td>
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<td>Mating/Unmating 100 Cycles (Up to 1000+ Cycles on E.L.P.™)</td>
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<td>5.3.1 Dry Circuit Resistance</td>
<td>Contact Resistance (10.1 to 15.0 mΩ)</td>
</tr>
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<td>5.3.2 Voltage Drop</td>
<td>Voltage Drop (Reported at Rated Current)</td>
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<td>5.3.3 Maximum Test Current Capability</td>
<td>Current Rating per Contact (30 °C Rise, 20% De-Rated at 105 °C)</td>
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<td>5.3.4 Current Cycling</td>
<td>500 cycles (125% of Rated Current)</td>
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<td>5.4.2 Connector-Connector Mating/Unmating/Retention/Lock Deflection Forces (non-assist)</td>
<td>Forces Reported for 25, 50, 75 and 100 Cycles</td>
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<td>5.4.6 Vibration/Mechanical Shock</td>
<td>Shock/Vibe (100 G, 6 ms, Sawtooth Wave, 11.3 fps, 3 shocks/direction, 3 axis)</td>
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<tr>
<td>5.5.1 Insulation Resistance</td>
<td>IR (1,000 MΩ minimum at 500 VDC)</td>
</tr>
<tr>
<td>5.6.1 Thermal Shock</td>
<td>100 Cycles, 30 min Dwell, 85 °C to -55 °C, Immediate Transition</td>
</tr>
<tr>
<td>5.6.2 Temperature/Humidity Cycling</td>
<td>Test Temp 25 °C to 65 °C, 90-95% R.H. for 240 hrs (SET Available)</td>
</tr>
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</table>
HIGH-DENSITY OPEN-PIN-FIELD ARRAYS
(1.27 mm) .050" PITCH

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

KEY SPECIFICATIONS

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

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.

Samtec shall only comply with IATF-16949 on products it certifies as Automotive Custom Design “ACD” or on those designated with “A-” Samtec part # prefix. “A-” products are designed to Samtec’s specifications not customers’ specifications. Contact autosalesgroup@samtec.com with questions.
**SERIES**

**LEAD STYLE**

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<th>SERIES</th>
<th>POSITIONS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>NO. OF ROWS</th>
<th>SOLDER TYPE</th>
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<tbody>
<tr>
<td>A-SEAM</td>
<td>Terminal</td>
<td>–10, –15, –20, –30, –40, –50</td>
<td>Specify LEAD STYLE from chart</td>
<td>–L = 10 µ&quot; (0.25 µm) Gold on contact area, Matte Tin on solder tail</td>
<td>–04</td>
<td>–2</td>
<td>= Lead-Free Solder Charge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Socket</td>
<td></td>
<td></td>
<td>–L = 10 µ&quot; (0.25 µm) Gold on contact area, Matte Tin on solder tail</td>
<td>–05</td>
<td>–3</td>
<td>= Alignment Pin</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–10 only available in –04 Row</td>
<td></td>
<td>–L = 10 µ&quot; (0.25 µm) Gold on contact area, Matte Tin on solder tail</td>
<td>–06</td>
<td>–K</td>
<td>= Polyimide Film Pick &amp; Place Pad</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–15 only available in –04 Row with –02.0 Lead Style, and –10 Row with any Lead Style; A-SEAF: –15 only available in –04 or –10 Row with –5.0 Lead Style</td>
<td></td>
<td>–S = 50 µ&quot; (0.76 µm) Gold on contact area, Matte Tin on solder tail</td>
<td>–08</td>
<td>–TR</td>
<td>= Tape &amp; Reel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–10 only available in –04 Row with –02.0 Lead Style</td>
<td></td>
<td>–S = 50 µ&quot; (0.76 µm) Gold on contact area, Matte Tin on solder tail</td>
<td>–10</td>
<td>–S</td>
<td>= 30 µ&quot; (0.76 µm) Gold on solder tail, Matte Tin on contact area</td>
<td></td>
</tr>
</tbody>
</table>

**A-SEAM**

**Board Mates:**

- **A-SEAF**

**A-SEAF**

- **Board Mates:**

  - **A-SEAM**

**MATED HEIGHTS**

<table>
<thead>
<tr>
<th>A-SEAM LEAD STYLE</th>
<th>A-SEAF LEAD STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>-05.0</strong></td>
<td><strong>-06.0</strong></td>
</tr>
<tr>
<td>7 mm</td>
<td>8 mm</td>
</tr>
<tr>
<td>8 mm</td>
<td>9 mm</td>
</tr>
<tr>
<td>8.5 mm</td>
<td>9.5 mm</td>
</tr>
<tr>
<td>11.5 mm</td>
<td>12.5 mm</td>
</tr>
<tr>
<td>12 mm</td>
<td>13 mm</td>
</tr>
<tr>
<td>14 mm</td>
<td>15 mm</td>
</tr>
<tr>
<td>16 mm</td>
<td>17 mm</td>
</tr>
</tbody>
</table>

**STANDARDS**

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

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

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**Due to technical progress, all designs, specifications and components are subject to change without notice.**
ULTRA HIGH-DENSITY, HIGH-SPEED OPEN-PIN-FIELD ARRAYS
(0.80 mm) .0315" PITCH

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

KEY SPECIFICATIONS

<table>
<thead>
<tr>
<th>PITCH</th>
<th>STACK HEIGHTS</th>
<th>TOTAL PINS</th>
<th>INSULATOR MATERIAL</th>
<th>CONTACT MATERIAL</th>
<th>PLATING</th>
<th>CURRENT RATING</th>
<th>LEAD-FREE SOLDERABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.80 mm</td>
<td>7 mm &amp; 10 mm</td>
<td>up to 500 I/Os</td>
<td>Black LCP</td>
<td>Copper Alloy</td>
<td>Au or Sn over 50 μ&quot; (1.27 μm) Ni</td>
<td>1.3 A per pin (10 adjacent pins powered)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

MAXIMUM GROUNDING & ROUTING FLEXIBILITY

Due to technical progress, all designs, specifications and components are subject to change without notice.
### Samtec’s A-SEAM8 and A-SEAF8 Series

#### A-SEAM8
- **Terminal:**
- **A-SEAF8:**

#### A-SEAF8
- **Socket:**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>NO. PINS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>NO. OF ROWS</th>
<th>SOLDER TYPE</th>
<th>OPTION</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-SEAM8</td>
<td>–10, –20, –30, –40, –50</td>
<td>–S02.0</td>
<td>= 2 mm Body Height (A-SEAM8 only)</td>
<td>–04</td>
<td>–GP</td>
<td>–K</td>
<td></td>
</tr>
<tr>
<td>A-SEAF8</td>
<td>–S05.0</td>
<td>= 5 mm Body Height (A-SEAM8 only)</td>
<td>–06</td>
<td>= Guide Post (A-SEAM8 only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>–05.0</td>
<td>= 5 mm Body Height (A-SEAF8 only)</td>
<td>–08</td>
<td>= Polymide film Pick &amp; Place Pad</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Terminal:** A-SEAM8
- **Socket:** A-SEAF8

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

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

#### Mated Heights*

<table>
<thead>
<tr>
<th>A-SEAF8 LEAD STYLE</th>
<th>A-SEAM8 LEAD STYLE</th>
<th>NO. OF ROWS</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>–S02.0</td>
<td>–S05.0</td>
<td>–04</td>
<td>(4.30) .169</td>
<td>(4.54) .179</td>
</tr>
<tr>
<td></td>
<td></td>
<td>–06</td>
<td>(6.30) .248</td>
<td>(7.54) .297</td>
</tr>
<tr>
<td></td>
<td></td>
<td>–08</td>
<td>(8.30) .327</td>
<td></td>
</tr>
</tbody>
</table>

#### Technical Details
- **Pitch:** (0.80 mm) .0315°
- **Ultra High-Density Arrays**
- **Contact Area:** Gold on contact area, Matte Tin on solder tail
- **Solder Type:** Lead-Free Solder Crimp
- **Guide Post (A-SEAM8 only):**
- **Polyimide film Pick & Place Pad (A-SEAM8 only):**

*Processing conditions will affect mated height.

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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

KEY SPECIFICATIONS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>PITCH</th>
<th>STACK HEIGHTS</th>
<th>TOTAL PINS / PAIRS</th>
<th>INSULATOR MATERIAL</th>
<th>TERMINAL MATERIAL</th>
<th>PLATING</th>
<th>OPERATING TEMP RANGE</th>
<th>LEAD-FREE SOLDERABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-ERM8 / A-ERF8</td>
<td>0.80 mm</td>
<td>7.18 mm</td>
<td>10-200</td>
<td>Black LCP</td>
<td>Phosphor Bronze or BeCu (A-ERM8), BeCu (A-ERF8)</td>
<td>Au or Sn over 50 µ&quot; (1.27 µm) Ni</td>
<td>-55 °C to +125 °C</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

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

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

<table>
<thead>
<tr>
<th>TYPE</th>
<th>POSITIONS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>DV</th>
<th>OPTIONS</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-ERF8    = Socket</td>
<td>(100 Position Only Available with A-ERM8–09.0 &amp; A-ERF8–05.0 Lead Styles; –L or –EGP not available)</td>
<td>= 10 μ” (0.25 μm) Gold on contact, Matte Tin on tail</td>
<td>–S</td>
<td>= Differential Pair (A-ERM8–05.0 Lead Style with –010, –013, –025, –049 Positions only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–DS</td>
<td>= –L</td>
<td>= Extended Guide Post (A-ERM8–05.0 and –09.0 Lead Styles only and –L to –EGP Option not available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–L</td>
<td>= –S</td>
<td>= Latching (A-ERM8–05.0 and –09.0 Lead Styles only and –L to –EGP Option not available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–DS</td>
<td>= –L</td>
<td>= –L = Latching (A-ERM8–05.0 and –09.0 Lead Styles only and –L to –EGP Option not available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–K</td>
<td>= –L</td>
<td>= Extended Guide Post (A-ERM8–05.0 Lead Style only and –L Option not available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–EGP</td>
<td>= –L</td>
<td>= Differential Pair with Extended Guide Post (A-ERM8–05.0 Lead Style with –013 and –025 Positions only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>–DSP</td>
<td>= –L</td>
<td>= Polymide Film Pick &amp; Place Pad (–02.0 Lead Style not available)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>A (A-ERM8)</th>
<th>B (A-ERF8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>–02.0</td>
<td>(5.97) .235</td>
<td>N/A</td>
</tr>
<tr>
<td>–05.0</td>
<td>(8.91) .351</td>
<td>(5.10) .200</td>
</tr>
<tr>
<td>–07.0</td>
<td>N/A</td>
<td>(7.00) .276</td>
</tr>
<tr>
<td>–08.0</td>
<td>(11.91) .469</td>
<td>N/A</td>
</tr>
<tr>
<td>–09.0</td>
<td>(12.91) .508</td>
<td>(9.00) .354</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATED HEIGHT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-ERM8 LEAD STYLE</td>
</tr>
<tr>
<td>–05.0</td>
</tr>
<tr>
<td>–02.0</td>
</tr>
<tr>
<td>–05.0</td>
</tr>
<tr>
<td>–08.0</td>
</tr>
<tr>
<td>–09.0</td>
</tr>
</tbody>
</table>

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

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HIGH-SPEED EDGE CARD SYSTEMS
0.80 mm PITCH

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

KEY SPECIFICATIONS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>PITCH</th>
<th>TOTAL POSITIONS</th>
<th>INSULATOR MATERIAL</th>
<th>CONTACT MATERIAL</th>
<th>OPERATING TEMP RANGE</th>
<th>CURRENT RATING</th>
<th>VOLTAGE RATING</th>
<th>LEAD-FREE SOLDERABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-HSEC8</td>
<td>0.80 mm</td>
<td>18-200</td>
<td>Black LCP</td>
<td>BeCu</td>
<td>-55 ℃ to +125 ℃</td>
<td>2.8 A (2 pins)</td>
<td>240 VAC</td>
<td>Yes</td>
</tr>
</tbody>
</table>

(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
-03 = (2.36 mm) .093” thick card
-L = 10 µ” Gold on contact area, Matte Tin on tail
-DV = Tape & Reel (10 - 70 only)
-A = Board Locks (-01 card only)

No. of Positions x (0.80) .0315 + (4.60) .181

A-HSEC8

10, 20 & 30 POSITIONS

40, 50, 60, 70, 80, 100

-01 = (1.60 mm) .062” thick card
-03 = (2.36 mm) .093” thick card
-L = 10 µ” Gold on contact area, Matte Tin on tail

No. of Positions x (0.80) .0315 + (2.20) .087

10, 20 & 30 POSITIONS

A-HSEC8

No. of Positions x (0.80) .0315 + (7.80) .307

40 THRU 100 POSITIONS

No. of Positions x (0.80) .0315 + (4.60) .181

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**A-HSEC8** - 1

<table>
<thead>
<tr>
<th>POSITIONS PER ROW</th>
<th>CARD THICKNESS</th>
<th>PLATING OPTION</th>
<th>RA</th>
<th>OTHER OPTIONS</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>09, 10, 13, 20, 25, 30, 40, 49, 50, 60</td>
<td>10 µ&quot; (0.25 µm) Gold on contact area, Matte Tin on tail</td>
<td>–L = Board Locks (09, 13, 25, 49, 40, 50, 60 only)</td>
<td>–BL = (1.60 mm) .062&quot; thick card</td>
<td>–BL = Board Locks (09, 13, 25, 49, 40, 50, 60 only)</td>
<td>–TR = Tape &amp; Reel</td>
</tr>
</tbody>
</table>

**A-HSEC8-RA**

Card Mates:

- (1.60 mm) .062" card
- 09, 10, 13, 20, 25, 30, 40, 49, 50, 60

**Position Values**

- 09, 10, 13, 20, 25, 30, 40, 49, 50, 60

<table>
<thead>
<tr>
<th>Positions</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>09, 10</td>
<td>2.354</td>
</tr>
<tr>
<td>13</td>
<td>2.650</td>
</tr>
<tr>
<td>20</td>
<td>2.850</td>
</tr>
<tr>
<td>25</td>
<td>3.050</td>
</tr>
<tr>
<td>30</td>
<td>3.250</td>
</tr>
<tr>
<td>40</td>
<td>3.450</td>
</tr>
<tr>
<td>49</td>
<td>3.650</td>
</tr>
<tr>
<td>50</td>
<td>3.850</td>
</tr>
<tr>
<td>60</td>
<td>4.050</td>
</tr>
</tbody>
</table>

**A-HSEC8-PV**

Card Mates:

- (1.60 mm) .062" card
- 20, 30, 40 (Signal positions per row)

**Position Values**

- 20, 30, 40

<table>
<thead>
<tr>
<th>Positions</th>
<th>Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1.894</td>
</tr>
<tr>
<td>30</td>
<td>2.128</td>
</tr>
<tr>
<td>40</td>
<td>2.364</td>
</tr>
</tbody>
</table>

**Signal Positions**

- 20
- 30
- 40

**Power Positions**

- 20
- 30
- 40

<table>
<thead>
<tr>
<th>Power Positions</th>
<th>A (–2)</th>
<th>B (–2)</th>
<th>C (–2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 (32.10)</td>
<td>1.264</td>
<td>15.20</td>
<td>596</td>
</tr>
<tr>
<td>30 (40.10)</td>
<td>1.579</td>
<td>23.20</td>
<td>913</td>
</tr>
<tr>
<td>40 (48.10)</td>
<td>1.894</td>
<td>31.20</td>
<td>1228</td>
</tr>
</tbody>
</table>

**Note:**

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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.

KEY SPECIFICATIONS

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

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A-MEC1
Card Mates:
(1.60 mm) .062" thick card

<table>
<thead>
<tr>
<th>POSITIONS PER ROW</th>
<th>PLATING OPTION</th>
<th>NP</th>
<th>OTHER OPTIONS</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>05, 08, 10, 20, 30, 40, 50, 60, 70</td>
<td>-F = Gold flash on contact, Matte Tin on tail</td>
<td>-A = Alignment Pin plastic at Samtec discretion</td>
<td>-TR = Tape &amp; Reel (05-60 only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-L = 10 µ&quot; (0.25 µm) Gold on contact, Matte Tin on tail</td>
<td>-NP = No Polarization (05, 08, 20 &amp; 30 positions only)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Positions Per Row**

<table>
<thead>
<tr>
<th>Positions Per Row</th>
<th>Polarized Positions (No Contact)</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>3, 4</td>
</tr>
<tr>
<td>08</td>
<td>5, 6</td>
</tr>
<tr>
<td>10</td>
<td>13, 14</td>
</tr>
<tr>
<td>20</td>
<td>15, 16</td>
</tr>
<tr>
<td>30</td>
<td>21, 22</td>
</tr>
<tr>
<td>40</td>
<td>31, 32</td>
</tr>
<tr>
<td>50</td>
<td>41, 42</td>
</tr>
<tr>
<td>60</td>
<td>31, 32, 63, 64</td>
</tr>
<tr>
<td>70</td>
<td>53, 54, 115, 116</td>
</tr>
</tbody>
</table>

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

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samtec.com/Automotive

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A-QTE
Board Mates: A-QSE

A-QSE
Board Mates: A-QTE

**QSTRIP**

**SPECIFICATIONS**

- **Insulator Material:** Liquid Crystal Polymer
- **Contact Material:** Phosphor Bronze
- **Plating:** Au or Sn over 50 µ“ (1.27 µm) Ni
- **Current Rating:** 2 A per pin (2 pins powered)
- **Ground Plane:** 23 A per ground plane (1 ground plane powered)
- **Operating Temp Range:** -35 °C to +125 °C
- **Voltage Rating:** 225 VAC when mated & 5 mm Stack Height
- **Max Cycles:** 100

**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

**OTHER OPTIONS**

- **GP** = Guide Post
- **FL** = Friction Locks
- **TR** = Tape & Reel

**Note:**
Some lengths, styles and options are non-standard, non-returnable.
**A-QRM8**

**Board Mates:**
A-QRF8

**A-QRF8**

**Board Mates:**
A-QRM8

### 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
- **Lead–Free Solderable:** Yes
- **SMT Lead Coplanarity:** 0.30 mm .012" max
  - 0.15 mm .006" max
  - * (.004" stencil solution may be available; contact ipg@samtec.com)
- **Board Stacking:** For applications requiring more than two connectors: contact ipg@samtec.com

### PROCESSING

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

#### 10 YEAR MFG EXTENDED LIFE PRODUC T HIGH MATING CYCLES

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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)

A-LSHM 5 mm STACK HEIGHT
A-LSHM 8 mm STACK HEIGHT
A-LSHM 12 mm STACK HEIGHT
A-LSHM 5 mm STACK HEIGHT

KEY SPECIFICATIONS

<table>
<thead>
<tr>
<th>INSULATOR MATERIAL</th>
<th>CONTACT MATERIAL</th>
<th>PLATING</th>
<th>OPERATING TEMP RANGE</th>
<th>CURRENT RATING</th>
<th>SMT COPLANARITY</th>
<th>LEAD-FREE SOLDERABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black LCP</td>
<td>Phosphor Bronze</td>
<td>Au or Sn over 50 µ&quot; (1.27 µm) Ni</td>
<td>-55 °C to +125 °C</td>
<td>A-LSHM: 2.0 A per pin</td>
<td>(0.10 mm) .004&quot; max</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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### A-LSHM

**Board Mates:** A-LSHM

<table>
<thead>
<tr>
<th>NO. PINS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>TAIL OPTION</th>
<th>SHIELD OPTION</th>
<th>K</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>05, 10, 20, 30, 40, 50</td>
<td>NO. PINS PER ROW</td>
<td>LEAD STYLE</td>
<td>PLATING OPTION</td>
<td>TAIL OPTION</td>
<td>SHIELD OPTION</td>
<td>K</td>
</tr>
<tr>
<td>05, 10, 20, 30, 40, 50</td>
<td>LEAD STYLE (STANDARD)</td>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-02.5</td>
<td>(4.45) .175</td>
<td>(1.59) .0628</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-03.0</td>
<td>(4.45) .175</td>
<td>(1.59) .0628</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-04.0</td>
<td>(4.45) .175</td>
<td>(1.59) .0628</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-06.0</td>
<td>(4.45) .175</td>
<td>(1.59) .0628</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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---

### A-LSS

**Board Mates:** A-LSS

<table>
<thead>
<tr>
<th>NO. PINS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>DV</th>
<th>A</th>
<th>K</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>10, 20, 30, 40, 50</td>
<td>NO. PINS PER ROW</td>
<td>LEAD STYLE</td>
<td>PLATING OPTION</td>
<td>DV</td>
<td>A</td>
<td>K</td>
</tr>
<tr>
<td>10, 20, 30, 40, 50</td>
<td>LEAD STYLE (STANDARD)</td>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-01</td>
<td>(4.45) .175</td>
<td>(1.59) .0628</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-02</td>
<td>(4.45) .175</td>
<td>(1.59) .0628</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-03</td>
<td>(4.45) .175</td>
<td>(1.59) .0628</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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---

*Processing conditions will affect mated height.
**MICRO BLADE & BEAM SOCKET & HEADER**

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

### A-SS4

**Mates:**
- A-ST4

**Positions Per Row**
- -10, -20, -30, -40, -50

**Lead Style**
- -3.00 = 3.00 mm
- -3.50 = 3.50 mm

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

**D**
- (Required in callout)

**K**
- (Required in callout)

**TR**
- = Tape & Reel

### A-ST4

**Mates:**
- A-SS4

**Positions Per Row**
- -10, -20, -30, -40, -50

**Lead Style**
- -1.00 = 1.00 mm
- -1.50 = 1.50 mm
- -2.50 = 2.50 mm

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

**D**
- (Required in callout)

**P**
- (Required in callout)

**TR**
- = Tape & Reel

### 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

### MATED HEIGHT *

<table>
<thead>
<tr>
<th>A-ST4 Lead Style</th>
<th>A-SS4 Lead Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.00 (4.00 mm)</td>
<td>.157&quot;</td>
</tr>
<tr>
<td>-3.50 (4.50 mm)</td>
<td>.177&quot;</td>
</tr>
<tr>
<td>-1.00 (4.50 mm)</td>
<td>.177&quot;</td>
</tr>
<tr>
<td>-1.50 (5.00 mm)</td>
<td>.197&quot;</td>
</tr>
<tr>
<td>-2.50 (5.50 mm)</td>
<td>.217&quot;</td>
</tr>
</tbody>
</table>

*Processing conditions will affect mated height.

---

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---

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### MICRO BLADE & BEAM SOCKET & HEADER

**PAM4 56 Gbps**

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

### 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

### Mated Height

<table>
<thead>
<tr>
<th>A-ST5 Lead Style</th>
<th>A-SS5 Lead Style</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3.00</td>
<td>-3.50</td>
<td>-3.00</td>
<td>0.85</td>
</tr>
<tr>
<td>-3.50</td>
<td>-3.00</td>
<td>-3.50</td>
<td>0.85</td>
</tr>
</tbody>
</table>

*Processing conditions will affect mated height.*

### Also Available

Other lead styles (MOQ Required)

### Note:

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---

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mPOWER®

ULTRA MICRO POWER SYSTEM
(2.00 mm) .0787” PITCH

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

KEY SPECIFICATIONS

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

Selectively loading contacts achieves customer specific creepage and clearance requirements.

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

Terminals shown at 4 positions

CREEPAGE & CLEARANCE

<table>
<thead>
<tr>
<th>A-UMPT/A-UMPS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CREEPAGE</td>
<td>2.20 mm</td>
</tr>
<tr>
<td>CLEARANCE</td>
<td>1.65 mm</td>
</tr>
</tbody>
</table>
**ULTRA MICRO POWER TERMINAL/SOCKET**

**A-UMPT**

<table>
<thead>
<tr>
<th>NO. OF POSITIONS</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>V</th>
<th>S</th>
<th>WELD TAB</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>–02, –03, –04, –05, –06, –07, –08, –09, –10</td>
<td>–01.5 = (01.5 mm) .059&quot;</td>
<td>–L = 10 µ&quot; (0.25 µm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>–02.5 = (02.5 mm) .098&quot;</td>
<td>Gold on contact, Matte Tin on tail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>–06.5 = (06.5 mm) .256&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>–07.5 = (07.5 mm) .295&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>– 12.5 = (12.5 mm) .492&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**A-UMPS**

<table>
<thead>
<tr>
<th>NO. OF POSITIONS</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>V</th>
<th>S</th>
<th>OPTION</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>–02, –03, –04, –05, –06, –07, –08, –09, –10</td>
<td>–03.5 = (03.5 mm) .138&quot;</td>
<td>–L = 10 µ&quot; (0.25 µm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>–05.5 = (05.5 mm) .217&quot;</td>
<td>Gold on contact, Matte Tin on tail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>–07.5 = (07.5 mm) .295&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

---

**mPOWER®**

**A-UMPT**

- NO. OF POSITIONS: –02, –03, –04, –05, –06, –07, –08, –09, –10
- LEAD STYLE: –01.5, –02.5, –06.5, –07.5, –12.5
- PLATING OPTION: –L
- V
- S
- WELD TAB
- TR

**A-UMPS**

- NO. OF POSITIONS: –02, –03, –04, –05, –06, –07, –08, –09, –10
- LEAD STYLE: –03.5, –05.5, –07.5
- PLATING OPTION: –L
- V
- S
- OPTION
- TR

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

---

**mPOWER®**

**A-UMPT-04–01.5–X–V–S–W SHOWN**

**A-UMPS–04–03.5–X–V–S–W SHOWN**

---

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

<table>
<thead>
<tr>
<th>PINS</th>
<th>–T</th>
<th>–L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18.3 A</td>
<td>16.2 A</td>
</tr>
<tr>
<td>2</td>
<td>14.5 A</td>
<td>14.6 A</td>
</tr>
<tr>
<td>3</td>
<td>14.2 A</td>
<td>12.6 A</td>
</tr>
<tr>
<td>5</td>
<td>12.9 A</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>N/A</td>
<td>9.4 A</td>
</tr>
</tbody>
</table>

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

---

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---

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---

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RUGGED TIGER EYE™ SYSTEMS
(1.27 mm) .050" PITCH

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.

KEY SPECIFICATIONS (A-TFM/A-SFM)

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

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

**SERIES** - **1**

A-SFM = Standard  
A-SFML = Locking

**NO. PINS PER ROW**

- 03, 04, 06, 08 (A-SFM only)  
- 05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50 (Standard sizes)

**LEAD STYLE**

- 02 = Surface Mount
- 01, 03 = Through-hole

**PLATING OPTION**

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

**ROW 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)

**OPTION**

- A = Alignment Pin  
- A-SFML = Locking
- S = Single Horizontal (05 thru 30 positions only) (A-SFM only) (Lead style –02 only)
- D = Double Horizontal (05 thru 30 positions only) (A-SFM only) (Lead style –02 only)
- 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, –P) (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

---

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samtec.com/Automotive
**SMT & THROUGH-HOLE TIGER EYE™ HEADER**

(1.27 mm) .050” • A-TFM/A-TFML SERIES

### A-TFM
- **Board Mates:** A-SFM, A-SFMC
- **Series:** 1
- **No. Pins Per Row:** 03, 04, 06, 08 (A-TFM –01 & –02 only)
- **Lead Style:**
  - **A-TFM**: Standard
  - **A-TFML**: Locking (–01 & –02 lead style only)
- **Plating Option:**
  - 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
- **Row Option:** Specify only –RA
- **Options:** Specify only –RA, or –WT Not available with –RA, unless otherwise noted.
  - **–A** = Alignment Pin
  - **–WT** = Weld Tab (A-TFM lead styles –01 and –02 only)
  - **–P** = Plastic Pick & Place Pad (5 positions min.)
  - **–K** = Polyimide Film Pick & Place Pad
  - **–TR** = Tape & Reel

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

#### MATED HEIGHTS*

<table>
<thead>
<tr>
<th>LEAD STYLE (SMT)</th>
<th>MATED HEIGHT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-TFM –02</td>
<td>(6.35) .250</td>
</tr>
<tr>
<td>A-SFM –02</td>
<td>(8.13) .320</td>
</tr>
<tr>
<td>–12</td>
<td>(9.91) .390</td>
</tr>
<tr>
<td>–32</td>
<td>(11.81) .465</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEAD STYLE (T/H)</th>
<th>MATED HEIGHT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-TFM –01</td>
<td>(5.97) .235</td>
</tr>
<tr>
<td>A-SFM –01</td>
<td>(5.97) .235</td>
</tr>
<tr>
<td>–03</td>
<td>(7.75) .305</td>
</tr>
<tr>
<td>–11</td>
<td>(7.75) .305</td>
</tr>
<tr>
<td>–13</td>
<td>(9.53) .375</td>
</tr>
<tr>
<td>–21</td>
<td>(9.53) .375</td>
</tr>
<tr>
<td>–23</td>
<td>(11.43) .450</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEAD STYLE (SMT)</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>–02</td>
<td>(5.72) .225</td>
</tr>
<tr>
<td>–12*</td>
<td>(7.45) .295</td>
</tr>
<tr>
<td>–22*</td>
<td>(9.27) .365</td>
</tr>
<tr>
<td>–32*</td>
<td>(11.18) .440</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEAD STYLE (T/H)</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>–01</td>
<td>(5.59) .220</td>
<td>(1.97) .078</td>
</tr>
<tr>
<td>–03</td>
<td>(5.59) .220</td>
<td>(2.77) .109</td>
</tr>
<tr>
<td>–11*</td>
<td>(7.45) .295</td>
<td>(1.97) .078</td>
</tr>
<tr>
<td>–13*</td>
<td>(7.45) .295</td>
<td>(2.77) .109</td>
</tr>
<tr>
<td>–21*</td>
<td>(9.27) .365</td>
<td>(1.97) .078</td>
</tr>
<tr>
<td>–23*</td>
<td>(9.27) .365</td>
<td>(2.77) .109</td>
</tr>
</tbody>
</table>

*Processing conditions will affect mated height.

---

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

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---

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FLEXIBLE PIN COUNT
TIGER EYE™ SOCKET

(1.27 mm) .050” PITCH • A-SFMC SERIES

A-SFMC
Board Mates:
A-TFM

TIGER™
EYE
SYSTEM

A-SFMC options:
-01, -03 = Through-hole
-02 = Surface Mount

LEAD STYLE
PLATING OPTION
D
OPTIONS

-02 thru 50
-01
-03
-L
-K
-P
-TR

-01, -03 = Through-hole
-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.)
-P = Plastic Pick & Place Pad (5 positions min.)
-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)*
*0.004” stencil solution may be available; contact ipg@samtec.com

ALSO AVAILABLE

<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>-01</td>
<td>(3.05) .120</td>
<td>(0.51) .020</td>
</tr>
<tr>
<td>-03</td>
<td>(1.91) .075</td>
<td>(0.41) .016</td>
</tr>
</tbody>
</table>

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RUGGED TIGER EYE™ SYSTEMS
(2.00 mm) .0787" PITCH

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

KEY SPECIFICATIONS (A-S2M/A-T2M)

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

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### A-S2M

**Series:** A-S2M  
**Socket**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>NO. OF POSITIONS</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>OPTIONS</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-S2M</td>
<td>05, 07, 10, 15, 20, 25, 30 (Per Row)</td>
<td>-01 = Through-hole &lt;br&gt;-02 = Surface Mount</td>
<td>-L = 10 μ&quot; (0.25 μm) Gold on contact, Matte Tin on tail</td>
<td>-K = (5.50 mm) .217&quot; DIA Polyimide film Pick &amp; Place Pad (~02 only)</td>
<td>Leave blank for tube packaging</td>
</tr>
</tbody>
</table>

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

#### A-S2M Board Mates:

**A-T2M**

#### A-T2M

**Header**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>NO. OF POSITIONS</th>
<th>PLATING OPTION</th>
<th>TAIL OPTION</th>
<th>OTHER OPTIONS</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-T2M</td>
<td>05, 07, 10, 15, 20, 25, 30 (Per Row)</td>
<td>-L = 10 μ&quot; (0.25 μm) Gold on contact, Matte Tin on tail</td>
<td>-TH = Through-hole &lt;br&gt;-RA = Right-angle &lt;br&gt;-SM = Surface Mount</td>
<td>-WT = Weld Tab &lt;br&gt;-K = (7.50 mm) .295&quot; DIA Polyimide film Pick &amp; Place Pad (~SM only)</td>
<td>Leave blank for tube packaging</td>
</tr>
</tbody>
</table>

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

#### A-T2M Board Mates:

**A-S2M**

---

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---

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---

IATF16949 CERTIFIED

ACD

samtec.com/Automotive
LOW-PROFILE SMT HEADER
(2.00 mm) .0787" PITCH • A-TMM SERIES

A-TMM
Board Mates:

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 (MQQ 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.

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THROUGH-HOLE LOW-PROFILE HEADER

(2.00 mm) .0787” PITCH • A-TMM SERIES

A-TMM
Board Mates:

<table>
<thead>
<tr>
<th>A-TMM</th>
<th>1 NO. PINS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>OTHER OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 thru 50</td>
<td>Specify LEAD STYLE from chart</td>
<td>–L = 10 µ” (0.25 µm) Gold on post, Matte Tin on tail</td>
<td>–S = Single Row</td>
<td>–D = Double Row</td>
<td>–RA &amp; –RE = Right-angle (Lead Style –01 only) (2 positions minimum)</td>
</tr>
</tbody>
</table>

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer

Terminal Material:
Phosphor Bronze

Plating:
5n 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 | (3.20) .126 | (3.50) .138
–02 | (8.20) .323 | (3.70) .146 | (3.00) .118
–03 | (5.69) .224 | (4.00) .158 | (2.70) .106
–04 | (5.43) .214 | (1.65) .065
–05 | (9.58) .377 | (3.20) .126 | (4.88) .192

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.

samtec.com/Automotive
**HIGH RELIABILITY SOCKET STRIPS**

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

### 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)

---

**Note:**
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---

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# SMT MICRO TERMINAL STRIPS

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

---

## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Insulator Material:</th>
<th>Black Liquid Crystal Polymer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal Material:</td>
<td>Phosphor Bronze</td>
</tr>
<tr>
<td>Plating:</td>
<td>Sn or Au over 50 μ&quot; (1.27 μm) Ni</td>
</tr>
<tr>
<td>Current Rating</td>
<td>2.8 A per pin (2 pins powered)</td>
</tr>
<tr>
<td>Operating Temp Range:</td>
<td>-55 °C to +125 °C</td>
</tr>
</tbody>
</table>

## PROCESSING

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

## ALSO AVAILABLE

**MOQ Required**

Other platings

---

**Note:**

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

---

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**samtec.com/Automotive**

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SURFACE MOUNT MICRO HEADER
(1.27 mm) .050” PITCH • A-FTSH SERIES

A-FTSH
Board Mates:
A-CLP

NO. PINS PER ROW
LEAD STYLE
PLATING OPTION
TAIL OPTION
OTHER OPTIONS

02 thru 50
-01
-02
-03
-04
-05

0.120” Post
0.075” Post
0.065” Post
0.150” Post
0.170” Post

L = 10 µ”
(D0.25 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
(Mates with A-CLP–D):
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

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

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

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

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## MICRO BOARD STACKER

(1.27 mm) .050" PITCH • A-FW SERIES

### A-FW

| Board Mates: | A-CLP |

### FLEX STACK

### 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 |

### 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) |

### MATED HEIGHT

<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>STACKER HEIGHT</th>
<th>STACKER + POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-FW-XX-03-X-X-233-065</td>
<td>8.13 mm) .329&quot;</td>
<td>(2.51) .99</td>
</tr>
<tr>
<td>A-FW-XX-03-X-X-303-065</td>
<td>9.91 mm) .390&quot;</td>
<td>(2.51) .99</td>
</tr>
</tbody>
</table>

*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.

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## LOW-PROFILE DUAL WIPE SOCKET

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

### A-CLP

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

### 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" minimum

**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)*

*0.004" stencil solution may be available; contact ipg@samtec.com

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

---

### Also Available

- MOQ Required

- Single row
- Other platings

---

### Extended Life Product

10 YEAR MFG EXTENDED LIFE PRODUC T HIGH MATING CYCLES

---

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---

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---

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### HORIZONTAL & MODIFIED HEADERS

**A-MMT/A-MTMM Series**

**Board Mates:**

*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) .040" max
- **Stenciling:** (.004" stencil solution may be available; contact ipg@samtec.com)

**Also Available**

- **Molded Alignment Pin (-A)**
- **Other Platings (MOQ Required)**

---

### A-MMT - 1 NO. PINS PER ROW LEAD STYLE PLATING OPTION ROW OPTION POST HEIGHT

<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>OAL</th>
<th>NO. OF POSITIONS</th>
<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>POST HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>-02</td>
<td>(1.20) .255</td>
<td>1</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-03</td>
<td>(2.67) .302</td>
<td>2</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-04</td>
<td>(5.8) .332</td>
<td>4</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-05</td>
<td>(10.08) .397</td>
<td>5</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-06</td>
<td>(11.58) .456</td>
<td>6</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-07</td>
<td>(12.09) .476</td>
<td>7</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-08</td>
<td>(13.59) .535</td>
<td>8</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-09</td>
<td>(14.10) .555</td>
<td>9</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-10</td>
<td>(15.09) .594</td>
<td>10</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
<tr>
<td>-11</td>
<td>(15.60) .614</td>
<td>11</td>
<td>-L</td>
<td>-S</td>
<td>(0.00) .000 MIN</td>
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<tr>
<td>-12</td>
<td>(17.09) .673</td>
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<td>-S</td>
<td>(0.00) .000 MIN</td>
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<tr>
<td>-13</td>
<td>(19.08) .751</td>
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<tr>
<td>-14</td>
<td>(21.08) .830</td>
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<td>-S</td>
<td>(0.00) .000 MIN</td>
</tr>
</tbody>
</table>

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

---

**Also Available**

- **MOQ Required**

---

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FLEXIBLE SMT HEADER

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

A-TMMH
Board Mates:

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

ALSO AVAILABLE

Other Platings
(MOQ Required)

Note:
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10 YEAR MFG EXTENDED LIFE PRODUCT HIGH MATING CYCLES

LEAD STYLE A MATES WITH

<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>A</th>
<th>MATES WITH</th>
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<tbody>
<tr>
<td>04</td>
<td>(1.91) .075</td>
<td>A-CLT</td>
</tr>
<tr>
<td>05</td>
<td>(1.65) .065</td>
<td></td>
</tr>
</tbody>
</table>
### FLEXIBLE THROUGH-HOLE HEADER

**A-TMMH**

### 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

<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tr>
<td>-01</td>
<td>7.67</td>
<td>3.20</td>
<td>2.46</td>
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<td>-04</td>
<td>6.45</td>
<td>1.91</td>
<td>2.57</td>
</tr>
<tr>
<td>-05</td>
<td>6.45</td>
<td>1.65</td>
<td>2.29</td>
</tr>
</tbody>
</table>

### PLATING OPTIONS
- **-L:** 10 µ" (0.25 µm) Gold on post, Matte Tin on tail
- **-T:** Matte Tin
- **-D:** Double Row
- **-RA:** Right-angle

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**SMT & THROUGH-HOLE BOARD STACKERS**

(2.00 mm) .0787" PITCH • A-TW SERIES

### A-TW Board Mates:

#### 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
- **Lead–Free Solderable:** Yes
- **SMT Lead Coplanarity:** (4.00) .1574
- **Stacker Height Option:**
  - –S (5.08) .200
  - –D (6.35) .250
- **Notes:**
  - For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors.
  - End shrouds with or without guide post may be available; contact ipg@samtec.com

### A-TW - NO. PINS PER ROW - LEAD STYLE - PLATING OPTION - ROW OPTION - STACKER HEIGHT - SM - OTHER OPTION

#### A-TW CATALOG

<table>
<thead>
<tr>
<th>No. Pins</th>
<th>Lead Style</th>
<th>Plating Option</th>
<th>Row Option</th>
<th>Stack Height</th>
<th>SM Options</th>
<th>Other Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 thru 36</td>
<td>–L = 10 µ&quot; (0.25 µm) Gold on post, Matte Tin on tail</td>
<td>–S = Single Row</td>
<td>–T = Matte Tin</td>
<td>–”XXX” = Stacker Height in inches (4.32 mm) .170” min. .005” increments</td>
<td>Example: -250 (6.35 mm) .250”</td>
<td>–A = Alignment Pin (Plastic at Samtec discretion) (4.83 mm) .190” min. board space (!-D only)</td>
</tr>
<tr>
<td>2 thru 50</td>
<td>–L = 10 µ&quot; (0.25 µm) Gold on post, Matte Tin on tail</td>
<td>–D = Double Row</td>
<td>–T = Matte Tin</td>
<td>–”XXX” = Stacker Height in inches (4.32 mm) .170” min. .005” increments</td>
<td></td>
<td>–P = Pick &amp; Place Pad (1.91 mm) .075” min. post height (04-36 only)</td>
</tr>
</tbody>
</table>

### ALSO AVAILABLE

MOQ Required

- Other Platings
- End shrouds with or without guide post

**PROCESSING**

- **LEAD–FREE SOLDERABLE:** Yes
- **SMT Lead Coplanarity:** (0.15 mm) .006” max.
- **.004” stencil solution may be available; contact ipg@samtec.com**

**Notes:**
- For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors.
- End shrouds with or without guide post may be available; contact ipg@samtec.com for more information.

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<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>OAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>–L</td>
<td>(2.00) .0787</td>
</tr>
<tr>
<td>–D</td>
<td>(2.00) .0787</td>
</tr>
<tr>
<td>–T</td>
<td>(4.00) .1574</td>
</tr>
</tbody>
</table>

*–L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail;
  –D = Double Row;
  –T = Matte Tin

<table>
<thead>
<tr>
<th>NO. OF ROWS</th>
<th>OAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>–L</td>
<td>(4.00) .170 MIN</td>
</tr>
<tr>
<td>–D</td>
<td>(4.00) .170 MIN</td>
</tr>
<tr>
<td>–T</td>
<td>(4.00) .1574</td>
</tr>
</tbody>
</table>

**Also Available**

MOQ Required

- Other Platings
- End shrouds with or without guide post

**Notes:**
- For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors.
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</tr>
<tr>
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<td>(4.00) .1574</td>
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  –T = Matte Tin

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<tr>
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<td>(4.00) .170 MIN</td>
</tr>
<tr>
<td>–T</td>
<td>(4.00) .1574</td>
</tr>
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</table>

**Also Available**

MOQ Required

- Other Platings
- End shrouds with or without guide post

**Notes:**
- For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors.
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<td>(4.00) .1574</td>
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</tbody>
</table>

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

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<th>OAL</th>
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</tr>
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<td>(4.00) .170 MIN</td>
</tr>
<tr>
<td>–T</td>
<td>(4.00) .1574</td>
</tr>
</tbody>
</table>

**Also Available**

MOQ Required

- Other Platings
- End shrouds with or without guide post

**Notes:**
- For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors.
- End shrouds with or without guide post may be available; contact ipg@samtec.com

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</tr>
<tr>
<td>–D</td>
<td>(2.00) .0787</td>
</tr>
<tr>
<td>–T</td>
<td>(4.00) .1574</td>
</tr>
</tbody>
</table>

*–L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail;
  –D = Double Row;
  –T = Matte Tin

<table>
<thead>
<tr>
<th>NO. OF ROWS</th>
<th>OAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>–L</td>
<td>(4.00) .170 MIN</td>
</tr>
<tr>
<td>–D</td>
<td>(4.00) .170 MIN</td>
</tr>
<tr>
<td>–T</td>
<td>(4.00) .1574</td>
</tr>
</tbody>
</table>

**Also Available**

MOQ Required

- Other Platings
- End shrouds with or without guide post

**Notes:**
- For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors.
- End shrouds with or without guide post may be available; contact ipg@samtec.com

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**FLEXIBLE ELEVATED SOCKET STRIPS**

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

<table>
<thead>
<tr>
<th>A-ESQT</th>
<th>NO. PINS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>BODY HEIGHT</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Specified from chart</td>
<td>–L</td>
<td>= 10 µ&quot; (0.25 µm) Gold on contact, Matte Tin on tail</td>
<td>–S</td>
<td>= Single Row</td>
</tr>
<tr>
<td></td>
<td>02 thru 50</td>
<td>–D</td>
<td>= Double Row</td>
<td>–T</td>
<td>= Triple Row</td>
</tr>
<tr>
<td></td>
<td>–&quot;XXX&quot;</td>
<td>= Body Height (in inches)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Insulator Material:** Black Liquid Crystal Polymer
- **Contact Material:** Phosphor Bronze
- **Current Rating:** 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)

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

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COST-EFFECTIVE RUGGED SOCKETS

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

A-SQW/A-SQT
Board Mates:

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-TMNH): 3.8 A per pin (2 pins powered)

A-SQT Current Rating
(A-SQT/A-TMNH): 5.1 A per pin (2 pins powered)

Voltage Rating:
281 VAC mated with A-TMM; 250 VAC mated with A-TMNH

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 (11-20)* (0.044" stencil solution may be available; contact ipg@samtec.com)

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

---

<table>
<thead>
<tr>
<th>A-SQW</th>
<th>1</th>
<th>NO. PINS PER ROW</th>
<th>01</th>
<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>OPTION</th>
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<tbody>
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<td></td>
<td></td>
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<td>-L</td>
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<td>-D-VS</td>
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<table>
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<th>1</th>
<th>NO. PINS PER ROW</th>
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<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>OTHER OPTION</th>
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</tbody>
</table>

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samtec.com/Automotive
**TIGER CLAW™ SOCKET STRIP**  
(2.00 mm) .0787” PITCH • A-MMS SERIES

---

**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” minimum or pass-through
- 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:**

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---

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**samtec.com/Automotive**

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### A-CLT

**Mates:**

#### NO. PINS PER ROW
- 02 thru 50

#### LEAD STYLE
- **02** = Surface Mount

#### PLATING OPTION
- **-L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail

#### OTHER OPTIONS
- All options require Style **02**
  - **-BE** = Bottom Entry (Required for bottom entry applications)
  - **-A** = Alignment Pin (3 positions minimum)
  - **-K** = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad (04 thru 50 only)
  - **-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:** 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) .005" max (26-34)*
  - (0.20 mm) .008" max (35-50)*
  - *0.004" stencil solution may be available; contact ipg@samtec.com

### ALSO AVAILABLE

**COST-EFFECTIVE & DUAL WIPE SOCKETS**

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

**ALSO AVAILABLE**

- **-A Option**

**IATF16949 CERTIFIED AUTOMOTIVE DESIGN**

Samtec shall only comply with IATF-16949 on products it certifies as Automotive Custom Design “ACD” or on those designated with “A-” Samtec part # prefix. “A-” products are designed to Samtec’s specifications not customers’ specifications. Contact autosalesgroup@samtec.com with questions.

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

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MODIFIED .025" SQ POST HEADERS

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

FLEX STACK

SPECIFICATIONS

| LEAD STYLE | A | B | C
|---|---|---|
| – 06 | (2.54 mm) .100" Pitch | – 06 | (2.54 mm) .100"
| – 07 | (2.54 mm) .100" | – 07 | (2.54 mm) .100"
| – 08 | (2.54 mm) .100" | – 08 | (2.54 mm) .100"
| – 09 | (2.54 mm) .100" | – 09 | (2.54 mm) .100"
| – 10 | (2.54 mm) .100" | – 10 | (2.54 mm) .100"
| – 11 | (2.54 mm) .100" | – 11 | (2.54 mm) .100"
| – 12 | (2.54 mm) .100" | – 12 | (2.54 mm) .100"
| – 13 | (2.54 mm) .100" | – 13 | (2.54 mm) .100"
| – 14 | (2.54 mm) .100" | – 14 | (2.54 mm) .100"
| – 15 | (2.54 mm) .100" | – 15 | (2.54 mm) .100"
| – 16 | (2.54 mm) .100" | – 16 | (2.54 mm) .100"
| – 17 | (2.54 mm) .100" | – 17 | (2.54 mm) .100"
| – 18 | (2.54 mm) .100" | – 18 | (2.54 mm) .100"
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| – 20 | (2.54 mm) .100" | – 20 | (2.54 mm) .100"
| – 21 | (2.54 mm) .100" | – 21 | (2.54 mm) .100"
| – 22 | (2.54 mm) .100" | – 22 | (2.54 mm) .100"
| – 23 | (2.54 mm) .100" | – 23 | (2.54 mm) .100"
| – 24 | (2.54 mm) .100" | – 24 | (2.54 mm) .100"
| – 25 | (2.54 mm) .100" | – 25 | (2.54 mm) .100"
| – 26 | (2.54 mm) .100" | – 26 | (2.54 mm) .100"
| – 27 | (2.54 mm) .100" | – 27 | (2.54 mm) .100"
| – 28 | (2.54 mm) .100" | – 28 | (2.54 mm) .100"

STRAIGHT PIN VERSIONS

| LEAD STYLE | A | B | C
|---|---|---|---|
| – 06 | (2.54 mm) .100" Pitch | – 06 | (2.54 mm) .100"
| – 07 | (2.54 mm) .100" | – 07 | (2.54 mm) .100"
| – 08 | (2.54 mm) .100" | – 08 | (2.54 mm) .100"
| – 09 | (2.54 mm) .100" | – 09 | (2.54 mm) .100"
| – 10 | (2.54 mm) .100" | – 10 | (2.54 mm) .100"
| – 11 | (2.54 mm) .100" | – 11 | (2.54 mm) .100"
| – 12 | (2.54 mm) .100" | – 12 | (2.54 mm) .100"
| – 13 | (2.54 mm) .100" | – 13 | (2.54 mm) .100"
| – 14 | (2.54 mm) .100" | – 14 | (2.54 mm) .100"
| – 15 | (2.54 mm) .100" | – 15 | (2.54 mm) .100"
| – 16 | (2.54 mm) .100" | – 16 | (2.54 mm) .100"
| – 17 | (2.54 mm) .100" | – 17 | (2.54 mm) .100"
| – 18 | (2.54 mm) .100" | – 18 | (2.54 mm) .100"
| – 19 | (2.54 mm) .100" | – 19 | (2.54 mm) .100"
| – 20 | (2.54 mm) .100" | – 20 | (2.54 mm) .100"
| – 21 | (2.54 mm) .100" | – 21 | (2.54 mm) .100"
| – 22 | (2.54 mm) .100" | – 22 | (2.54 mm) .100"
| – 23 | (2.54 mm) .100" | – 23 | (2.54 mm) .100"
| – 24 | (2.54 mm) .100" | – 24 | (2.54 mm) .100"
| – 25 | (2.54 mm) .100" | – 25 | (2.54 mm) .100"
| – 26 | (2.54 mm) .100" | – 26 | (2.54 mm) .100"
| – 27 | (2.54 mm) .100" | – 27 | (2.54 mm) .100"
| – 28 | (2.54 mm) .100" | – 28 | (2.54 mm) .100"

RIGHT-ANGLE PIN VERSIONS

| LEAD STYLE | A | B | C
|---|---|---|---|
| – 06 | (2.54 mm) .100" Pitch | – 06 | (2.54 mm) .100"
| – 07 | (2.54 mm) .100" | – 07 | (2.54 mm) .100"
| – 08 | (2.54 mm) .100" | – 08 | (2.54 mm) .100"
| – 09 | (2.54 mm) .100" | – 09 | (2.54 mm) .100"
| – 10 | (2.54 mm) .100" | – 10 | (2.54 mm) .100"
| – 11 | (2.54 mm) .100" | – 11 | (2.54 mm) .100"
| – 12 | (2.54 mm) .100" | – 12 | (2.54 mm) .100"
| – 13 | (2.54 mm) .100" | – 13 | (2.54 mm) .100"
| – 14 | (2.54 mm) .100" | – 14 | (2.54 mm) .100"
| – 15 | (2.54 mm) .100" | – 15 | (2.54 mm) .100"
| – 16 | (2.54 mm) .100" | – 16 | (2.54 mm) .100"
| – 17 | (2.54 mm) .100" | – 17 | (2.54 mm) .100"
| – 18 | (2.54 mm) .100" | – 18 | (2.54 mm) .100"
| – 19 | (2.54 mm) .100" | – 19 | (2.54 mm) .100"
| – 20 | (2.54 mm) .100" | – 20 | (2.54 mm) .100"
| – 21 | (2.54 mm) .100" | – 21 | (2.54 mm) .100"
| – 22 | (2.54 mm) .100" | – 22 | (2.54 mm) .100"
| – 23 | (2.54 mm) .100" | – 23 | (2.54 mm) .100"
| – 24 | (2.54 mm) .100" | – 24 | (2.54 mm) .100"
| – 25 | (2.54 mm) .100" | – 25 | (2.54 mm) .100"
| – 26 | (2.54 mm) .100" | – 26 | (2.54 mm) .100"
| – 27 | (2.54 mm) .100" | – 27 | (2.54 mm) .100"
| – 28 | (2.54 mm) .100" | – 28 | (2.54 mm) .100"

Note: These Series are non-standard, non-returnable.
# Samtec Automotive Series

## Series Information

**A-TSW, A-HTSW**

- **Board Mates:**

## 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)

<table>
<thead>
<tr>
<th>Product</th>
<th>A-SSW</th>
<th>A-SSQ</th>
<th>A-SSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-TSW mated</td>
<td>5.7 A</td>
<td>6.3 A</td>
<td>5.2 A</td>
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</table>

**2 Positions Powered**

## Also Available

Other Platings (MOQ Required)

## Straight Pin Versions

### Lead Style -S

<table>
<thead>
<tr>
<th>LEAD STYLE</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>-05</td>
<td>(8.51)</td>
<td>335</td>
<td>(3.30)</td>
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<td>-06</td>
<td>(7.62)</td>
<td>300</td>
<td>(2.41)</td>
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<td>-07</td>
<td>(10.92)</td>
<td>430</td>
<td>(2.54)</td>
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<tr>
<td>-08</td>
<td>(13.46)</td>
<td>530</td>
<td>(5.08)</td>
</tr>
<tr>
<td>-09</td>
<td>(18.54)</td>
<td>730</td>
<td>(10.16)</td>
</tr>
<tr>
<td>-10</td>
<td>(21.08)</td>
<td>830</td>
<td>(12.70)</td>
</tr>
<tr>
<td>-11</td>
<td>(23.62)</td>
<td>930</td>
<td>(15.24)</td>
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<tr>
<td>-12</td>
<td>(26.16)</td>
<td>1.030</td>
<td>(17.78)</td>
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<tr>
<td>-13</td>
<td>(31.24)</td>
<td>1.230</td>
<td>(22.86)</td>
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<td>-14</td>
<td>(13.46)</td>
<td>530</td>
<td>(2.79)</td>
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<td>-15</td>
<td>(18.54)</td>
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<td>-16</td>
<td>(21.08)</td>
<td>830</td>
<td>(2.79)</td>
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### Lead Style -D

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<th>B</th>
<th>C</th>
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<td>-19</td>
<td>(26.16)</td>
<td>1.030</td>
<td>(2.79)</td>
</tr>
<tr>
<td>-20</td>
<td>(31.24)</td>
<td>1.230</td>
<td></td>
</tr>
<tr>
<td>-21</td>
<td>(36.32)</td>
<td>1.430</td>
<td>(2.79)</td>
</tr>
<tr>
<td>-22</td>
<td>(16.00)</td>
<td>430</td>
<td>(7.62)</td>
</tr>
<tr>
<td>-23</td>
<td>(11.30)</td>
<td>445</td>
<td></td>
</tr>
<tr>
<td>-24</td>
<td>(12.15)</td>
<td>480</td>
<td>(2.92)</td>
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<td>(16.00)</td>
<td>430</td>
<td>(5.33)</td>
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<td>-26</td>
<td>(11.58)</td>
<td>456</td>
<td>(3.20)</td>
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<td>-27</td>
<td>(33.78)</td>
<td>1.330</td>
<td>(25.40)</td>
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<td>-28</td>
<td>(26.70)</td>
<td>1.130</td>
<td>(20.32)</td>
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<td>(26.70)</td>
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<td>(18.03)</td>
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<td>(0.89)</td>
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<td>-32</td>
<td>(11.94)</td>
<td>470</td>
<td>(1.27)</td>
</tr>
</tbody>
</table>

### Lead Style -T

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

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**Note:**

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

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“A-” products are designed to Samtec’s specifications not customers’ specifications. Contact autosalesgroup@samtec.com with questions.
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
- 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

<table>
<thead>
<tr>
<th>RE</th>
<th>LEAD STYLE</th>
<th>C</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>-RA</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-RA</td>
<td>(1.52) 060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-RE</td>
<td>(4.06) 160</td>
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<td></td>
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LEAD STYLE D

<table>
<thead>
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<th>LEAD STYLE</th>
<th>D</th>
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</thead>
<tbody>
<tr>
<td>-RA</td>
<td>(1.52) 060</td>
</tr>
<tr>
<td>-RE</td>
<td>(4.06) 160</td>
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RIGHT-ANGLE VERSIONS

<table>
<thead>
<tr>
<th>RE</th>
<th>LEAD STYLE</th>
<th>SINGLE (-S)</th>
<th>DOUBLE (-D)</th>
<th>TRIPLE (-T &amp; -Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-08</td>
<td>(5.84) 230</td>
<td>(2.29) 090</td>
<td>(2.29) 090</td>
<td>(2.29) 090</td>
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<tr>
<td>-09</td>
<td>(7.37) 290</td>
<td>(7.37) 290</td>
<td>(7.37) 290</td>
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<tr>
<td>-10</td>
<td>(9.91) 390</td>
<td>(9.91) 390</td>
<td>(9.91) 390</td>
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<td>-11</td>
<td>(12.45) 490</td>
<td>(12.45) 490</td>
<td>(12.45) 490</td>
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<td>-12</td>
<td>(14.99) 590</td>
<td>(14.99) 590</td>
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<tr>
<td>-13</td>
<td>(20.07) 790</td>
<td>(20.07) 790</td>
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<tr>
<td>-16</td>
<td>(8.13) 320</td>
<td>(5.08) 200</td>
<td>(5.08) 200</td>
<td>(5.08) 200</td>
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<td>-21</td>
<td>(5.84) 230</td>
<td>(25.15) 900</td>
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<td>-22</td>
<td>(2.29) 090</td>
<td>(2.29) 090</td>
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<tr>
<td>-25</td>
<td>(8.13) 320</td>
<td>(2.54) 100</td>
<td>(2.54) 100</td>
<td>(2.54) 100</td>
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<tr>
<td>-27</td>
<td>(5.84) 230</td>
<td>(22.61) 890</td>
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<td>-28</td>
<td>(17.53) 690</td>
<td>(17.53) 690</td>
<td>(17.53) 690</td>
<td></td>
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<td>-29</td>
<td>(8.13) 320</td>
<td>(20.32) 800</td>
<td>N/A</td>
<td></td>
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<tr>
<td>-30</td>
<td>(15.24) 600</td>
<td>(15.24) 600</td>
<td>(15.24) 600</td>
<td></td>
</tr>
</tbody>
</table>

* Available with –LA (Locking Lead) Option

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SURFACE MOUNT .025" SQ POST HEADER

(2.54 mm) .100" PITCH • A-TSM SERIES

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

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)*
*(0.004" stencil solution
may be available; contact
ipg@samtec.com)

ALSO AVAILABLE
Other Platings
(MOQ Required)

MATES CURRENT RATING (PER PIN)
A-TSM/A-SSW 4.7 A
A-TSM/A-SSM 5.4 A
2 POSITIONS POWERED

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.

samtec.com/Automotive

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**SERIES**

- **A-HW**
  - High-Temp Custom Tail

**NO. PINS PER ROW**

- **01 thru 50**
  - Specify LEAD STYLE from chart

**LEAD STYLE**

- **L** = 10 µ" (0.25 µm)
  - Gold on contact area of longer tail, Matte Tin on tail
- **S** = Single Row
- **D** = Double Row
- **T** = Matte Tin
- **T** = Matte Tin

**PLATING OPTION**

- **-L** = 10 µ" (0.25 µm)
  - Gold on contact area of longer tail, Matte Tin on tail
- **-S** = Single Row
- **-D** = Double Row
- **-T** = Matte Tin
- **-"XXX"** = Stacker Height (in inches) .200" minimum
  - Example: -250 = (6.35 mm) .250"

**ROW OPTION**

- **-"XXX"** = Tail Length (in inches) (1.40 mm) .055" minimum
  - Example: -250 = (6.35 mm) .250"

**STACKER HEIGHT**

- **-"XXX"** = Stacker Height (in inches) .200" minimum
  - Example: -250 = (6.35 mm) .250"

**OTHER OPTION**

- **-"XXX"** = Tail Length (in inches) (1.40 mm) .055" minimum
  - Example: -250 = (6.35 mm) .250"

**PROCESSING**

- **Lead-Free Solderable:** Yes

**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

**FLEX STACK**

**LEAD STYLE**

- **S**
  - 07 (10.92) .430
- **D**
  - 08 (13.46) .530
  - 09 (18.54) .730
  - 10 (21.08) .830
  - 11 (23.62) .930
- **T**
  - 12 (26.16) 1.030
  - 13 (31.24) 1.230
  - 14 (36.32) 1.430
  - 15 (39.60) 1.630
  - 16 (43.20) 1.830
  - 17 (51.30) 2.030
  - 19 (63.50) 2.530
  - 20 (81.28) 3.030

**OAL**

- **-07**
  - 10.92, 430
- **-08**
  - 13.46, 530
  - 18.54, 730
  - 21.08, 830
  - 23.62, 930
  - 26.16, 1030
- **-12**
  - 31.24, 1230
  - 36.32, 1430
- **-15**
  - 39.60, 1630
  - 43.20, 1830
  - 51.30, 2030
  - 63.50, 2530
  - 81.28, 3030

**POLARIZATION**

- **ALSO AVAILABLE**
  - 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.

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- “A-” products are designed to Samtec’s specifications not customers’ specifications. Contact autosalesgroup@samtec.com with questions.
**SHROUDED .025” SQ POST HEADERS**

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

<table>
<thead>
<tr>
<th>SERIES</th>
<th>1</th>
<th>NO. PINS PER ROW</th>
<th>LEAD STYLE</th>
<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>BODY HEIGHT</th>
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<tbody>
<tr>
<td>A-TSS</td>
<td></td>
<td></td>
<td>03</td>
<td>Specify LEAD STYLE from chart</td>
<td>= Double Row Through-hole (lead style –01, –02 &amp; –03 only)</td>
<td>-D</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(A-TSS only)</td>
<td>= 10 µ” (0.25 µm) Gold on post, Matte Tin on tail</td>
<td>= Matte Tin</td>
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<tr>
<td>A-HTSS</td>
<td></td>
<td></td>
<td>05, 07, 08, 10, 12, 13, 15, 17, 20, 25, 32, 36 (Standard sizes)</td>
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<td>-T = Matte Tin</td>
<td>-D</td>
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<td>A-ZSS</td>
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<td></td>
<td></td>
<td></td>
<td>-D–RA = Double Row Right-angle (lead style –04 &amp; –05 only)</td>
<td>-D–RA</td>
</tr>
</tbody>
</table>

**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

**PROCESSING**

- **Lead-Free Solderable:**
  - A-HTSS=Yes
  - A-TSS, A-ZSS=No, Lead Wave only
- **SMT Lead Coplanarity:**
  0.15 mm) .006” max* (0.04” stencil solution may be available; contact ipg@samtec.com)

**ALSO AVAILABLE**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-ZSS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>02-18, 20, 22, 24, 25, 28, 30, 32, 36 (Standard sizes)</td>
</tr>
</tbody>
</table>

**Note:**

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

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---

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THROUGH-FOLE
.025" SQ POST SOCKET
(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

SERIES - NO. PINS PER ROW - LEAD STYLE - PLATING OPTION - ROW OPTION - TAIL OPTION

A-SSW = Solder Tail

A-SSQ = Square Tail

Specify LEAD STYLE from chart

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

–T = Matte Tin
(–T N/A on LIF contacts)

= Single Row

= Double Row

= Triple Row

Leave blank for straight pin version

= Right-angle
(–S & –D only)

TIGER BUY CERTIFIED

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-TSW):
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

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

PROCESSING

THROUGH-HOLE

| LEAD STYLE | SINGLE DOUBLE OR TRIPLE |
| Standard Insertion Force | Low Insertion Force |
| A | 
| –01 | –21 | (2.64, 104) |
| –02 | –22 | (4.92, 194) |
| –03 | –24 | (10.00, 394) |
| –04 | –24 | (14.88, 584) |
| –06** | N/A | (3.15, 124) |

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

* Through-hole

| LEAD STYLE | SINGLE DOUBLE |
| Standard Insertion Force | Low Insertion Force |
| B | 
| –02 | –22 | (2.54, 100) |
| –03 | –23 | (7.62, 300) |
| –04 | –24 | (12.45, 90) | N/A |

* LIF not available with Tin Plating

Right-Angle

| LEAD STYLE | SINGLE DOUBLE |
| Standard Insertion Force | Low Insertion Force |
| B | 
| –02 | –22 | (2.54, 100) |
| –03 | –23 | (7.62, 300) |
| –04 | –24 | (12.45, 90) | N/A |

Note:
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SURFACE MOUNT
.025" SQ POST SOCKET

(2.54 mm) .100" PITCH • A-SSW SERIES

A-SSW
Mates:

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<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>VS</th>
<th>OTHER OPTION</th>
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</thead>
<tbody>
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<td>-L = 10 µ&quot; (0.25 µm) Gold on contact, Matte Tin on tail</td>
<td>-S = Single Row</td>
<td>-D = Double Row</td>
<td></td>
</tr>
<tr>
<td>-S = Single Row</td>
<td>-K = -S: (3.50 mm) .138&quot; DIA, -D: (6.50 mm) .256&quot; DIA Polyimide film Pick &amp; Place Pad (03 positions min.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-TR = Tape &amp; Reel (-02 thru -28)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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:
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**TIGER CLAW™ SURFACE MOUNT SOCKET**

(2.54 mm) .100” PITCH • A-SSM SERIES

<table>
<thead>
<tr>
<th>A-SSM</th>
<th>1</th>
<th>NO. PINS PER ROW</th>
<th>PLATING OPTION</th>
<th>ROW OPTION</th>
<th>OTHER OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-SSM</td>
<td>02 thru 36 (-SV, -SH, -DH)</td>
<td>02 thru 40 (-DV)</td>
<td>-L (10 μ&quot; (0.25 μm) Gold on contact, Matte Tin on tail)</td>
<td>-SV (Single Row Vertical Pin)</td>
<td>-A (Alignment Pin)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-DV (Double Row Vertical Pin)</td>
<td>-SH (Single Row Horizontal Pin)</td>
<td>-BE (Bottom Entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-DH (Double Row Horizontal Pin)</td>
<td>-K (Polyimide film Pick &amp; Place Pad)</td>
<td>-P (Plastic Pick &amp; Place Pad)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-TR (Tape &amp; Reel)</td>
<td></td>
</tr>
</tbody>
</table>

**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:**
  - SV/DV = (-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) .006" max
- **-SH, -SV, -DV Coplanarity:**
  - (0.15 mm) .006" max
  - (0.004" stencil solution may be available; contact ipg@samtec.com)

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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 icg@samtec.com)
Compression Board:
Gold Pads required

ALSO AVAILABLE

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

BODY HEIGHT

<table>
<thead>
<tr>
<th>BODY HEIGHT</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>–03</td>
<td>1.00</td>
<td>.118</td>
</tr>
<tr>
<td></td>
<td>8.76</td>
<td>.345</td>
</tr>
<tr>
<td>–06</td>
<td>6.00</td>
<td>.236</td>
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<tr>
<td></td>
<td>9.02</td>
<td>.355</td>
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<tr>
<td>–10</td>
<td>10.00</td>
<td>.394</td>
</tr>
<tr>
<td></td>
<td>9.02</td>
<td>.355</td>
</tr>
</tbody>
</table>

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.

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**ONE-PIECE INTERFACES**

(2.54 mm) .100" PITCH • A-SIB SERIES

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>A-SIB</th>
<th>NO. OF POSITIONS</th>
<th>PLATING OPTION</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>02 thru 30</td>
<td>-F</td>
<td>-TR</td>
</tr>
</tbody>
</table>

- **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)*
  - *0.004" stencil solution may be available; contact ipg@samtec.com

**Notes:**

The A-SIB Series is intended for vertical mating only.
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**HIGH-SPEED MICRO PITCH SYSTEM**

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

### 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:** -35 °C to +125 °C
- **Lead-Free Solderable:** Yes

**Notes:**
- Contact system provides 0.50 mm float in X and Y directions.
- Some lengths, styles and options are non-standard, non-returnable.

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**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:** -23°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:** –02 thru –20
- **PLATING OPTION:**
  - **–GF**
    - 3 µ" (0.07 µm) Gold contact and tail
    - (–DH & –DV only)
  - **–F**
    - 3 µ" (0.07 µm) Gold on contact, Matte Tin on tail
    - (–SH & –SV only)
- **ROW OPTION:**
  - **–SH**
    - Single Row Horizontal
  - **–SV**
    - Single Row Vertical
  - **–DH**
    - Double Row Horizontal
  - **–DV**
    - Double Row Vertical
- **LATCH:** (Required in callout for –SH & –SV)
  - **–L**
    - Positive Latch
    - (–SH & –SV only)
- **OPTIONS:**
  - **–K**
    - (4.00 mm) .157" DIA Polyimide Film Pick & Place Pad
    - (–SH & –DV only)
  - **–P**
    - Pick & Place Pad
    - (–SV only)

### SERIES

- **A-ISS1**
  - Single Row Body
- **A-ISD1**
  - Double Row Body

- **NO. OF POSITIONS:** –02 thru –20
- **LATCH:**
  - **–L**
    - Positive Latch
    - (Single row only)

### A-CC09R

- **PLATING:**
  - **–GF**
    - 3 µ" (0.07 µm) Gold
    - Contact, Full Reel
    - (25,000 Parts per Reel)

### TOOLING

- **Hand Tool:** CAT-HT-309-2830-12
- **Mini Applicator:** CAT-MC-309-2830-XX-01

**Contact Material:** Phosphor Bronze

**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:** -23°C to +85°C

**Current Rating:** 3.3 A per pin
(1 pin powered)

**Voltage Rating:** 250 VAC/353 VDC

**Note:**
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**Contact:** autosalesgroup@samtec.com

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### DISCRETE WIRE HEADER/CABLE COMPONENTS

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

#### A-IPL1

<table>
<thead>
<tr>
<th>Pins Per Row</th>
<th>Lead Style</th>
<th>Plating Option</th>
<th>Row Option</th>
<th>Tail Option</th>
<th>K</th>
<th>TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>02, 03, 04, 05, 06, 08, 10, 12, 15, 16, 20, 25 (Standard sizes)</td>
<td>-01 = Through-hole</td>
<td>-L = 10 µ&quot; (0.25 µm) Gold on contact, Matte Tin on tail</td>
<td>-S = Single Row</td>
<td>-RA = Right-angle (-01 lead style only)</td>
<td>-Keyed Polarization</td>
<td>Tape &amp; Reel (-02 lead style only)</td>
</tr>
<tr>
<td>02-5</td>
<td>-02 = Surface Mount</td>
<td>-SH = Single Row Horizontal (-02 lead style only)</td>
<td>-D = Double Row</td>
<td>-01-S-RA = Right-angle Elevated (-01 lead style only)</td>
<td>-TR = Keyed Polarization</td>
<td></td>
</tr>
<tr>
<td>-02-SH</td>
<td>-01 = No. of positions x (2.54).100 + (1.52).060</td>
<td>-SH = No. of positions x (2.54).100 + (4.06).160</td>
<td></td>
<td>-01-S-RE1 = Right-angle Elevated (-01 lead style only)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SPECIFICATIONS

- **Insulator Material:** Natural LCP
- **Terminal Material:** Phosphor Bronze
- **Plating:** Sn or Au over 50 µ" (1.27 µm) Ni
- **Operating Temp Range:** -25 °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.

#### SERIES

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>01</th>
<th>Plating Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2630</td>
<td>-L = 10 µ&quot; (0.25 µm) Gold on contact, Tin on tail</td>
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</tr>
<tr>
<td>-2024</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### WIRE GAUGE

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

#### PLATING OPTION

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

#### TOOLING

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

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<td>25</td>
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<td>0.80 mm Edge Rate® Right-Angle Card Socket</td>
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<td>0.635 mm Razor Beam® High-Speed Hermaphroditic Strip</td>
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</tr>
<tr>
<td>A-M/CM</td>
<td>1.0 mm Mini Edge Card Socket, Vertical</td>
<td>27</td>
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<tr>
<td>A-MMS</td>
<td>2.0 mm Tiger Claw® Socket Strip</td>
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<tr>
<td>A-MT/MT</td>
<td>2.0 mm Horizontal Surface Mount Terminal</td>
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<tr>
<td>A-MTMM</td>
<td>2.0 mm FlexY® Modified Through-hole Header</td>
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<td>A-MTSS</td>
<td>2.54 mm Flex Stack Modified SQ Post Header</td>
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<tr>
<td>A-Q/SM</td>
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<td>A-QR/F8</td>
<td>0.80 mm Q Rate® Slim Body Ground Plane Header</td>
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<tr>
<td>A-Q/SE</td>
<td>0.80 mm Q Strip® High-Speed Ground Socket</td>
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</tr>
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