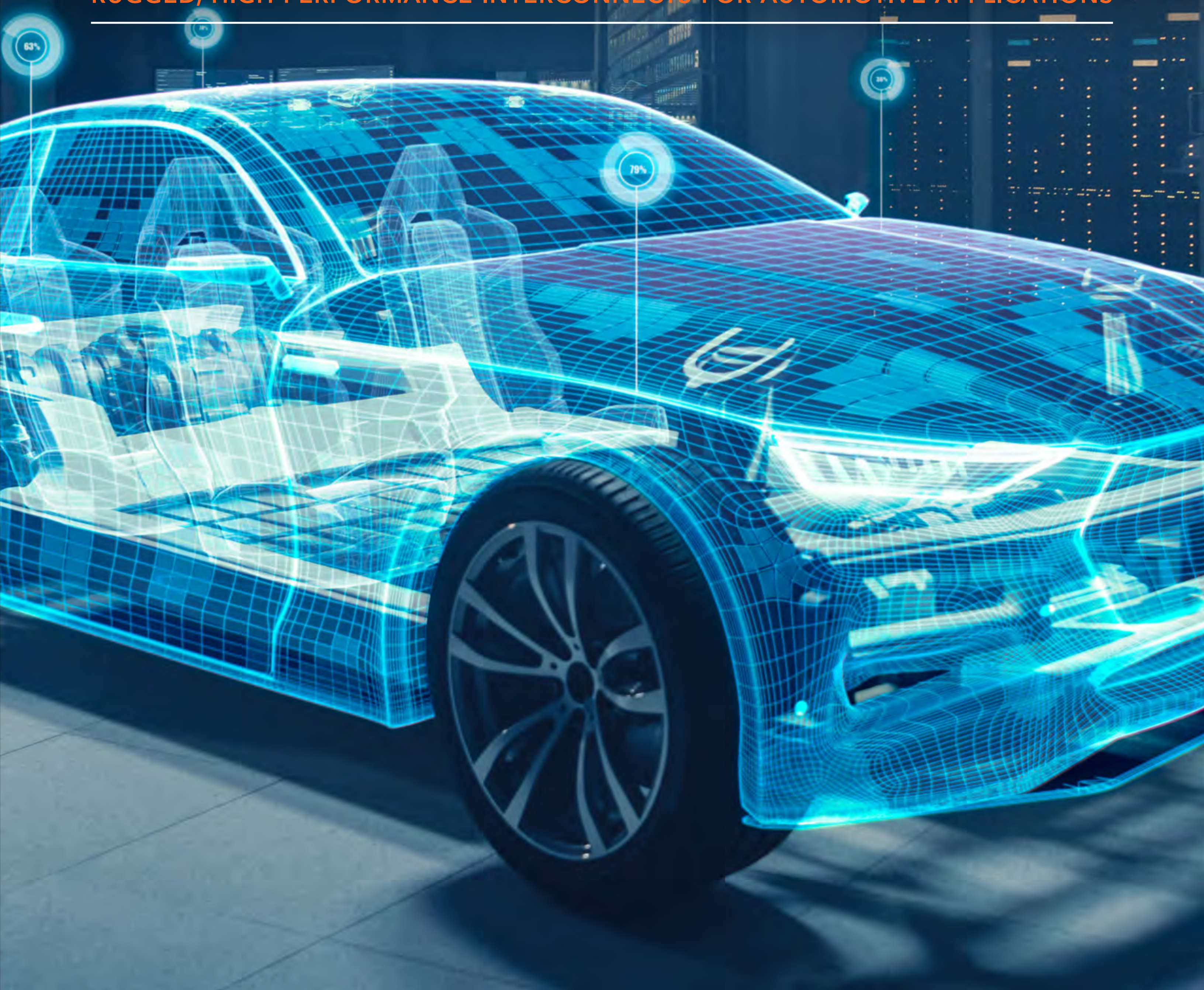
AUTOMOTIVE
SOLUTIONS CATALOG

RUGGED, HIGH-PERFORMANCE INTERCONNECTS FOR AUTOMOTIVE APPLICATIONS



AUTOMOTIVE

INTERCONNECT & DESIGN CAPABILITIES

Samtec delivers Sudden Service® solutions for standard and customer-specific automotive designs by providing short lead times with 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 PPAP options. For more automotive information, visit **samtec.com/auto**.

STANDARD CATALOG PRODUCT

Certified ISO-9001

Built to Samtec's drawing

Sudden Samples for prototyping

Short lead times for volume

ISO 9001
CERTIFIED

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

PPAP
ELIGIBLE

ACD-SERIES FOR CUSTOMIZATION

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

- Controlled IATF facility

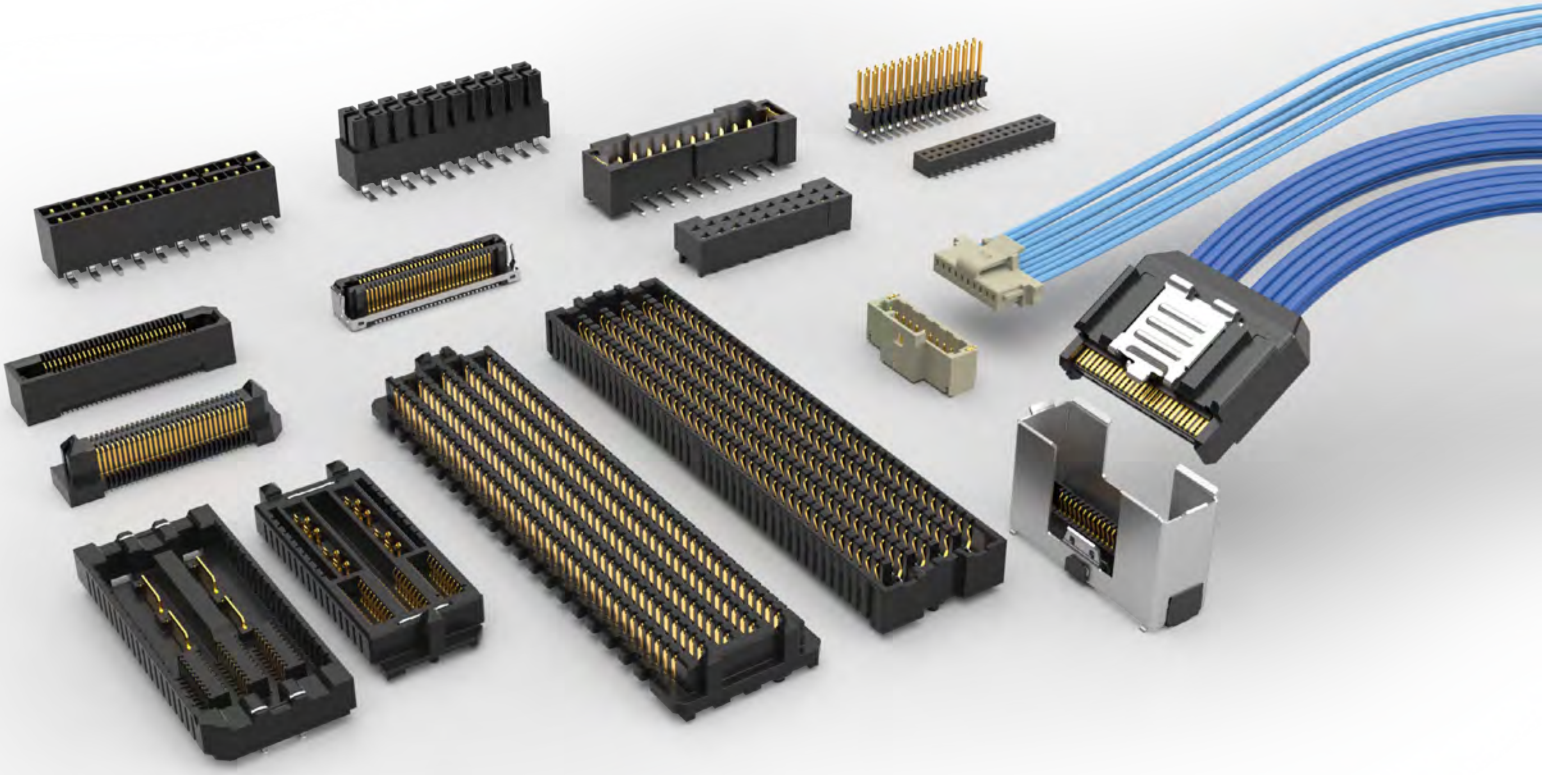
- Registered International Material Data System (IMDS)

Vendor Managed Inventory options for volume

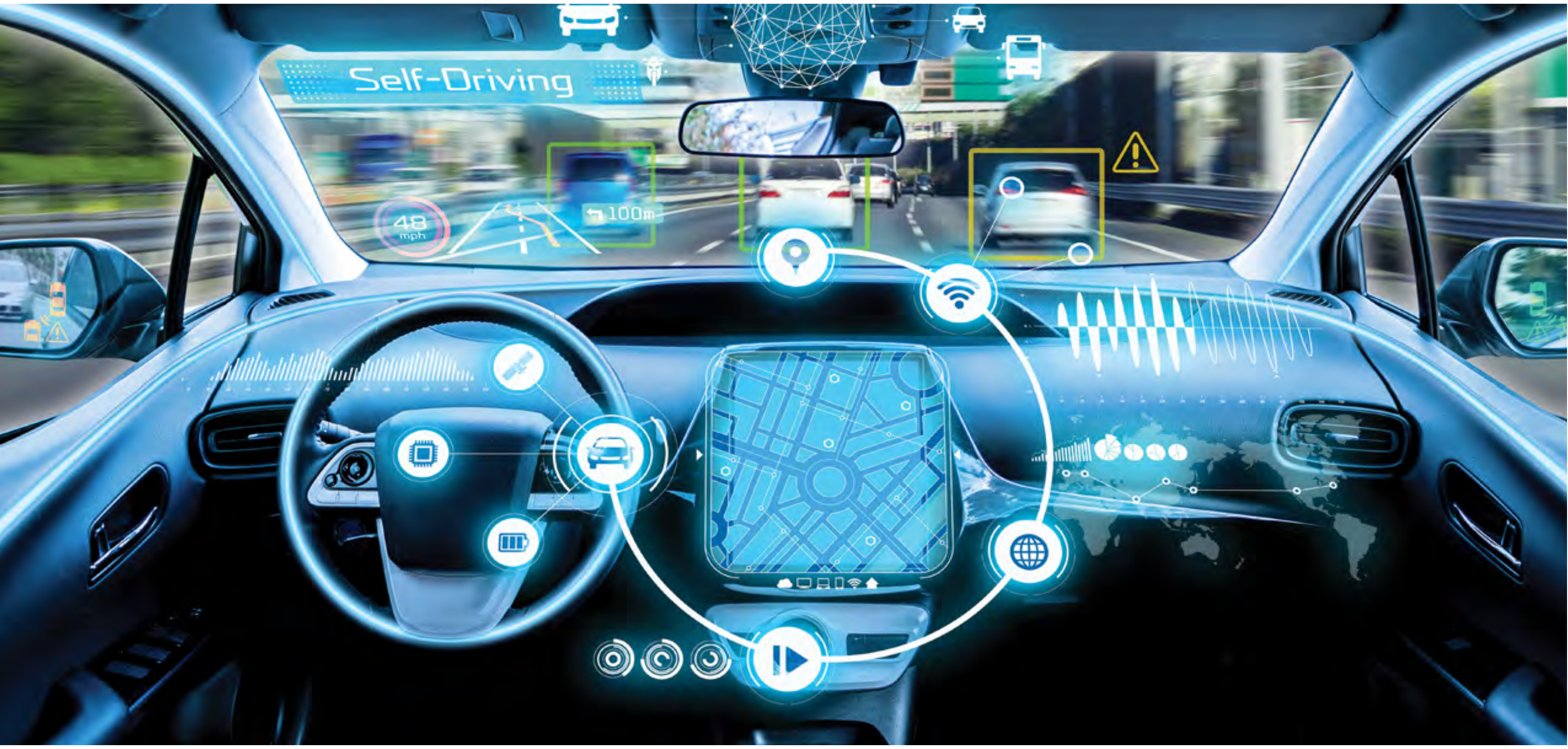
ACD
AUTOMOTIVE CERTIFIED DESIGN

Please note: All PPAP Level 3 products can be found on pages 18-90, including more than 30 newly certified series. Not all products featured on pages 4-17 meet PPAP guidelines, but Samtec has a 5 year roadmap for expanding products available with PPAP compliance. Please contact **AutoSalesGroup@samtec.com** for more information.

TABLE OF CONTENTS



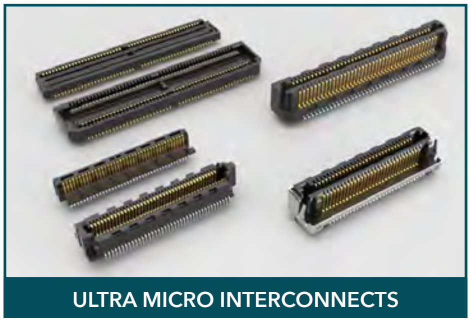
INFOTAINMENT

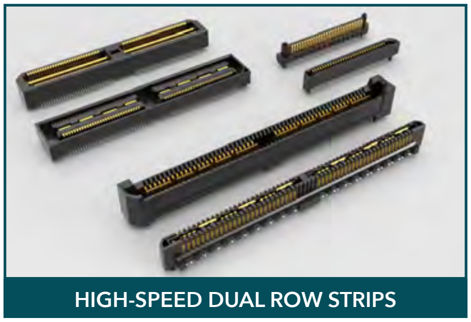


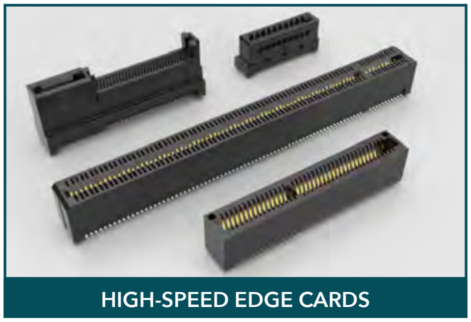
The accessibility of information and entertainment on-the-go is standard in today's automobiles. From touch screen displays for multimedia to driver assist systems and smartphone pairing, the demand for bandwidth and connectivity is growing. Samtec offers simplified designs to save space and keep costs low as in-vehicle technology becomes more complex.

PRODUCT GROUPS

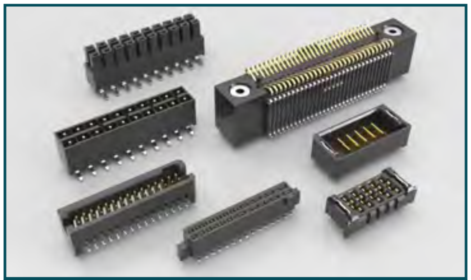
Samtec offers rugged, high-speed solutions with high reliability for infotainment applications in high shock and vibe environments.

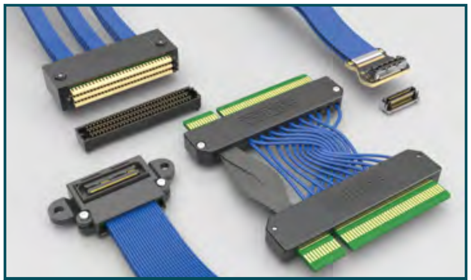

ULTRA MICRO INTERCONNECTS


HIGH-SPEED DUAL ROW STRIPS


HIGH-SPEED EDGE CARDS


RUGGED HIGH-SPEED SYSTEMS


RUGGED BOARD-TO-BOARD SYSTEMS


HIGH-SPEED CABLE

ULTRA LOW PROFILE STRIPS

PAM4
56
Gbps

- Micro Blade & Beam ultra slim, ultra low profile
- Stack heights down to 2 mm
- Slim body designs for increased PCB space savings
- Ultra fine 0.40 mm and 0.50 mm pitch
- See pages 40-41 or visit **samtec.com/micro** for more micro pitch, low profile solutions

Q2™ RUGGED GROUND PLANE CONNECTORS

NRZ
25
Gbps

- Up to 25 Gbps NRZ performance
- 0.635 mm pitch Edge Rate® contacts with increased insertion depth
- Integral power/ground plane rated for up to 15.7 A
- Optimal shielding and power pins available
- See page 30 or visit **samtec.com/mezzanine** for more high-speed board-to-board solutions

RUGGED HERMAPHRODITIC CONNECTORS

NRZ
25
Gbps

- Razor Beam™ contact for high-speed and fine pitch systems
- 0.50 mm, 0.635 mm and 0.80 mm pitch
- 4-6x greater mating/unmating forces vs. typical micro pitch connectors
- Self-mating connectors reduce inventory costs and can be interchanged for varying stack heights
- Ten stack height options from 5 mm to 12 mm
- See pages 38-39 or visit **samtec.com/razorbeam** for more rugged, self mating solutions

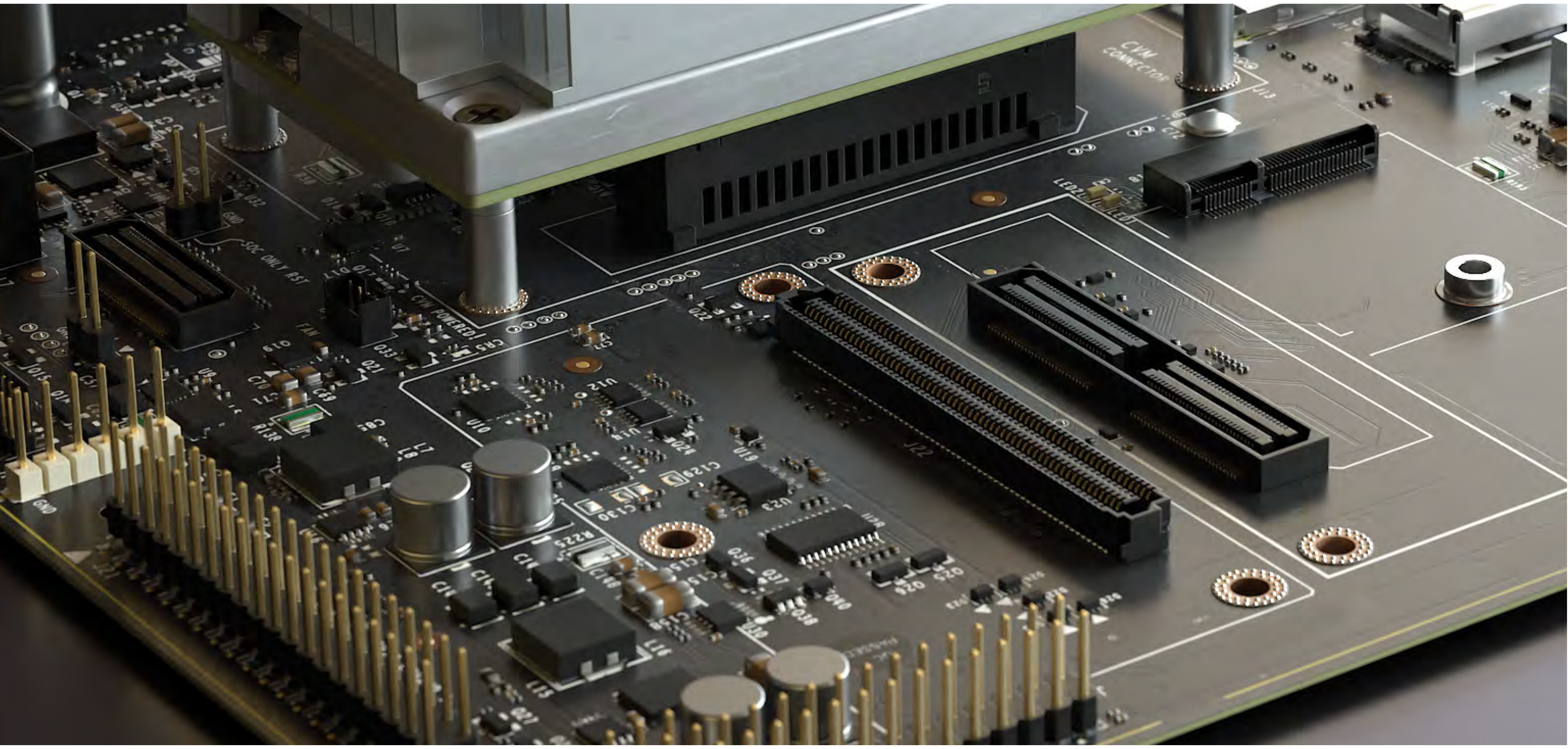
APPLICATION: ADVANCED DISPLAYS

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:

Q RATE® GROUND PLANE CONNECTOR STRIPS

- 28 Gbps NRZ performance
- Slim 4.60 mm body width saves board space
- 0.80 mm pitch Edge Rate® contacts with increased wipe
- Integral power/ground plane rated for up to 8.5 A
- See page 31 for more information about A-QRM8/A-QRF8 or visit **samtec.com/mezzanine** for additional high-speed board-to-board solutions

EMBEDDED COMPUTE MODULES

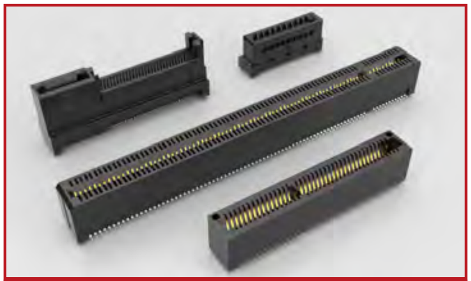


As autonomous vehicle technology grows, AI and machine learning innovations increase the reliability of human and machine interaction. SoMs and CoMs programmed for deep learning offer reduced network load and lower latencies while collecting data to accurately identify and respond to people and the environment,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

PRODUCT GROUPS

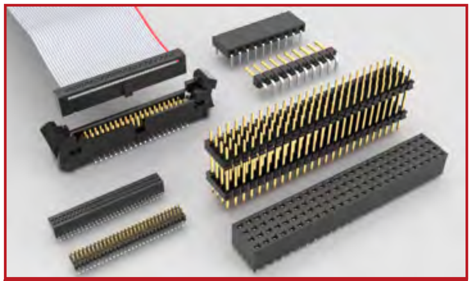
Samtec's variety of high-speed, high-density interconnects support SoMs/CoMs in automotive systems.

HIGH-DENSITY ARRAYS



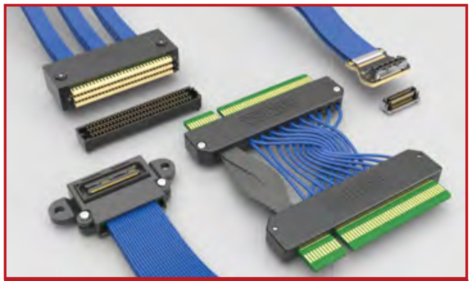
HIGH-SPEED EDGE CARDS

RUGGED HIGH-SPEED SYSTEMS



FLEXIBLE STACKING

POWER SYSTEMS



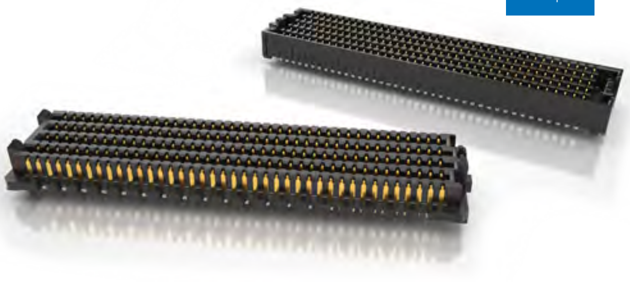
HIGH-SPEED CABLE

HIGH-DENSITY ARRAYS

SEARAY™

PAM4 56 Gbps

- Open-pin-field arrays for maximum routing and grounding flexibility
- SEARAY™ 1.27 mm pitch with up to 560 Edge Rate® contacts
- SEARAY™ 0.80 mm pitch with up to 500 contacts for 2x the density
- LP Array™ low profile arrays with 4 mm, 4.5 mm and 5 mm stack heights
- See pages 18-23 or visit **samtec.com/arrays** for more high-performance and high-density solutions



HIGH-PERFORMANCE ARRAYS

ACCELERATE® HD

PAM4 64 Gbps

- AcceleRate® HP high-performance to 112 Gbps PAM4
- AcceleRate® HD high-density arrays to 64 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 16 mm and slim 5 mm width (ADX6)
- Data rate compatible with PCIe® 6.0/CXL® 3.1, and 100 GbE (APX6)
- Visit **samtec.com/arrays** for more high-speed, small form factor solutions

EDGE RATE® RUGGED SIGNAL INTEGRITY SYSTEMS

EDGE RATE® SYSTEM

PAM4 56 Gbps

- 0.50 mm and 0.80 mm pitch Edge Rate® contacts optimized for signal integrity performance and less prone to damage when "zippered" to unmate
- Up to 1.50 mm contact wipe for a reliable connection
- Stack heights from 7 mm to 18 mm
- Right-angle available for increased design flexibility
- See pages 24-27 or visit **samtec.com/mezzanine** for more high-speed board-to-board solutions

APPLICATION: AI SERVER INFRASTRUCTURE

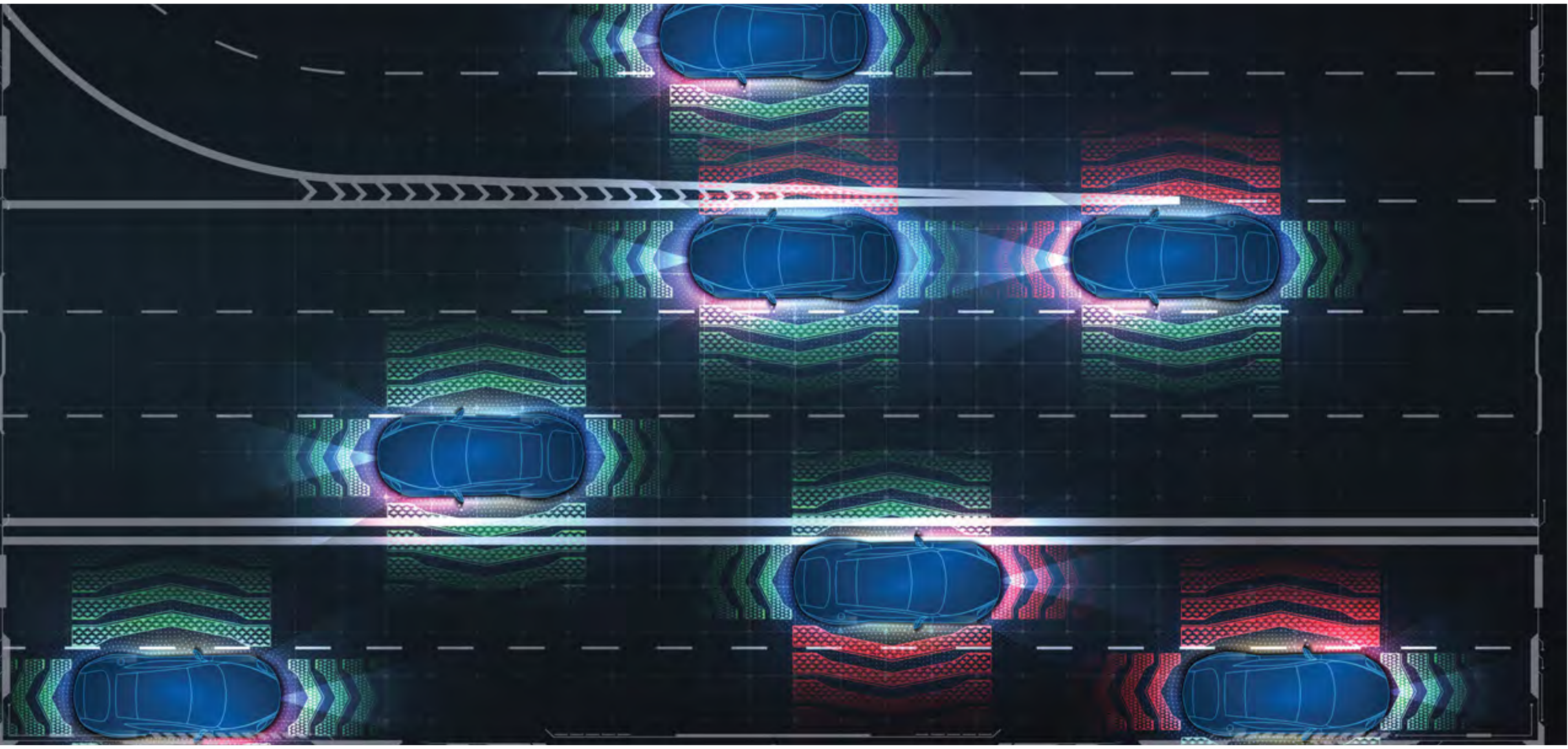
Artificial intelligence is the path to self-driving vehicles. In order to get there, supercomputers are being used to continuously process a vast amount of image and video data to become proficient at that skill. Samtec offers a variety of interconnect solutions to meet the high-performance and signal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

ACCELERATE® SLIM DIRECT ATTACH CABLE ASSEMBLY

ACCELERATE®

- 64 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

VISION SYSTEMS



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

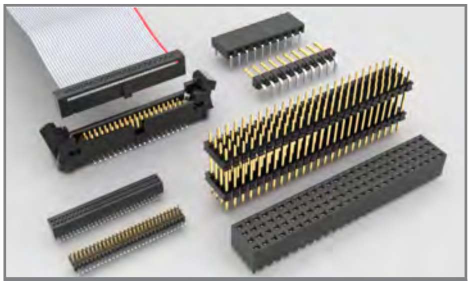
PRODUCT GROUPS

Samtec offers a wide variety of interconnect solutions to support automotive vision systems related needs.

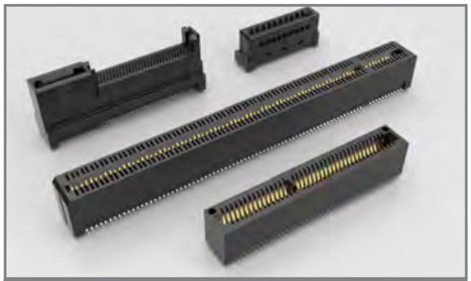
HIGH-DENSITY ARRAYS

ULTRA MICRO INTERCONNECTS

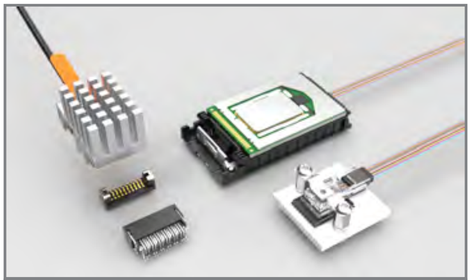
PRECISION RF



FLEXIBLE STACKING



HIGH-SPEED EDGE CARDS



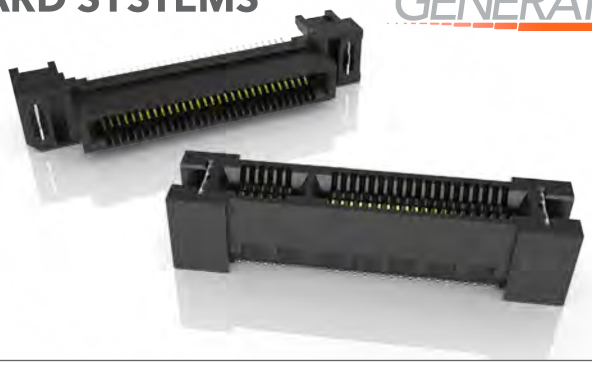
OPTICS

GENERATE® HIGH-SPEED EDGE CARD SYSTEMS

GENERATE

NRZ
28
Gbps

- 0.80 mm pitch with up to 200 total Edge Rate® contacts
- Vertical, right-angle and edge mount
- Rugged signal/power combination (A-HSEC8-PV) and tucked beam technology (A-HTEC8)
- Latches and weld tabs available
- See pages 32-35 or visit **samtec.com/edgecard** for additional edge card solutions



ULTRA LOW PROFILE STRIPS

PAM4
56
Gbps

- Micro Blade & Beam ultra slim, ultra low profile
- Slim body designs and stack heights down to 2 mm
- Ultra fine 0.40 mm and 0.50 mm pitch
- See pages 40-41 or visit **samtec.com/micro** for more micro pitch, low profile solutions

HIGH-SPEED SIGNAL/POWER ARRAYS

ACCELERATE® mP

PAM4
64
Gbps

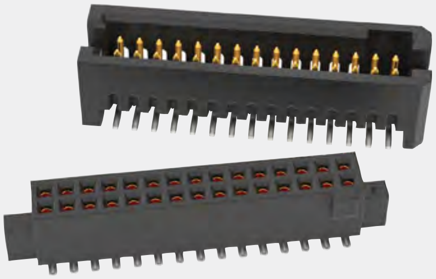
- Power blades rotated 90° gives equal access to heat escape for uniform cooling, increased current capacity and reduced crowding
- Open-pin-field design for grounding and routing flexibility
- Up to 15 A/blade (200 VAC/283 VDC)
- Visit **samtec.com/rugged-hs** for more rugged, high-speed solutions

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 rugged/power interconnects meet the demands of scalability and flexibility needed for machine vision and learning in ADAS and autonomous driving systems:

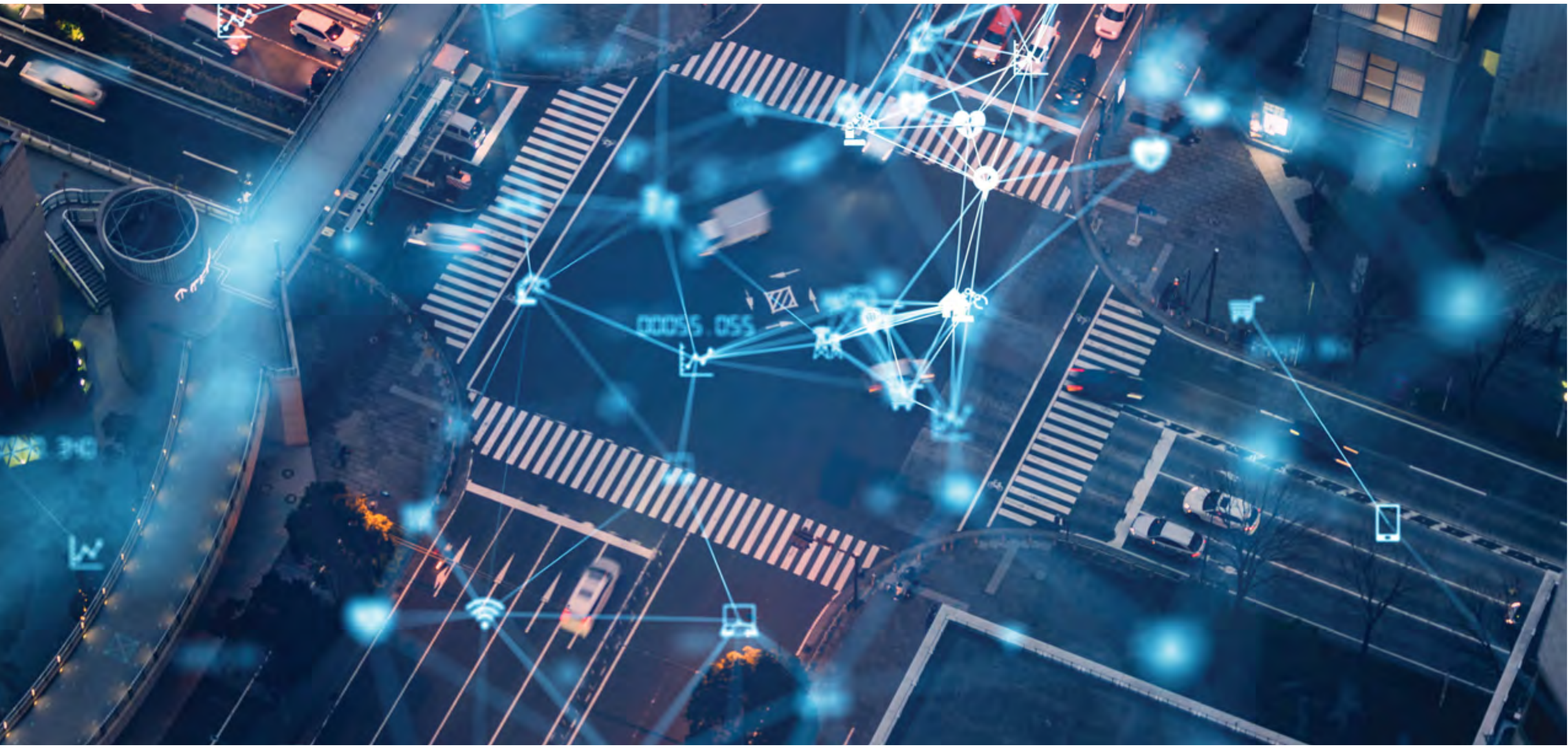
RUGGED TIGER EYE™ SYSTEMS

- High-reliability, high cycle contacts on 1.27 mm and 2.00 mm pitch
- Up to 3.7 A/pin (250 VAC/354 VDC) and 8 Gbps performance
- Severe Environment Testing Qualified Product (see page 16)
- See pages 52-60 for more information about Tiger Eye™, or visit **samtec.com/rugged** for additional rugged/power solutions



TIGER™ EYE SYSTEM

C-V2X TECHNOLOGY



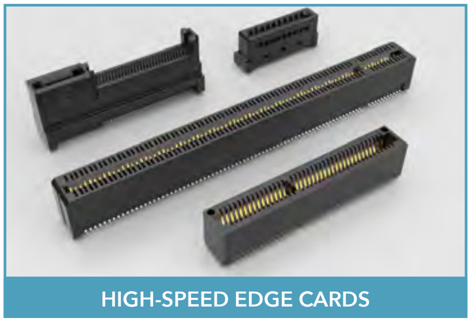
C-V2X (Cellular Vehicle-to-Everything) technologies go beyond line-of-sight systems to enable vehicle intelligence, improve traffic flow and increase safety by leveraging next gen 5G networks and cloud services. This interconnected ecosystem requires a reliable communications infrastructure for high-speed and high frequency data exchange. Samtec's 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 technology related needs.

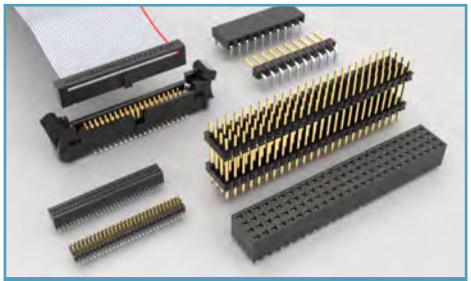
PRECISION RF

HIGH-DENSITY ARRAYS

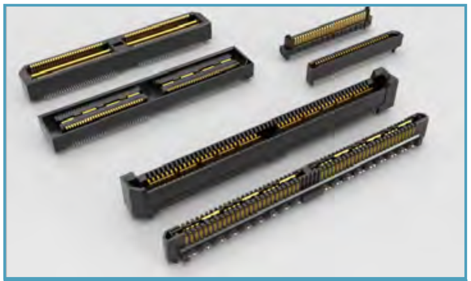


HIGH-SPEED EDGE CARDS

HIGH-SPEED CABLE



FLEXIBLE STACKING



HIGH-SPEED DUAL ROW STRIPS

PRECISION RF CABLES & CONNECTORS

DC TO 110 GHz

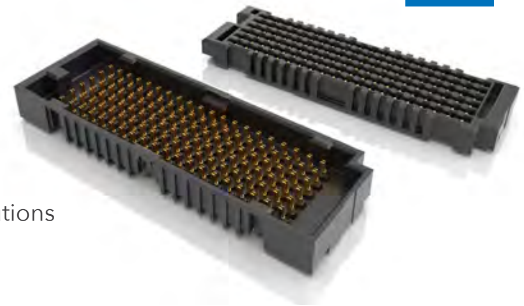
- Supports frequency range from 18 GHz to 110 GHz
- Microwave/millimeter wave cable assemblies, cable and board connectors
- Variety of solutions: 1.00 mm, 1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, 3.50 mm, SMP, SMPM, SMA, SSMA, N Type, TNCA
- Bulls Eye® high-performance test assemblies to 90 GHz
- Visit **samtec.com/rf** for a full line of RF solutions

HIGH-SPEED ARRAYS

LP ARRAY™

PAM4 56 Gbps

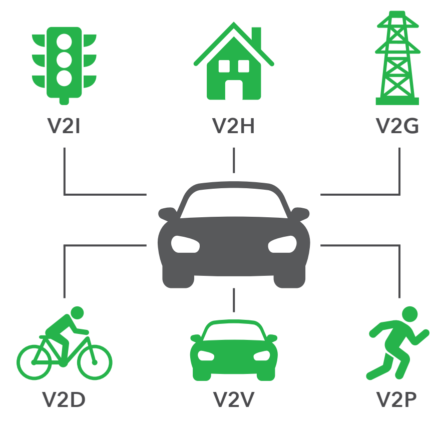
- Open-pin-field arrays for maximum routing and grounding flexibility
- SEARAY™ 1.27 mm and 0.80 mm pitch with up to 560 Edge Rate® contacts
- LP Array™ low profile arrays with 4 mm, 4.5 mm and 5 mm stack heights
- AcceleRate® HP and AcceleRate® HD arrays with up to 400 I/Os in a 4-row design; roadmap to 1,000+ pins (APX6)
- See pages 18-23 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 32-37 or visit **samtec.com/edgecard** for additional high-speed edge card solutions

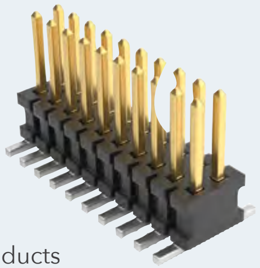
APPLICATION: CONNECTED VEHICLES



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

JTAG FLEXIBLE STACKING CONNECTORS

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

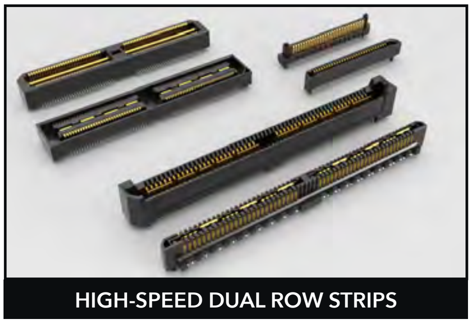


CHARGING INFRASTRUCTURE

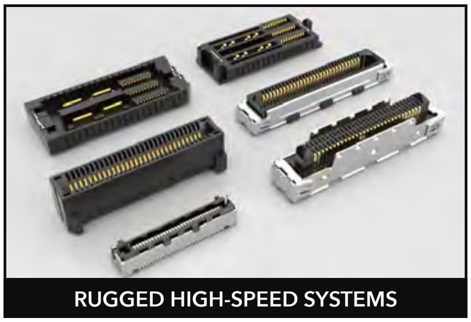
The demand for increased charging power continues to grow as more electric vehicles hit the roadways. Whether for one car or a large fleet of vehicles, a reliable and accessible charging infrastructure is needed to support long range mileage with fast and efficient, on-demand charging solutions. Samtec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

PRODUCT GROUPS

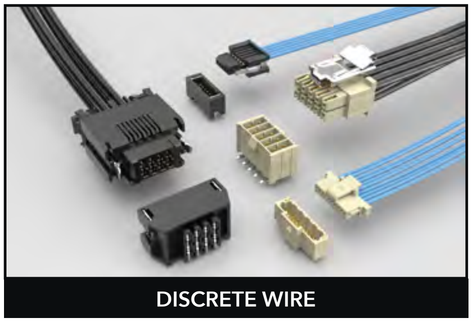
A wide variety of Samtec interconnect solutions are available to support charging infrastructure related needs.



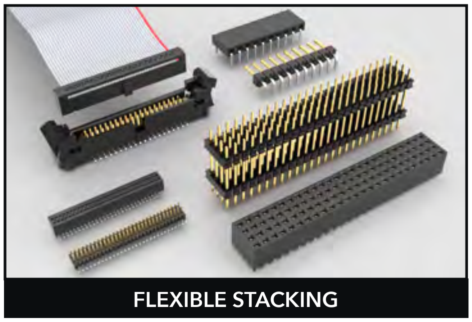
HIGH-SPEED DUAL ROW STRIPS



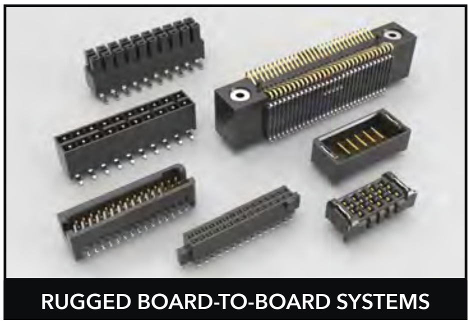
RUGGED HIGH-SPEED SYSTEMS



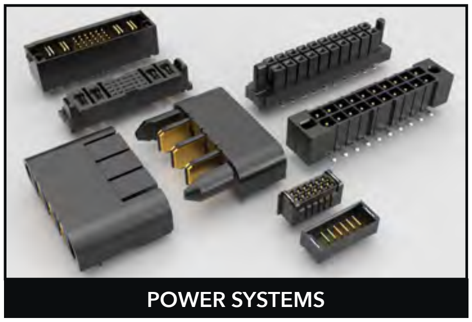
DISCRETE WIRE



FLEXIBLE STACKING



RUGGED BOARD-TO-BOARD SYSTEMS



POWER SYSTEMS

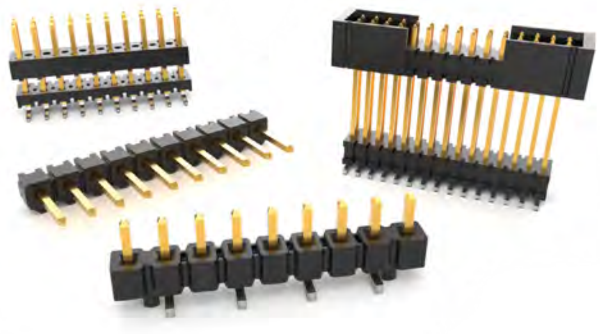
mPOWER® ULTRA MICRO POWER INTERCONNECTS

MAX 18 Amps

- Micro 2.00 mm pitch with up to 18 A/blade
- Board-to-board, cable-to-board, panel-to-board and cable-to-cable
- 1-20 positions; 5-20 mm stack heights, vertical and right-angle
- Selectively loaded contacts for creepage and clearance requirements available
- See pages 42-45 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 61-88 or visit **samtec.com/flexiblestacking** for more board stacking and one-piece solutions

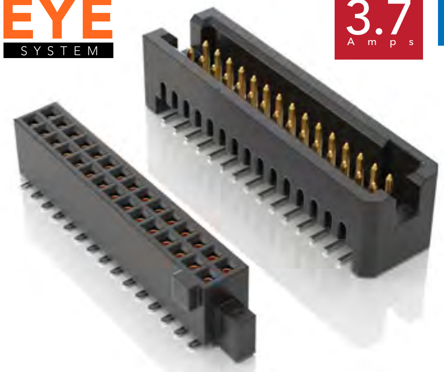


TIGER EYE™ RUGGED SYSTEMS

MAX 3.7 Amps

8 Gbps

- 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 52-60 or visit **samtec.com/rugged-b2b** for additional rugged board-to-board solutions

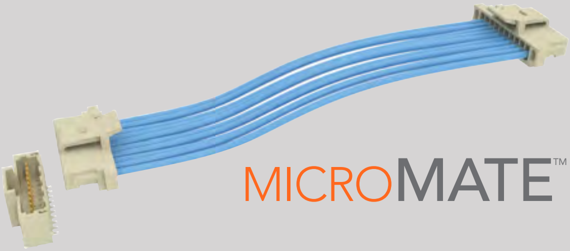


APPLICATION: POWER MANAGEMENT

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™ fluoropolymer
- Visit **samtec.com/discretewire** for more discrete wire cable assemblies, components and tooling solutions



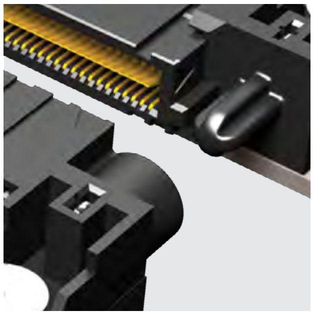
Teflon™ is a trademark of The Chemours Company FC, LLC used under license by Samtec.

RUGGED FEATURES & CUSTOM SOLUTIONS

RUGGEDIZING OPTIONS

FRICTION LOCKS

Metal or plastic
friction locks increase
retention/withdrawal force

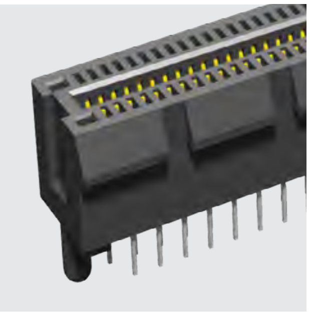


GUIDE POSTS

Easy and secure mating

SCREW DOWNS

Secure mechanical
attachment to the board



ALIGNMENT PINS

Easy and secure mating

CONTACT FLEXIBILITY

TIGER CLAW™

Dual wipe contact

Pass-through applications

Ultra-low profile

TIGER EYE™

High-reliability

High mating cycles

Multi-finger contact

TIGER BUY™

High-retention

Cost effective

Tuning fork contact

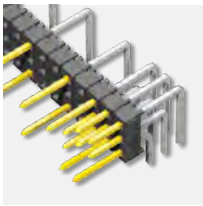
POWER EYE

High current

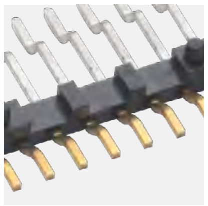
High-reliability

Three-finger contact

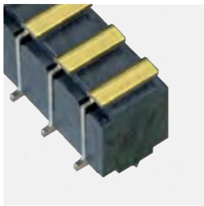
CUSTOM SOLUTIONS



Pin
Modifications



Body
Modifications



Custom
Connectors

Prototyping

Special
Platings

Testing

Qualification
Testing

CERTIFICATIONS

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

IATF 16949 CERTIFIED

ISO14001 CERTIFIED

ISO 9001 CERTIFIED

IMDS COMPLIANT

RoHS COMPLIANT LEAD FREE

REACH COMPLIANT

PPAP

PRODUCTION PART APPROVAL PROCESS

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

1. INDEX PAGE
2. SERIES DESIGN RECORD – SAMTEC RELEASED PRINT
3. CHANGE HISTORY
4. SERIES DESIGN FMEA
5. PROCESS FLOW DIAGRAM
6. PROCESS FMEA
7. CONTROL PLAN – PRE-LAUNCH
8. CONTROL PLAN – SERIAL PRODUCTION
9. MEASUREMENT SYSTEM STUDIES (GAGE R&R)
    - **a.** Total Gage R&R < 10% is acceptable
    - **b.** Total Gage R&R > 10% , < 30% is acceptable for non-critical characteristics
10. ASSEMBLY DIMENSIONAL RESULTS (100% FAI & BALLOONED PRINT)
    - **a.** Tabular Summary Format (according to AIAG manual)
      100% layout for 5 parts for each cavity (1 cavity)
      100% layout for 3 parts for each cavity (2 cavities)
      100% layout for 2 parts for each cavity (3 or 4 cavities)
      100% layout for 1 part for each cavity (6 or more cavities)
    - **b.** Drawing numbered to correlate with submitted dimensional results and drawing notes

Type: Laboratory Scope
Document: NA-QA-SC-1001-W Rev D
Revision Date: 2/17/2010
Department Manager Approval Date: 4/23/2009
Department Approval: QA
Manager Approval: QA Lab Manager
Page: 1 of 1
Title: QA Laboratory Scope

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO/TS 16949:2009

This is to certify that:

Samtec Asia Pacific (M) Sdn Bhd
No.15, Jalan Arung
Kawasan Perindustrian
Taman Johor
81200 Johor Bahru, Johor
Malaysia

Holds Certificate No: TS 604886

and operates a Quality Management System which complies with the requirements of ISO/TS 16949:2009 for the following scope:

Design and manufacture of electronic connectors marked as ACD series (Automotive Certified Designs) for printed circuit board

For and on behalf of BSI:

Managing Director (ASEAN), Alwi Hafiz

Originally registered: 12/03/2012 Latest Issue: 12/03/2012 Expiry Date: 11/03/2015
IATF Number: 0136140

Page: 1 of 2

11. INITIAL PROCESS STUDY (SPC)
    Cpk > 1.67 or 100% in process inspection
12. COMPONENT PPAP
13. MATERIAL CERTIFICATION
14. QUALIFIED LABORATORY DOCUMENTATION
15. CAPACITY & RUN AT RATE DATA FORM – DATA FROM PRODUCTION TRIAL RUN
    Data must come from a minimum run of 300 parts
16. RUN @ RATE CHECKLIST
17. EVIDENCE OF IMDS SUBMISSION
    Proof of submission into the International Material Data System
18. PART SUBMISSION WARRANT (PSW)
19. FACILITY IATF CERTIFICATION

GREEN: SUBMITTED, WHITE: RETAINED

ULTRA RUGGED TESTING

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

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

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

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
SEVERE ENVIRONMENT
TESTED

SET QUALIFIED A-SERIES PRODUCTS

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

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

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

SET TESTING INCLUDES

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

EXTENDED LIFE PRODUCT™

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

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.™ CERTIFIED 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™ 1.27 mm High-Density Arrays

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

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

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

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

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

DESIGN QUALIFICATION TESTING

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

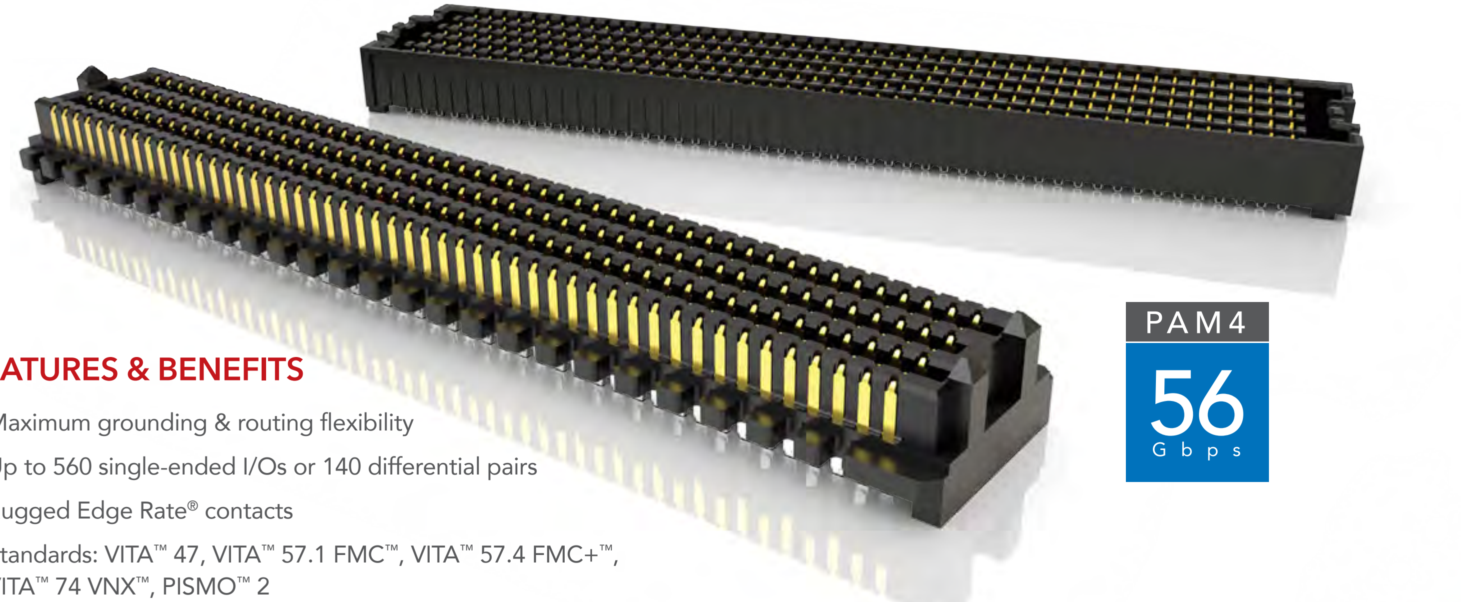
- Gas Tight
- Normal Force
- Thermal Aging
- Mating/Unmating/Durability
- IR/DWV
- Current Carrying Capacity (CCC)
- Mechanical Shock/Random Vibration/LLCR
- Mechanical Shock/Random Vibration/Event Detection

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

SEARRAY™

HIGH-DENSITY OPEN-PIN-FIELD ARRAYS

(1.27 mm) .050" PITCH



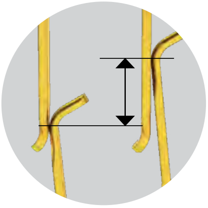
FEATURES & BENEFITS

- Maximum grounding & routing flexibility
- Up to 560 single-ended I/Os or 140 differential pairs
- Rugged Edge Rate® contacts
- 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™
- Severe Environment Testing qualified. Visit **samtec.com/set**

PAM4
56
Gbps

EDGE® RATE CONTACT

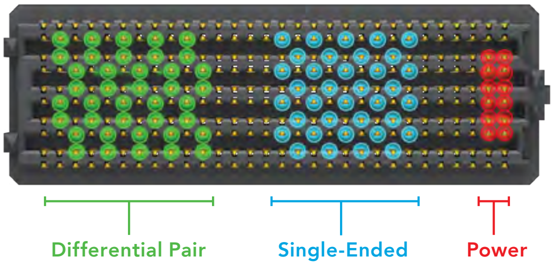
10 YEAR MFG WITH 30 µ" GOLD
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES



(1.12 mm) .044"
Nominal Wipe

Solder Charges

MAXIMUM GROUNDING & ROUTING FLEXIBILITY



VITA/VNX/VNX+/FMC/FMC+/XMC/XMC+ are all respective trademarks of VITA
PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG.

KEY SPECIFICATIONS (A-SEAM/A-SEAF)

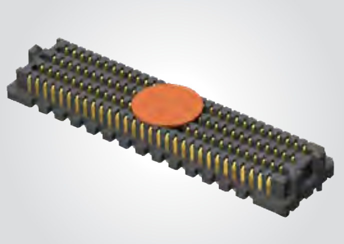
INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	WORKING VOLTAGE	LEAD-FREE SOLDERABLE
Black LCP	Copper Alloy	Au or Sn over 50 µ" (1.27 µm) Ni	-55 °C to +125 °C	2.7 A per pin (10 adjacent pins powered) 7 mm stack height	240 VAC/339 VAC	Yes

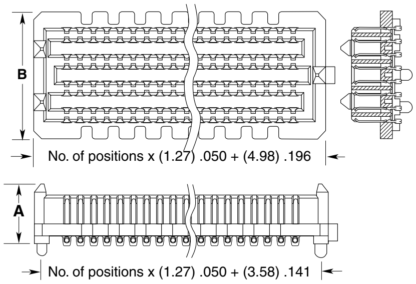
Note: Some lengths, styles and options are non-standard, non-returnable

(1.27 mm) .050" PITCH • A-SEAM/A-SEAF SERIES

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

A-SEAM
Board Mates:
A-SEAF

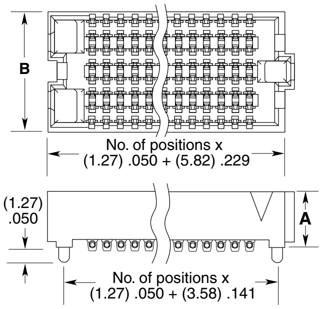




LEAD STYLE	A
–02.0	(5.61) .221
–03.0	(6.60) .260
–03.5	(7.11) .280
–06.5	(10.16) .400
–07.0	(10.59) .417
–09.0	(12.60) .496
–11.0	(14.61) .575

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

A-SEAF
Board Mates:
A-SEAM



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

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

MATED HEIGHTS

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

STANDARDS

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

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

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

Severe Environment Testing qualified.
Visit samtec.com/set

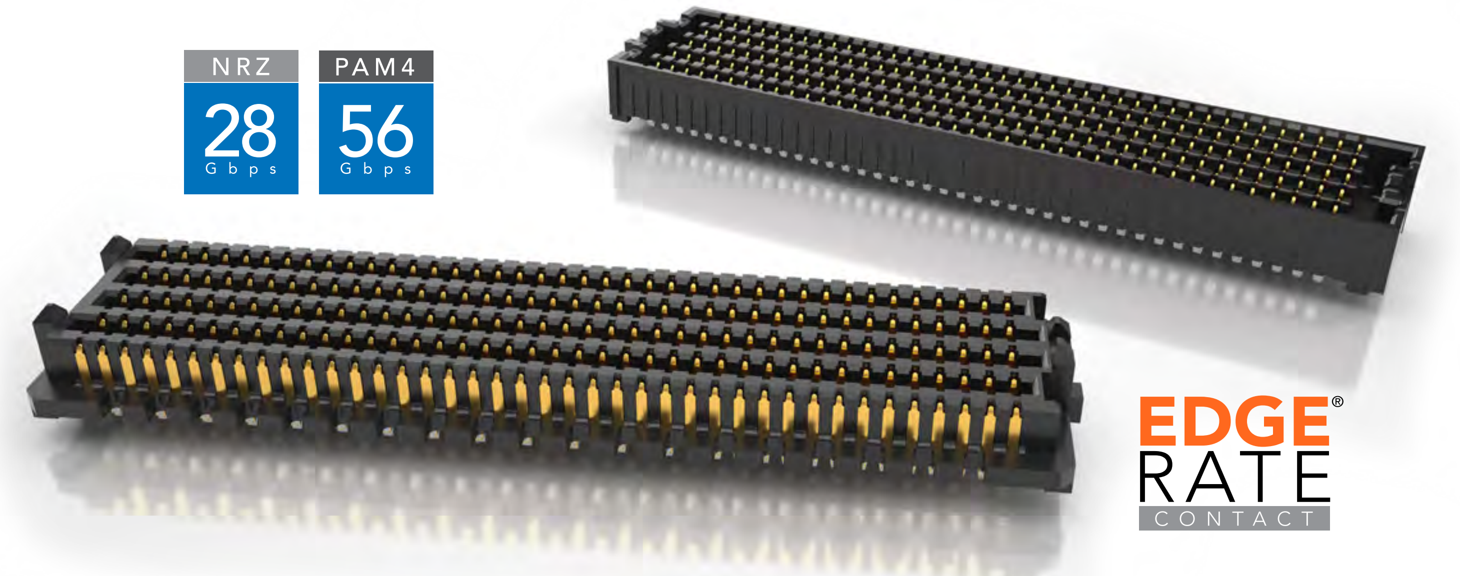
SEARAY™ .8mm

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

(0.80 mm) .0315" PITCH

NRZ 28 Gbps

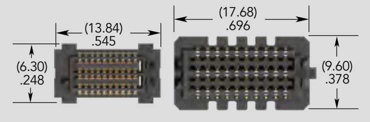
PAM4 56 Gbps



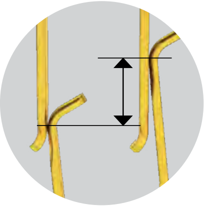
EDGE® RATE CONTACT

FEATURES & BENEFITS

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

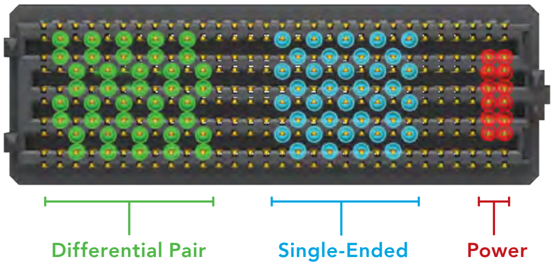


0.80 mm pitch vs. 1.27 mm pitch
(60 pins shown)



(1.12 mm) .044"
Nominal Wipe

MAXIMUM GROUNDING & ROUTING FLEXIBILITY



KEY SPECIFICATIONS (A-SEAM8/A-SEAF8)

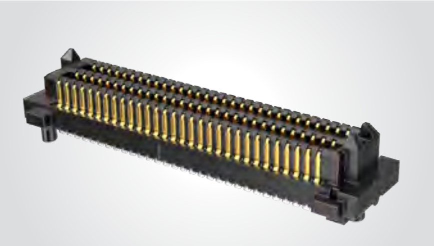
INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	LEAD-FREE SOLDERABLE
Black LCP	Copper Alloy	Au or Sn over 50 µ" (1.27 µm) Ni	-55 °C to +105 °C	1.3 A per pin (10 adjacent pins powered)	220 VAC/311 VDC	Yes

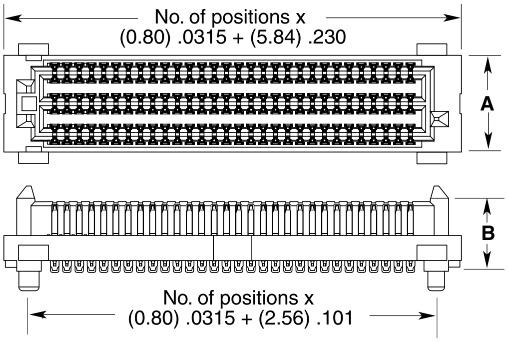
(0.80 mm) .0315" PITCH • ULTRA HIGH-DENSITY ARRAYS

SERIES	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	OPTION	K
A-SEAM8 Terminal **A-SEAF8** Socket	**–10, –20, –30, –40, –50**	**–S02.0** = 2 mm Body Height (A-SEAM8 only) **–S05.0** = 5 mm Body Height (A-SEAM8 only) **–05.0** = 5 mm Body Height (A-SEAF8 only)	**–S** = 30 µ" (0.76 µm) Gold on contact area, Matte Tin on solder tail	**–04** **–06** **–08**	**–3** = Lead-Free Solder Crimp	**–GP** = Guide Post (A-SEAM8 only)	**–K** = Polyimide film Pick & Place Pad

A-SEAM8

Board Mates:
A-SEAF8





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

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

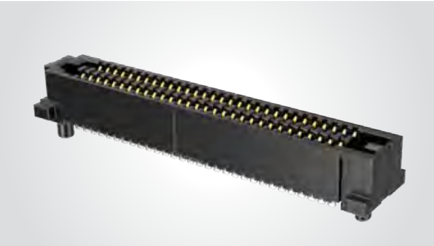
MATED HEIGHTS*

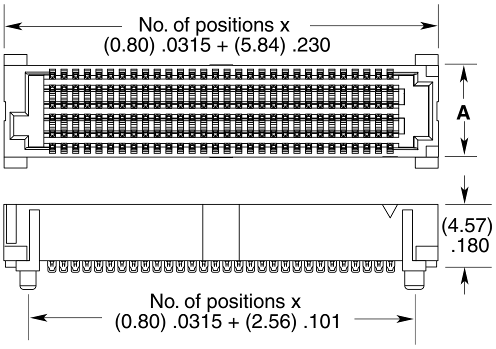
A-SEAF8 LEAD STYLE	A-SEAM8 LEAD STYLE	
	-S02.0	-S05.0
-05.0	(7.00) .276	(10.00) .394

*Processing conditions will affect mated height.

A-SEAF8

Board Mates:
A-SEAM8





Notes:
Severe Environment Testing qualified.
Visit **samtec.com/set**

Some sizes, styles and options are non-standard, non-returnable

LP ARRAY™

LOW PROFILE OPEN-PIN-FIELD ARRAYS

(1.27 mm) .050" PITCH

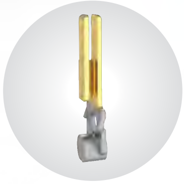
NRZ 28 Gbps

PAM4 56 Gbps

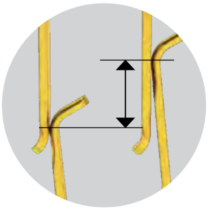
FEATURES & BENEFITS

- 4 mm, 4.5 mm, 5 mm stack heights
- Up to 400 I/Os
- 4, 6 and 8 row designs
- .050" (1.27 mm) pitch
- Dual beam contact system
- Solder crimp termination for ease of processing
- Board stacking standoffs available to assist with unmating and reduce risk for component damage on board

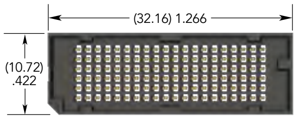
A-LPAF
Dual Beam Contact



A-LPAM
Dual Blade Terminal

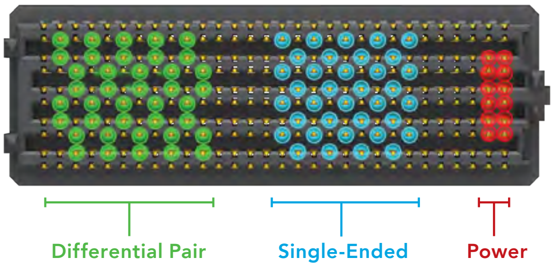


(0.51 mm) .020"
Nominal Wipe



A-LPAM Series; 120 pins

MAXIMUM GROUNDING & ROUTING FLEXIBILITY



KEY SPECIFICATIONS (A-LPAM/A-LPAF)

PITCH	TOTAL PINS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	CURRENT RATING	WORKING VOLTAGE	LEAD-FREE SOLDERABLE
1.27 mm x 1.27 mm	Up to 400 I/Os	Black LCP	Copper Alloy	Au or Sn over 50 µ" (1.27 µm) Ni	2.2 A per pin (8 adjacent pins powered)	250 VAC/354 VDC	Yes

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

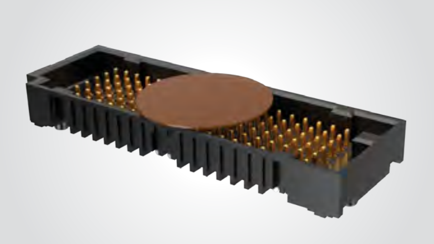
samtec

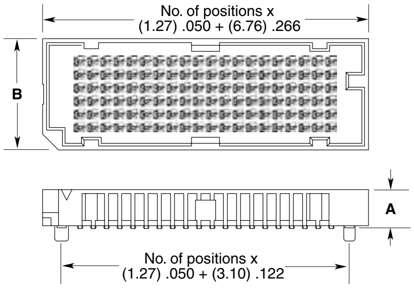
(1.27 mm) .050" PITCH • LOW PROFILE OPEN-PIN-FIELD ARRAYS

SERIES	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	K	TR
A-LPAM Terminal **A-LPAF** Socket	**–10, –20, –30, –40,** **–50** (-08 rows only)	**–01.0** = (1.0 mm) .039" (A-LPAM only) **–01.5** = (1.5 mm) .060" (A-LPAM only) **–03.0** = (3.0 mm) .118" (A-LPAF only) **–03.5** = (3.5 mm) .138" (A-LPAF only)	**–L** = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on solder tail	**–04** **–06** **–08**	**–2** = Lead-Free Solder Crimp	**–K** = Polyimide film Pick & Place Pad	**–TR** = Tape & Reel

A-LPAM

Board Mates:
A-LPAF



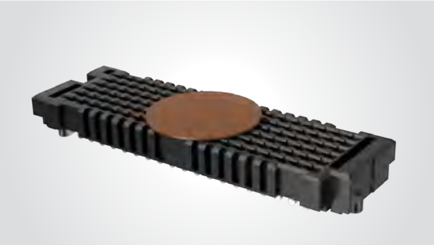


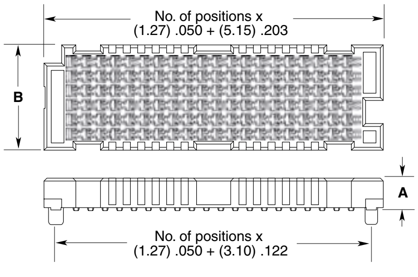
NO. OF ROWS	B
–04	(8.18) .322
–06	(10.72) .422
–08	(13.26) .522

LEAD STYLE	A
-01.0	(3.68) .145
-01.5	(4.19) .165

A-LPAF

Board Mates:
A-LPAM





NO. OF ROWS	B
–04	(6.71) .264
–06	(9.25) .364
–08	(11.79) .464

LEAD STYLE	A
-03.0	(2.79) .110
-03.5	(3.30) .130

MATED HEIGHTS*

A-LPAM LEAD STYLE	A-LPAF LEAD STYLE	
	-03.0	-03.5
-01.0	(4.00) .157	(4.50) .177
-01.5	(4.50) .177	(5.00) .197

*Processing conditions will affect mated height.

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

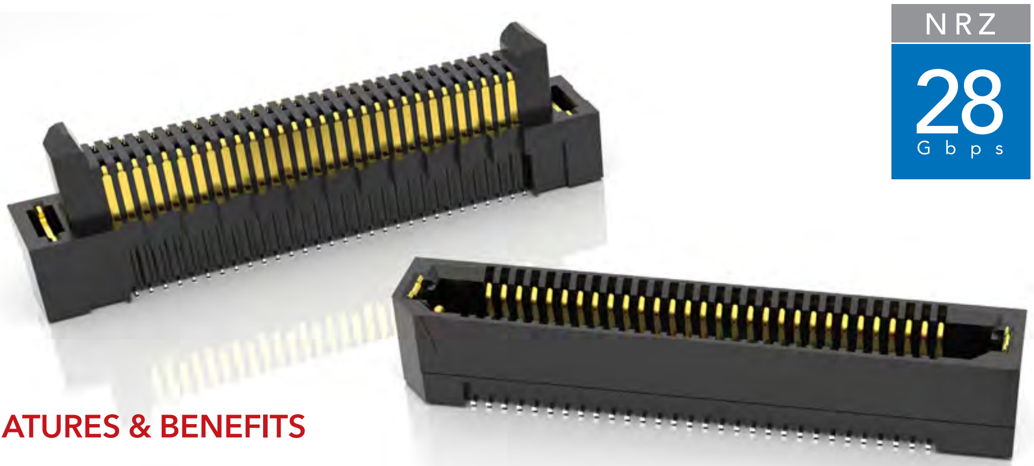
Due to technical progress, all designs, specifications and components are subject to change without notice.

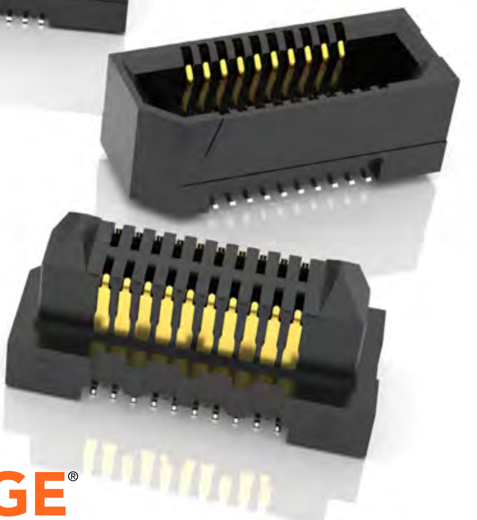
Samtec shall only comply with IATF-16949 on products it certifies as Automotive Custom Design "ACD" or on those designated with "A-" Samtec part # prefix. "A-" products are designed to Samtec's specifications not customers' specifications. Contact autosalesgroup@samtec.com with questions.

RUGGED HIGH-SPEED STRIPS

NRZ
28 Gbps

PAM4
56 Gbps

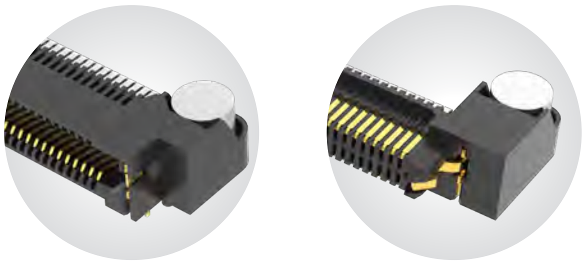




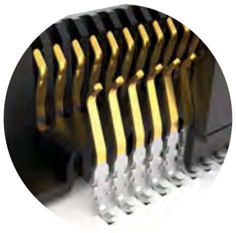
FEATURES & BENEFITS

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

- Up to 1.5 mm contact wipe for a reliable connection
- Choice of 0.50 mm or 0.80 mm pitch
- 20 to 200 positions
- 0.50 mm pitch system offers up to 40% space savings vs. 0.80 mm pitch
- Rugged latching, locking and 360° shielding available
- Severe Environment Testing qualified (A-ERM8/A-ERF8). Visit **samtec.com/set**



Right-angle available for coplanar and perpendicular applications.



Edge Rate® contact system reduces broadside coupling

KEY SPECIFICATIONS

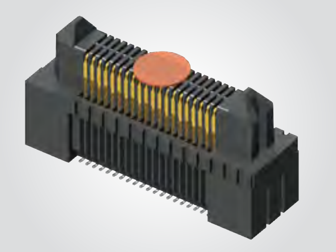
SERIES	PITCH	INSULATOR MATERIAL	TERMINAL MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	LEAD-FREE SOLDERABLE
A-ERM5/A-ERF5	0.50 mm	Black LCP	Phosphor Bronze or BeCu (A-ERM5); BeCu (A-ERF5)	Au or Sn over 50 µ" (1.27 µm) Ni	-55 °C to +125 °C	1.5 A	190 VAC/269 VDC	Yes
A-ERM8/A-ERF8	0.80 mm		Phosphor Bronze or BeCu (A-ERM8); BeCu (A-ERF8)			1.4 A	225 VAC/318 VDC	

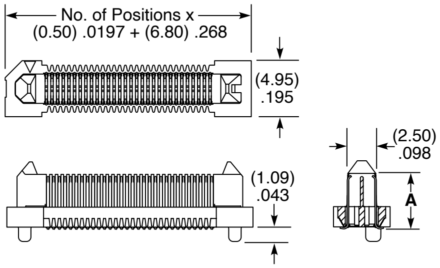
(0.50 mm) .0197" PITCH • RUGGED HIGH-SPEED STRIPS

SERIES	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	DV	OPTIONS	PICK & PLACE PAD	TR
A-ERM5 = Header **A-ERF5** = Socket	**–010, –020, –030, –040, –050, –060, –070, –075**	**–02.0** = 2 mm Body Height (A-ERM5 only) (Not available with –K–TR) **–04.0** = 4 mm Body Height (A-ERM5 only) **–05.0** = 5 mm Body Height **–07.0** = 7 mm Body Height (A-ERF5 only & Available up to 50 positions only)	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on Tail		(Not required. Only specify one option in callout. Will only mate with a corresponding option) **–FL** = Friction Lock (max. –030 positions) **–WT** = Weld Tab **–L** = Latching (Available with –02.0 and –05.0 Lead Styles only)	(Required in callout) **–K** = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad (A-ERM5 only) = (6.00 mm) .236" DIA Polyimide Film Pick & Place Pad (A-ERF5 only) **–P** = Plastic Pick & Place Pad	**–TR** = Tape & Reel

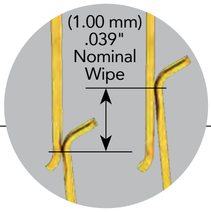
EDGE® RATE SYSTEM

A-ERM5
Board Mates:
A-ERF5





LEAD STYLE	A
–02.0	(4.84) .191
–04.0	(6.84) .269
–05.0	(7.84) .309
-07.0	N/A



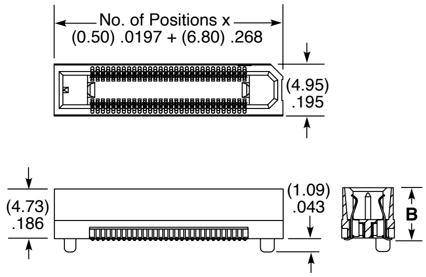
MATED HEIGHT*

A-ERM5 LEAD STYLE	A-ERF5 LEAD STYLE	
	–05.0	–07.0
-02.0	(7.00) .276	(9.00) .354
-04.0	(9.00) .354	(11.00) .433
-05.0	(10.00) .394	(12.00) .472

*Processing conditions will affect mated height.

EDGE® RATE SYSTEM

A-ERF5
Board Mates:
A-ERM5



LEAD STYLE	B
–02.0	N/A
–04.0	N/A
–05.0	(4.91) .193
-07.0	(6.91) .272

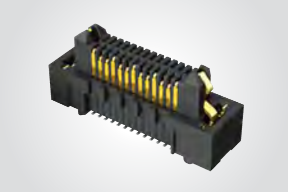
Note:
Some lengths, styles and options are non-standard, non-returnable.

PAM4 56 Gbps

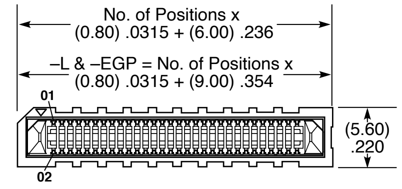
(0.80 mm) .0315" PITCH • RUGGED HIGH-SPEED HEADERS & SOCKETS

TYPE	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	DV	OPTIONS	TR
A-ERM8 = Header **A-ERF8** = Socket	**–005, –010, –011, –013, –020, –025, –030, –035, –040, –049, –050, –060, –070, –075, –100** (100 Position Only Available with A-ERM8–09.0 & A-ERF8–05.0 Lead Styles; –L , –EGP or –TR not available)	**Specify LEAD STYLE from Chart**	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail		**–DS** = Differential Pair (A-ERM8 –05.0 Lead Style with –010, –013, –025, –049 Positions only) (–P not available) **–L** = Latching (A-ERM8 –03.0, –05.0 & –09.0 Lead Styles only & –EGP Option not available) (A-ERF8 –L & –EGP Options not available) **–EGP** = Extended Guide Post (A-ERM8 –05.0 & A-ERF8 –07.0 Lead Style Only & –L Option not available) **–DSP** = Differential Pair with Extended Guide Post (A-ERM8 –05.0 Lead Style with –013 and –025 Positions only) **–K** = Polyimide Film Pick & Place Pad (–02.0 Lead Style not available) **–P** = Pick & Place Pad (A-ERM8 –02.0, –03.0 & –05.0 Lead Styles only) (–DS not available)	**–TR** = Tape & Reel (–100 Positions not available)

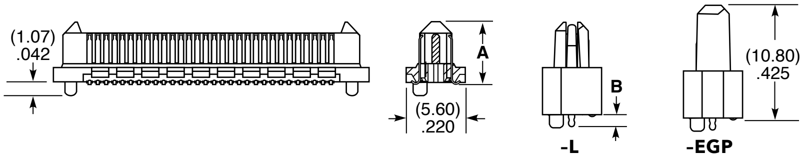
A-ERM8
Board Mates:
A-ERF8



EDGE® RATE SYSTEM



A-ERM8 LEAD STYLE	A	B
–02.0	(5.97) .235	N/A
–03.0	(6.97) .274	(1.60) .063
–05.0	(8.91) .351	(1.17) .046
–08.0	(11.91) .469	N/A
-09.0	(12.91) .508	(1.60) .063

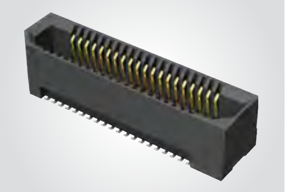


MATED HEIGHT*

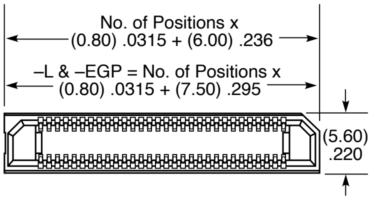
A-ERM8 LEAD STYLE	A-ERF8 LEAD STYLE –05.0	A-ERF8 LEAD STYLE –07.0	A-ERF8 LEAD STYLE –09.0
–02.0	(7.00) .276	(9.00) .354	(11.00) .433
–03.0	(8.00) .315	(10.00) .394	(12.00) .472
–05.0	(10.00) .394	(12.00) .472	(14.00) .551
–08.0	(13.00) .512	(15.00) .591	(17.00) .669
–09.0	(14.00) .551	(16.00) .630	(18.00) .709

*Processing conditions will affect mated height.

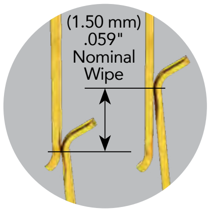
A-ERF8
Board Mates:
A-ERM8

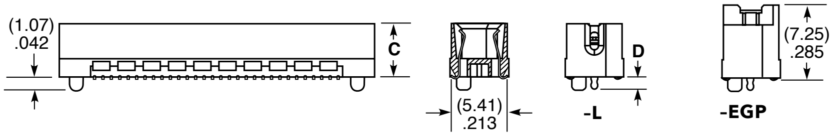


EDGE® RATE SYSTEM



A-ERF8 LEAD STYLE	C	D
–05.0	(5.34) .210	(1.60) .063
–07.0	(7.25) .285	(1.17) .046
-09.0	(9.34) .368	(1.60) .063





Notes:
Severe Environment Testing qualified (A-ERM8/A-ERF8). Visit samtec.com/set

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.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

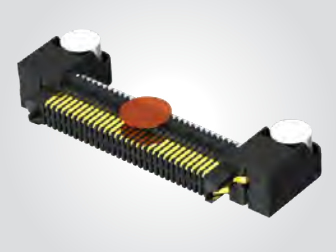
NRZ
28
Gbps

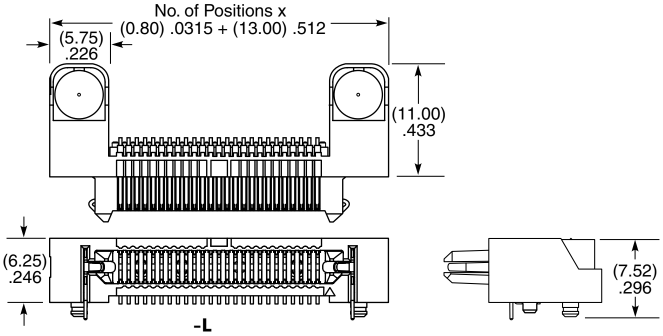
(0.80 mm) .0315" PITCH • RIGHT-ANGLE HIGH-SPEED HEADERS & SOCKETS

A-ERM8	–	POSITIONS PER ROW	–	01	–	PLATING OPTION	–	D	–	RA	–	OPTIONS	–	TR
Right-Angle Terminal		**–010, –013, –020, –025, –030, –040, –049, –050, –060, –070, –075**				**–L** = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on tail						**–K** = (6.00 mm) .236" DIA Polyimide Film Pick & Place Pad **–L** = Latching **–DS** = Differential Pair (–013, –025 Positions only) (Hot Swap)		**TR** = Tape & Reel

EDGE® RATE SYSTEM

A-ERM8-RA
Board Mates:
A-ERF8

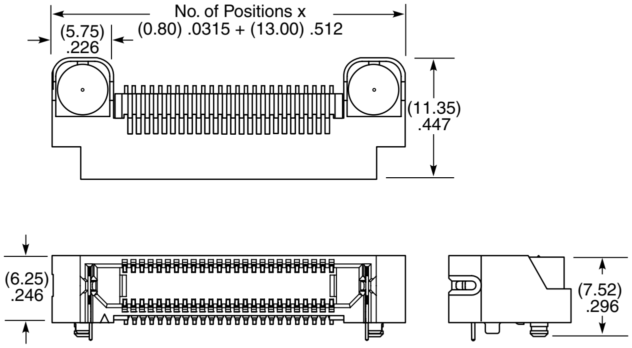




A-ERF8	–	POSITIONS PER ROW	–	01	–	PLATING OPTION	–	D	–	RA	–	OPTIONS	–	TR
Right-Angle Socket		**–010, –013, –020, –025, –030, –040, –049, –050, –060, –070, –075**				**–L** = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on tail						**–L** = Latching (Not available with -EGP Option) **–EGP** = Extended Guide Post (Not available with –L Option)		**TR** = Tape & Reel

EDGE® RATE SYSTEM

A-ERF8-RA
Board Mates:
A-ERM8



QSERIES®

HIGH-SPEED GROUND PLANE MEZZANINE CONNECTORS

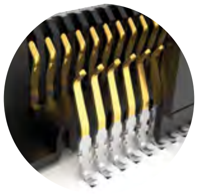
NRZ
28
Gbps

FEATURES & BENEFITS

- Designed for high-speed board-to-board applications where signal integrity is essential
- Q Strip® low profile connectors on a 0.80 mm pitch
- Q Rate® slim connectors with Edge Rate® contacts on a 0.80 mm pitch and an increased 1.20 mm contact wipe
- Q2™ rugged connectors on a 0.635 mm pitch with increased insertion depth for rugged applications
- EMI shielding
- Differential pair and single-ended routing

10 YEAR MFG WITH 50 µ" GOLD
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

Precision Board Stacking Standoffs

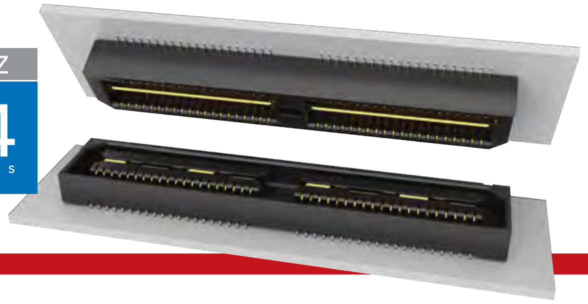


Rugged Edge Rate® Contact System

Differential Pairs Reduce Noise

INTEGRAL GROUND / POWER PLANE

- Surface mount ground plane between two signal rows improves electrical performance
- Significantly reduces row-to-row crosstalk
- Integral metal plane for power to 25 Amps



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

A-QTE
Board Mates:
A-QSE

A-QSE
Board Mates:
A-QTE

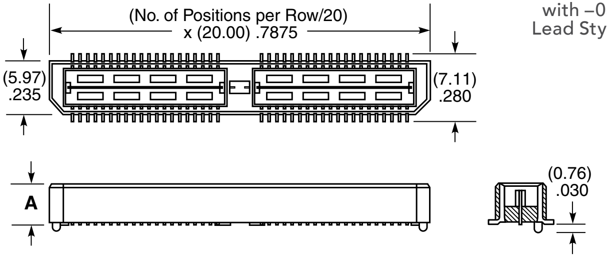
QSTRIP®

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

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Current Rating:
Contact:
2 A per pin (2 pins powered)
Ground Plane:
23 A per ground plane
(1 ground plane powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
225 VAC/318 VDC
Max Cycles:
100

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

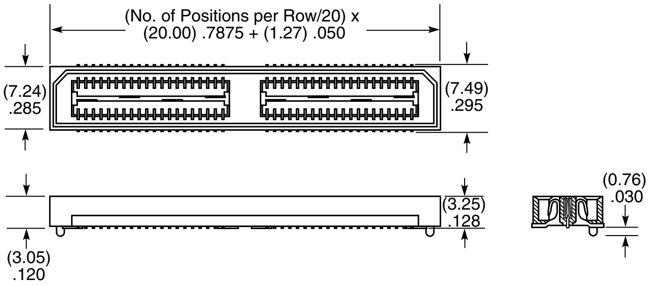


PROCESSING

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

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

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



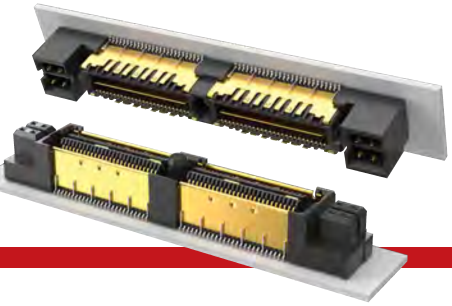
Note:
Some lengths, styles and options are non-standard, non-returnable.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE

NRZ 14 Gbps



(0.635 mm) .025" PITCH • A-QMSS/A-QFSS SERIES

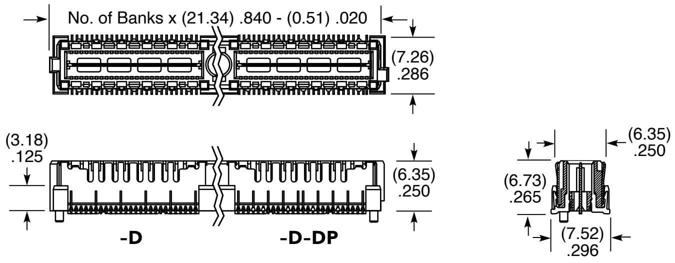
A-QMSS
Board Mates:
A-QFSS

A-QFSS
Board Mates:
A-QMSS

A-QMSS	PINS PER ROW NO. OF PAIRS	06.75	PLATING OPTION	TYPE	A	OTHER OPTION
	–026, –052, –078 (52 total pins per bank / 40 signals + 12 grounds to shield = –D) **–016, –032, –048** (16 pairs per bank = –D–DP)		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–D** = Single-Ended **–D–DP** = Differential Pair		**–K** = (5.50 mm) .217" DIA Polyimide film Pick & Place Pad **–TR** = Tape & Reel

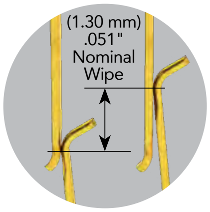
SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Terminal, Ground Plane & Shield Material:
Phosphor Bronze
Plating:
Au over 50 µ" (1.27 µm) Ni
(Tin on Ground Plane Tail)
Operating Temp Range:
-55 °C to +125 °C
Current Rating:
Contact:
3.4 A per pin
(4 adjacent pins powered)
Ground Plane:
7.8 A per ground plane
(2 ground planes powered)
Voltage Rating:
300 VAC/424 VDC



PROCESSING

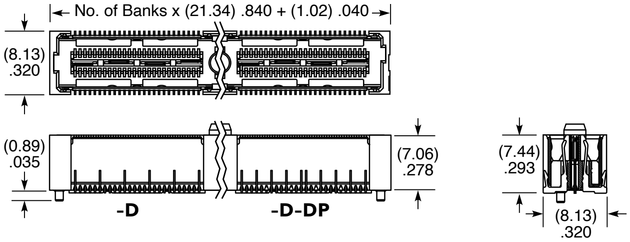
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (026-078)
Board Stacking:
For applications requiring more than two connectors contact ipg@samtec.com



A-QFSS	PINS PER ROW NO. OF PAIRS	04.25	PLATING OPTION	TYPE	A	OTHER OPTION
	–026, –052, –078 (52 total pins per bank / 40 signals + 12 grounds to shield = –D) **–016, –032, –048** (16 pairs per bank = –D–DP)		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–D** = Single-Ended **–D–DP** = Differential Pair		**–P** = Plastic Pick & Place Pad **–TR** = Tape & Reel

ALSO AVAILABLE

For edge mount option, contact AutoSalesGroup@samtec.com



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

NRZ 28 Gbps

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

A-QRM8
Board Mates:
A-QRF8

A-QRF8
Board Mates:
A-QRM8

QRATE®

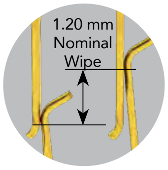
SPECIFICATIONS

Insulator Material:
Black LCP
A-QRM8 Terminal Material:
Phosphor Bronze
A-QRF8 Contact Material:
BeCu
Ground Plane Material:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Current Rating:
Contact:
2.2 A per pin (2 pins powered)
Ground:
8.5 A per ground plane
(1 ground plane powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
215 VAC/ 304 VDC
Max Cycles:
100

PROCESSING

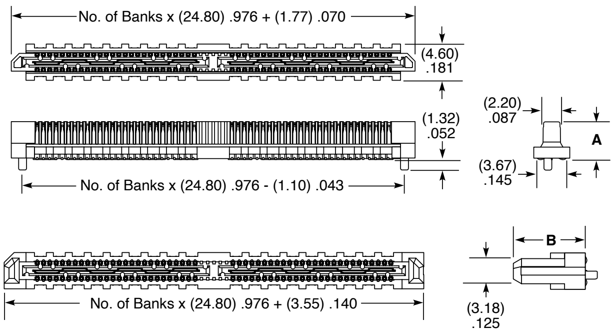
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max
(018-026)
0.15 mm) .006" max
(036-078)*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)
Board Stacking:
For applications requiring
more than two connectors
contact ipg@samtec.com

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES



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

A-QRM8	PINS PER ROW NO. OF PAIRS	LEAD STYLE	PLATING OPTION	TYPE	A	OTHER OPTIONS
	–026, –052, –078 (52 total pins per bank = –D) **–018, –036, –054** (18 pairs per bank = –D–DP)	**–02.0** = 2 mm Body Height (N/A –054 & –078 Positions) **–05.0** = 5 mm Body Height **–07.0** = 7 mm Body Height	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–D** = Single-Ended **–D-DP** = Differential Pair		**–GP** = Guide Post **–K** = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad **–TR** = Tape & Reel (–018, –026, –036, –052 only)



-GP OPTION

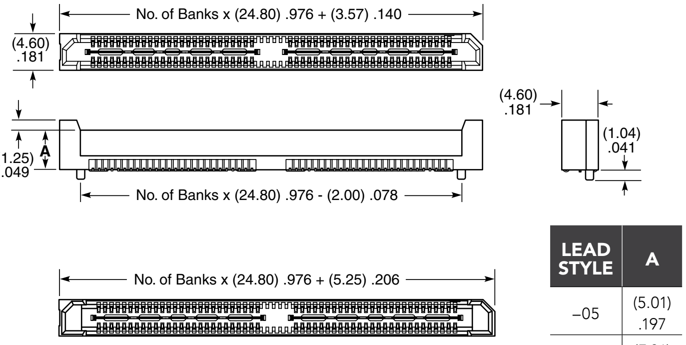
LEAD STYLE	A	B
–02	(4.81) .189	(6.12) .241
–05	(7.81) .307	(9.12) .359
–07	(9.78) .385	(11.12) .438

A-QRF8	PINS PER ROW NO. OF PAIRS	LEAD STYLE	PLATING OPTION	TYPE	A	OTHER OPTIONS
	–026, –052, –078 (52 total pins per bank = –D) **–018, –036, –054** (18 pairs per bank = –D–DP)	**–05.0** = 5 mm Body Height **–07.0** = 7 mm Body Height	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–D** = Single-Ended **–D-DP** = Differential Pair		**–GP** = Guide Post **–K** = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad **–TR** = Tape & Reel (–018, –026, –036, –052 only)

MATED HEIGHT*

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

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



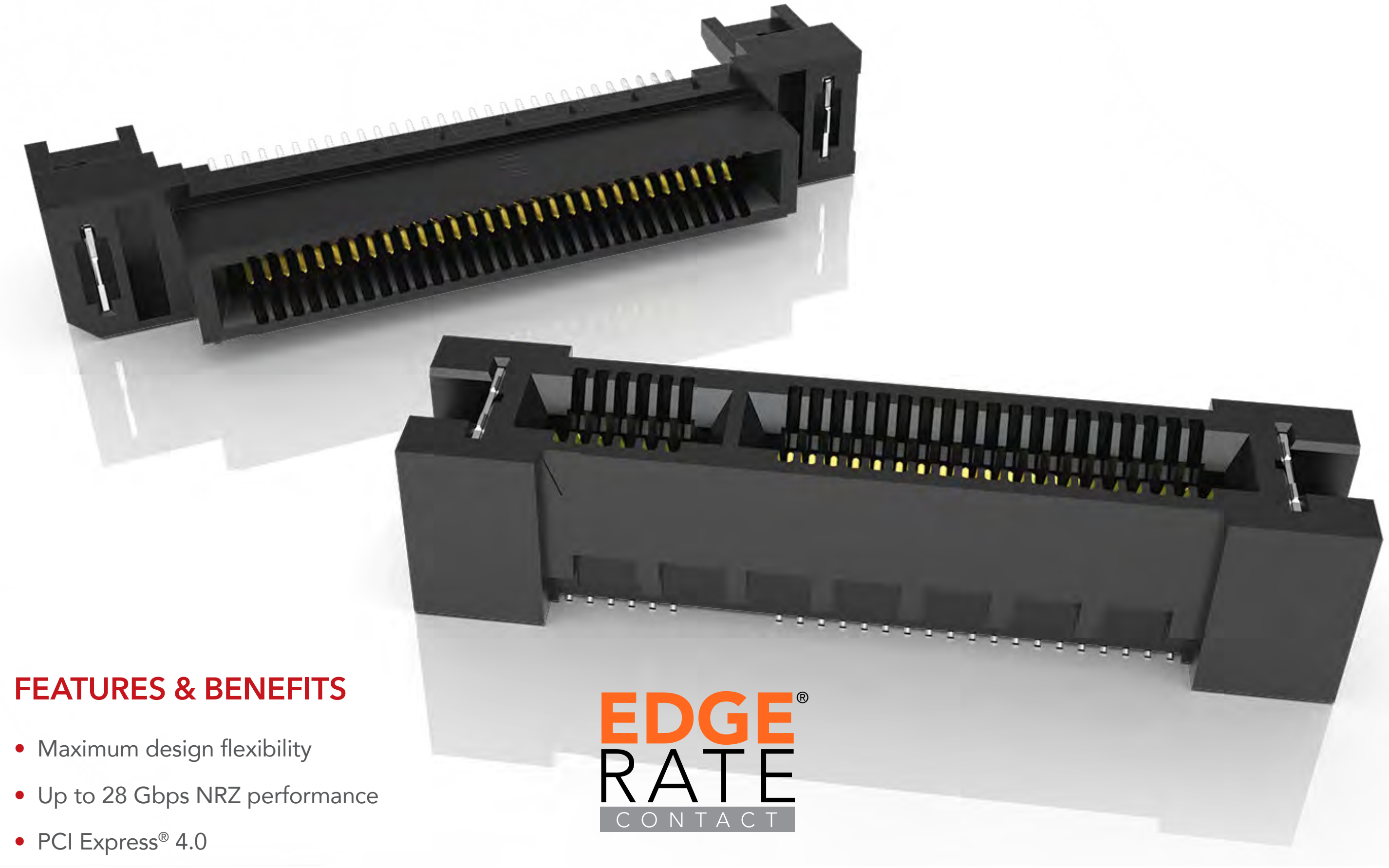
-GP OPTION

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

GENERATE®

HIGH-SPEED EDGE CARD SYSTEMS

0.80 mm (.0315") PITCH



EDGE® RATE CONTACT

FEATURES & BENEFITS

- Maximum design flexibility
- Up to 28 Gbps NRZ performance
- PCI Express® 4.0
- Edge Rate® contacts optimized for signal integrity performance and high-cycle life
- Up to 200 positions available
- Vertical and right-angle orientations
- Power/signal combo available
- Extended Life Product™ (E.L.P.™)

PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG.

Rugged tucked beam technology (A-HTEC8)

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

KEY SPECIFICATIONS

SERIES	TOTAL POSITIONS	INSULATOR MATERIAL	CONTACT MATERIAL	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	LEAD-FREE SOLDERABLE
A-HTEC8	20-200	Black LCP	Copper Alloy	-55 °C to +125 °C	3.0 A (2 pins)	215 VAC/304 VDC	Yes
A-HSEC8	18-200	Black LCP	BeCu	-55 °C to +125 °C	2.8 A (2 pins)	240 VAC/339 VDC	Yes

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

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE

PCI EXPRESS® 4.0 CAPABLE

NRZ 28 Gbps

(0.80 mm) .0315" PITCH • RUGGED HIGH-SPEED EDGE CARD SOCKET

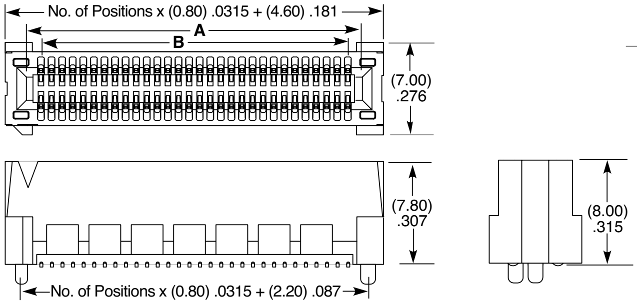
A-HTEC8	–	1	POSITIONS PER ROW	–	01	–	PLATING OPTION	–	DV	–	OTHER OPTION	–	TR
			10, 20, 30, 40, 50, 60, 80, 100				**–L** = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on tail				**–K** = (7.00 mm) .276" DIA Polyimide Pick & Place Pad		Leave blank for Tray Packaging **–TR** = Tape & Reel (10 thru 60 positions only)

GENERATE®

A-HTEC8

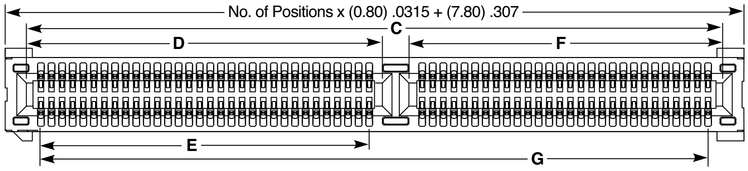
Card Mates:
(1.60 mm) .062" thick card

POSITIONS PER ROW	A	B
10	(9.40) .370	(7.20) .283
20	(17.40) .685	(15.20) .598
30	(25.40) 1.000	(23.20) .913



10, 20 & 30 POSITIONS

POSITIONS PER ROW	C	D	E	F	G
40	(36.60) 1.440	(18.90) .744	(16.80) .661	(15.70) .618	(34.40) 1.354
50	(44.60) 1.756	(22.90) .902	(20.80) .819	(19.70) .776	(42.40) 1.669
60	(52.60) 2.071	(26.90) 1.059	(24.80) .976	(23.70) .933	(50.40) 1.984
80	(68.60) 2.701	(26.90) 1.059	(24.80) .976	(39.70) 1.563	(66.40) 2.614
100	(84.60) 3.331	(26.90) 1.059	(24.80) .976	(55.70) 2.193	(82.40) 3.244



40, 50, 60, 80 & 100 POSITIONS

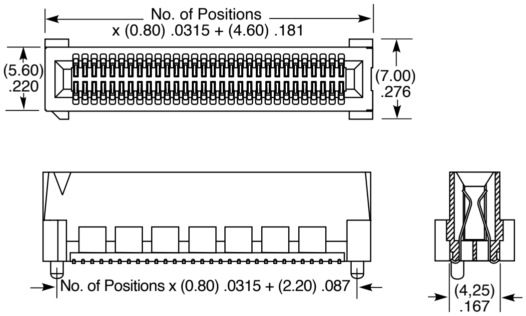
Note:
Some sizes, styles and options are non-standard, non-returnable.

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

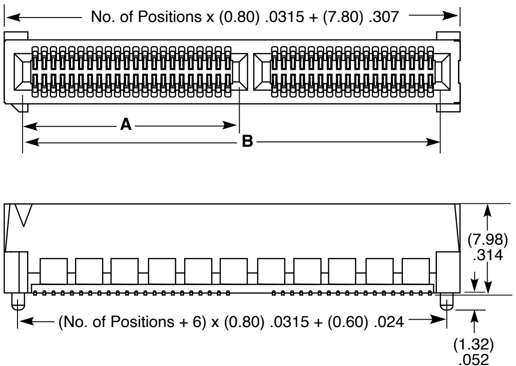
A-HSEC8	-	1	-	POSITIONS PER ROW	-	CARD THICKNESS	-	PLATING OPTION	-	DV	-	A	-	OTHER OPTIONS	-	TR
				10, 20, 30, 40, 50, 60, 70, 80, 100		**–01** = (1.60 mm) .062" thick card **–03** = (2.36 mm) .093" thick card		**–L** = 10 µ" (0.25 µm) Gold on contact area, Matte Tin on tail						**–K** = Polyimide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

A-HSEC8-DV

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



10, 20 & 30 POSITIONS



40 THRU 100 POSITIONS

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

Positions where no dimensions are given do not have keying feature.

† Available with -01 Card Only

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

NRZ
28
Gbps

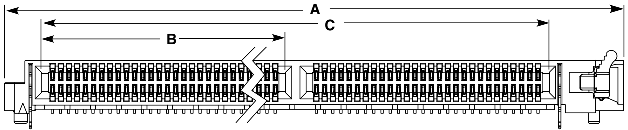
(0.80 mm) .0315" PITCH • RIGHT-ANGLE & POWER COMBO SOCKET

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

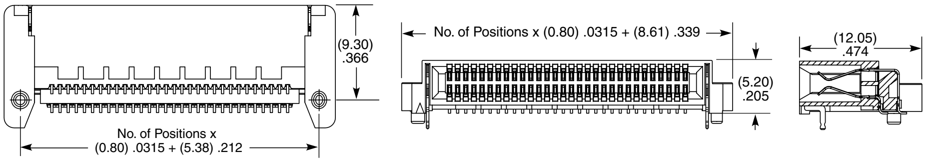
A-HSEC8-RA

Card Mates:
(1.60 mm)
.062" card

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



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



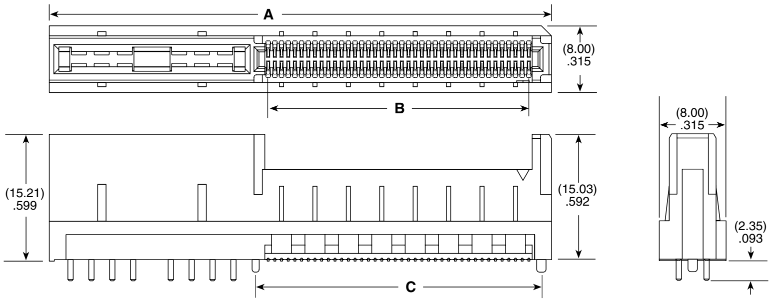
10, 20 & 30 POSITIONS

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

A-HSEC8-PV

Card Mates:
(1.60 mm)
.062" card

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

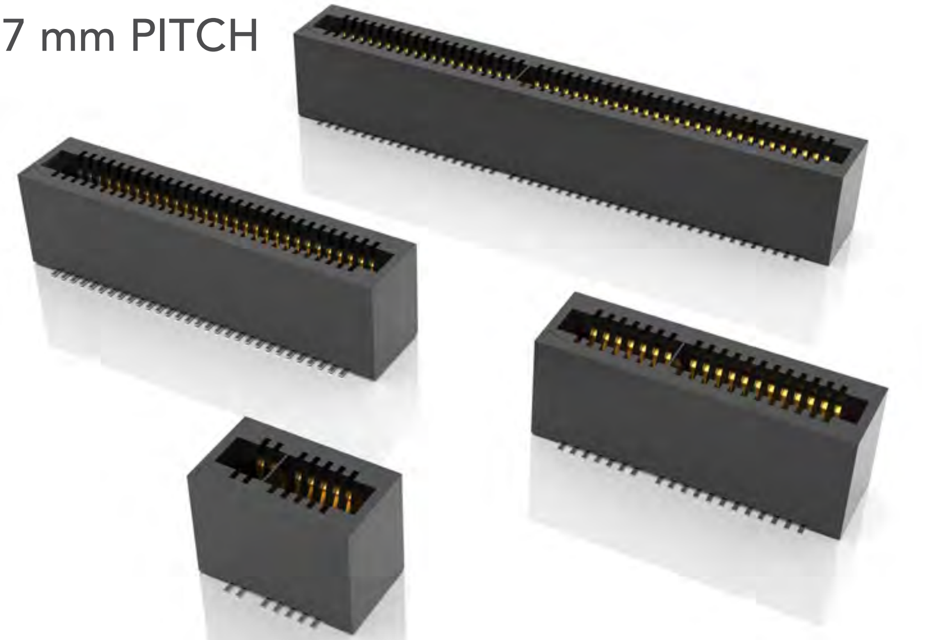


Note:
Some sizes, styles and options are non-standard, non-returnable.

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

MICRO EDGE CARD SYSTEMS

0.635 mm, 1.00 mm, 1.27 mm PITCH



FEATURES & BENEFITS

- Solutions for (1.60 mm) .062" and (2.36 mm) .093" thick cards
- Double row design with up to 140 total pins
- 0.635 mm, 1.00 mm and 1.27 mm pitch
- Non-polarization option available
- Contact **autosalesgroup@samtec.com** for information about right-angle or edge mount options.

KEY SPECIFICATIONS

SERIES	PITCH	TOTAL POSITIONS	INSULATOR MATERIAL	CONTACT MATERIAL	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	LEAD-FREE SOLDERABLE
A-MEC6	0.635 mm	20-140	Black LCP	Phosphor Bronze	-55 °C to +125 °C	2.4 A (2 pins)	185 VAC/262 VDC	Yes
A-MEC1	1.00 mm	10-140	Black LCP	BeCu	-55 °C to +125 °C	2.2 A (2 pins)	250 VAC/354 VDC	Yes
A-MECF	1.27 mm	10-100	Black/Natural LCP	BeCu	-55 °C to +125 °C	3.5 A (2 pins)	280 VAC/396 VDC	Yes

(0.635 mm) .025" PITCH • VERTICAL

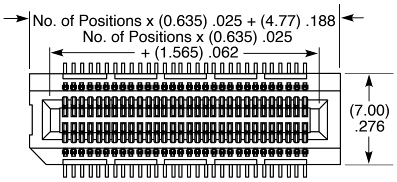
A-MEC6	-	1	POSITIONS PER ROW	-	02	-	PLATING OPTION	-	DV	-	A	-	OPTION	-	TR
			10, 20, 30, 40, 50, 60, 70				**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail						**-K** = (5.50 mm) 2.17" DIA Polyimide Pick & Place Pad		**–TR** = Tape & Reel

A-MEC6-DV

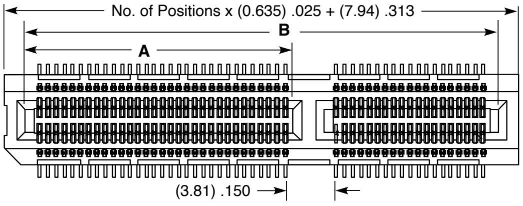
Card Mates:
(1.60 mm) .062" thick card

14
Gbps

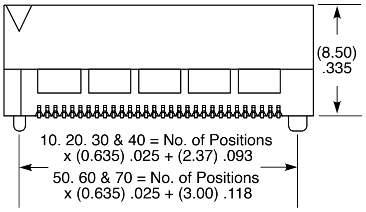
POSITIONS PER ROW	A	B
50	(21.06) .829	(36.49) 1.437
60	(24.87) .979	(42.84) 1.687
70	(28.68) 1.129	(49.19) 1.937

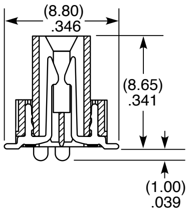


10, 20, 30 & 40 POSITIONS



50, 60 & 70 POSITIONS





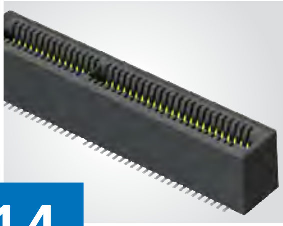
Note:
Some lengths, styles and options are non-standard, non-returnable.

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

A-MEC1	–	1	POSITIONS PER ROW	–	02	–	PLATING OPTION	–	D	–	NP	–	OTHER OPTIONS	–	TR
			05, 08, 10, 20, 30, 40, 50, 60, 70				**–F** = Gold flash on contact, Matte Tin on tail **–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail				Leave blank for polarization **–NP** = No Polarization (05, 08, 20 & 30 positions only)		**–A** = Alignment Pin **–K** = (7.87 mm) .310" DIA Polyimide film Pick & Place Pad		**–TR** = Tape & Reel (05-60 only)

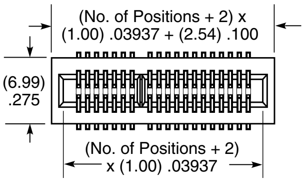
A-MEC1

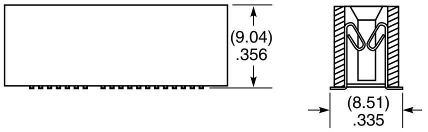
Card Mates:
(1.60 mm) .062"
thick card

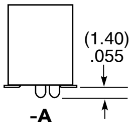


14 Gbps

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







-A OPTION

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

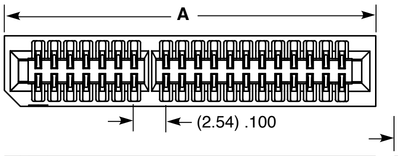
(1.27 mm) .050" PITCH • MINI EDGE CARD SOCKET

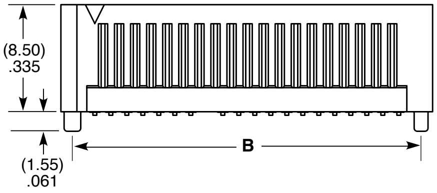
A-MECF	–	POSITIONS PER ROW	–	CARD THICKNESS	–	PLATING OPTION	–	DV	–	OPTION	–	TR
		–05, –08, –20, –30, –40, –50		**–01** = (1.60 mm) .062" thick card **–02** = (2.36 mm) .093" thick card		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail				**–WT** = Weld Tabs (Standard on –02 card thickness, optional on –01 card thickness) **–K** = Polyimide film Pick & Place pad		**–TR** = Tape & Reel

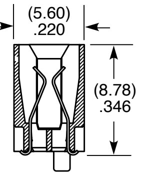
A-MECF

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

25 Gbps







POSITIONS PER ROW	A	B
–05	(10.46) .412	(8.64) .340
–08	(14.27) .562	(12.45) .490
–20	(29.51) 1.162	(27.69) 1.090
–30	(42.21) 1.662	(40.39) 1.590
–40	(54.91) 2.162	(53.09) 2.090
–50	(67.61) 2.662	(65.79) 2.590

POSITIONS PER ROW	POLARIZED POSITIONS (No Contact)
–05	3, 4
–08	5, 6
–20	15, 16
–30	21, 22
–40	31, 32
–50	41, 42

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

RAZOR™
BEAM
SYSTEM

FINE PITCH SELF MATING CONNECTORS

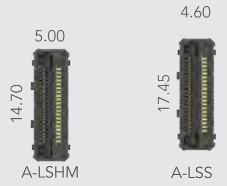
(0.50 mm) .197" and (0.635 mm) .025" PITCH

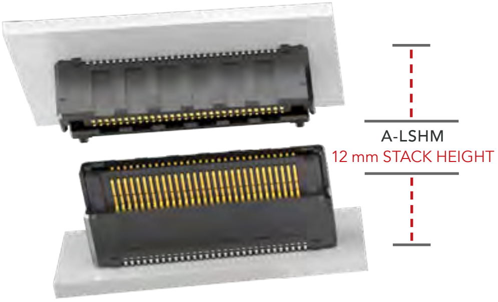
FEATURES & BENEFITS

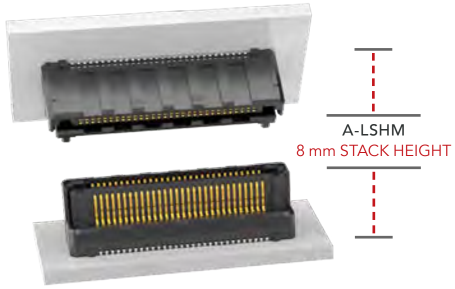
- Ten stack height options from 5.00 mm to 12.00 mm
- 0.50 mm or 0.635 mm pitches
- Audible click when mated
- Mating and unmating forces approximately 4-6x greater than typical micro pitch connectors
- Self-mating system reduces inventory cost
- Severe Environment Testing qualified. Visit **samtec.com/set**

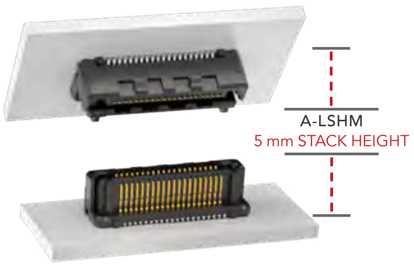
ACTUAL SIZE SHOWN SLIM BODY DESIGNS

(40 total positions each)









KEY SPECIFICATIONS

INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	SMT COPLANARITY	LEAD-FREE SOLDERABLE
Black LCP	Phosphor Bronze	Au or Sn over 50 µ" (1.27 µm) Ni	-55 °C to +125 °C	A-LSHM: 2.0 A per pin A-LSS: 1.7 A per pin	A-LSHM: 160 VAC/226 VDC A-LSS: 300 VAC/424 VDC	(0.10 mm) .004" max	Yes

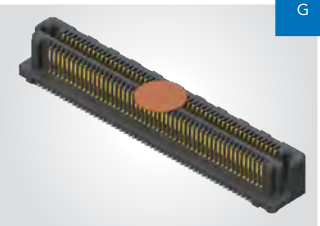
(0.50 mm) .0197" PITCH • RUGGED HERMAPHRODITIC CONNECTORS

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

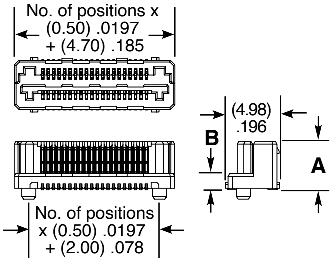
RAZOR™ BEAM SYSTEM

14 Gbps

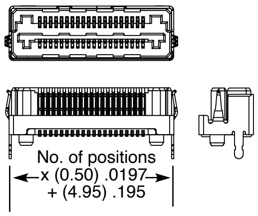
A-LSHM
Board Mates:
A-LSHM



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



-DV-N



-DV-S

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

*Processing conditions will affect mated height.

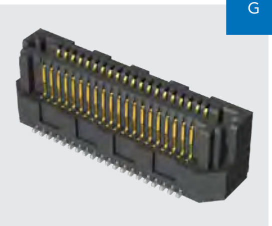
(0.635 mm) .025" PITCH • RUGGED HERMAPHRODITIC CONNECTORS

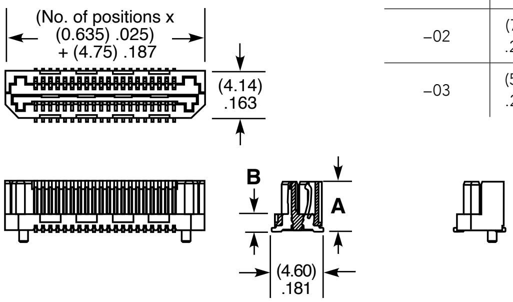
A-LSS	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	DV	A	K	TR
		10, 20, 30, 40, 50	Specify LEAD STYLE from chart	–L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail			–K = (3.50 mm) .138" DIA Polyimide film Pick & Place Pad	–TR = Tape & Reel

RAZOR™ BEAM SYSTEM

25 Gbps

A-LSS
Board Mates:
A-LSS





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

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

*Processing conditions will affect mated height.

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

ACD AUTOMOTIVE CERTIFIED DESIGN

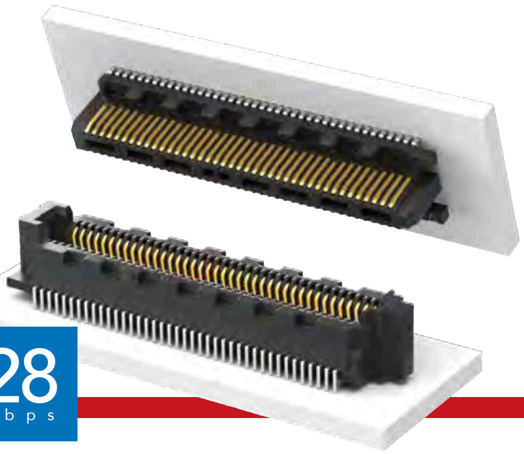
IATF 16949 CERTIFIED

PPAP ELIGIBLE

MICRO BLADE & BEAM SOCKET & HEADER

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

28 Gbps



A-SS4
Mates:
A-ST4

A-ST4
Mates:
A-SS4

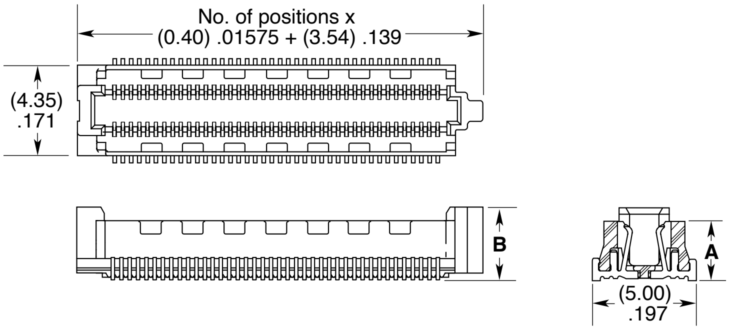
A-SS4	–	POSITIONS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	D	–	K	–	TR
		–10, –20, –30, –40, –50		**–3.00** = 3.00 mm **–3.50** = 3.50 mm		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail				(Required in callout) **–K** = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad		(Required in callout) **–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)
Voltage Rating:
155 VAC/219 VDC

PROCESSING

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



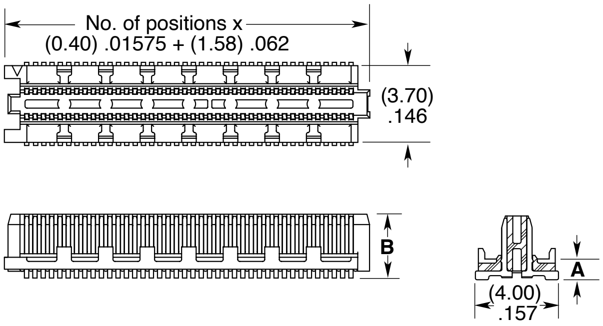
LEAD STYLE	A	B
–3.00	(2.85) .112	(3.50) .138
–3.50	(3.35) .132	(4.00) .157

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

MATED HEIGHT *

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

*Processing conditions will affect mated height.



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

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

ACD
AUTOMOTIVE CERTIFIED DESIGN

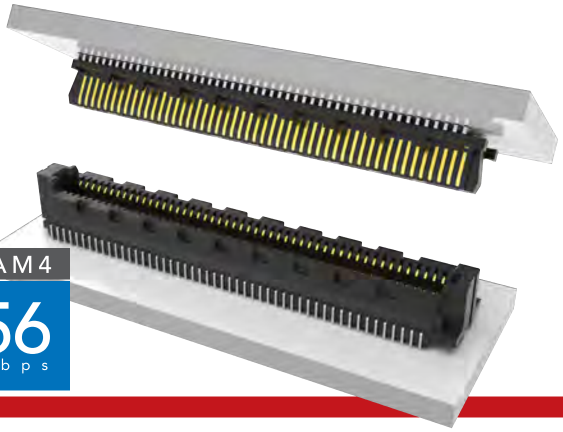
IATF 16949
CERTIFIED

PPAP
ELIGIBLE

MICRO BLADE & BEAM SOCKET & HEADER

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

PAM4
56
Gbps



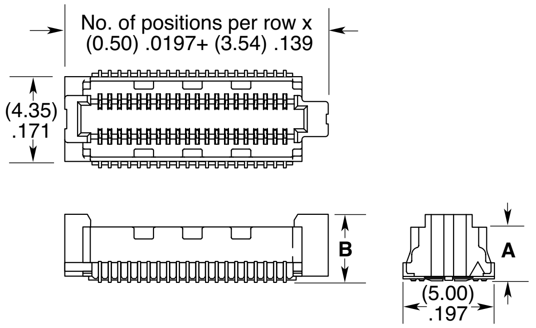
A-SS5
Mates:
A-ST5

A-ST5
Mates:
A-SS5

A-SS5	–	NO. OF POSITIONS	–	LEAD STYLE	–	PLATING OPTION	–	D	–	K	–	TR
		–10, –15, –20, –30, –40, –50, –60, –70, –80 (Per Row)		**–3.00** = 3.00 mm **–3.50** = 3.50 mm		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail				(Required in callout) **–K** = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad		(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)
Voltage Rating:
200 VAC/283 VDC



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

PROCESSING

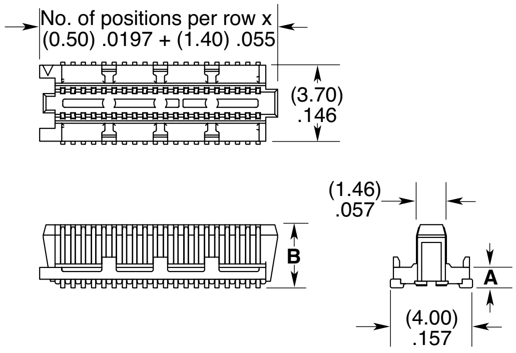
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max

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

MATED HEIGHT *

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

*Processing conditions will affect mated height.



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

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

mPOWER®

ULTRA MICRO POWER SYSTEM

(2.00 mm) .0787" PITCH

MAX
18
Amps

FEATURES & BENEFITS

- Up to 18 A per blade (1 blade powered)
- Choice of 2 to 10 positions
- 5 mm to 20 mm stack heights available
- Right-angle terminal and cable components available
- Tin or 10 µ" Gold plated power blades; 30 µ" Gold plating available to meet specific regulations
- Optional weld tabs
- Severe Environment Testing qualified (A-UMPT/A-UMPS). Visit samtec.com/set

CURRENT RATING (PER CONTACT)

A-UMPT/A-UMPS		
PINS	**-T**	**-L**
1	17.8 A	17.5 A
2	15.5 A	16.3 A
3	13.5 A	13.9 A
4	12.9 A	13.2 A
10	9.8 A	8.9 A

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

CREEPAGE & CLEARANCE

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

Selectively loading contacts achieves customer specific creepage and clearance requirements.

KEY SPECIFICATIONS (A-UMPT/A-UMPS)

STACK HEIGHTS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	VOLTAGE RATING	LEAD-FREE SOLDERABLE
5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 20 mm	Black LCP	Copper Alloy	Sn or Au over 50 µ" (1.27 µm) Ni	-55 °C to +105 °C with Tin -55 °C to +125 °C with Gold	460 VAC/ 651 VDC	Yes

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE

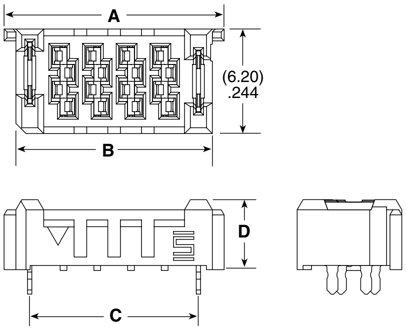
MAX 18 Amps

samtec

ULTRA MICRO POWER SOCKET

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

A-UMPS
Board Mates:
A-UMPT



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

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

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

A-UMPT LEAD STYLE	MATED HEIGHT		
	A-UMPS LEAD STYLE		
	–03.5	–05.5	–07.5
–01.5	(5.00) .197	(7.00) .276	(9.00) .354
–02.5	(6.00) .236	(8.00) .315	(10.00) .394
–06.5	(10.00) .394	(12.00) .472	(14.00) .551
–07.5	(11.00) .433	(13.00) .512	(15.00) .591
–12.5	(16.00) .630	(18.00) .709	(20.00) .787

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

PINS	–T	–L
1	17.8 A	17.5 A
2	15.5 A	16.3 A
3	13.5 A	13.9 A
4	12.9 A	13.2 A
10	9.8 A	8.9 A

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

Notes:
Severe Environment Testing qualified. Visit samtec.com/set

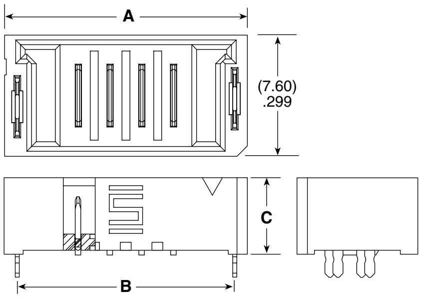
Some lengths, styles and otpons are non-standard, non-returnable

MAX
18
Amps

ULTRA MICRO POWER TERMINAL

A-UMPT	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	V	S	WELD TAB	LATCH OPTION	TR
A-UMPT **Board Mates:** A-UMPS	**–02, –03, –04, –05, –06, –07, –08, –09, –10**	**–01.5** = (01.5 mm) .059" **–02.5** = (02.5 mm) .098" **–06.5** = (06.5 mm) .256" **– 07.5** = (07.5 mm) .295" **– 12.5** = (12.5 mm) .492" (–W option required)	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail **–T** = Matte Tin			(Leave blank for no weld tab) **–W** = Weld Tab Through-hole (Required for –12.5 lead style)	(Leave blank for no latch) (Only available on –02.5 lead style) (Weld tab required) **–P** = Plastic top latch **–M** = Metal side latches	**–TR** = Tape & Reel

mPOWER®



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

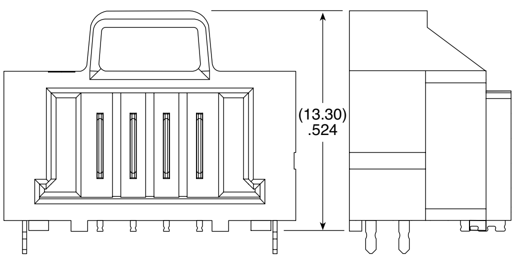
LEAD STYLE	C
–01.5	(4.80) .189
–02.5	(5.80) .228
–06.5	(9.55) .376
–07.5	(10.80) .425
–12.5	(15.80) .622

NO. OF POSITIONS	A	B	A	B
	(–P & No latch)		(–M latch)	
–02	(11.30) .445	(9.70) .382	(13.30) .524	(11.60) .457
–03	(13.30) .524	(11.70) .460	(15.30) .602	(13.60) .535
–04	(15.30) .603	(13.70) .539	(17.30) .681	(15.60) .614
–05	(17.30) .681	(15.70) .618	(19.30) .760	(17.60) .693
–06	(19.30) .760	(17.70) .697	(21.30) .839	(19.60) .772
–07	(21.30) .839	(19.70) .776	(23.30) .917	(21.60) .850
–08	(23.30) .917	(21.70) .854	(25.30) .996	(23.60) .929
–09	(25.30) .996	(23.70) .933	(27.30) 1.075	(25.60) 1.008
–10	(27.30) 1.075	(25.70) 1.012	(29.30) 1.154	(27.60) 1.087

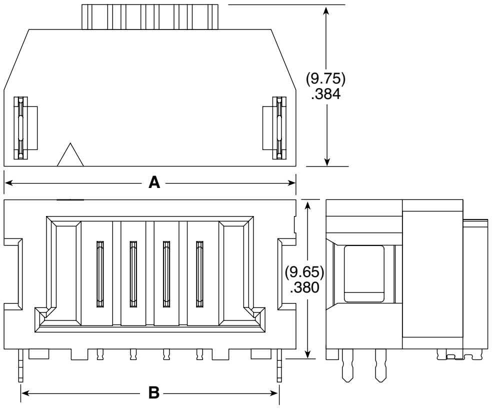
Notes:
Severe Environment Testing qualified.
Visit samtec.com/set

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

A-UMPT	NO. OF POSITIONS	01	PLATING OPTION	RA	WELD TAB	LATCH OPTION	TR
A-UMPT-RA **Board Mates:** A-UMPS	**–02, –03, –04, –05, –06, –07, –08, –09, –10**		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail **–T** = Matte Tin		**–WT** = Weld Tab Through-hole	(Leave blank for no latch) **–P** = Plastic top latch **–M** = Metal side latches	**–TR** = Tape & Reel



A-UMPT-04-01-X-RA-WT-P SHOWN



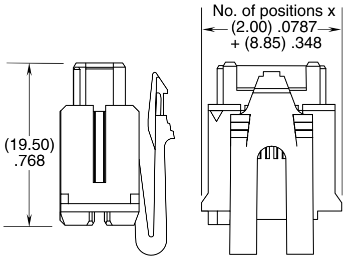
A-UMPT-04-01-X-RA-WT-M SHOWN

NO. OF POSITIONS	A	B (–P & No latch)	B (–M latch)
–02	(13.60) .535	(11.10) .437	(11.55) .455
–03	(15.60) .614	(13.10) .516	(13.55) .533
–04	(17.60) .693	(15.10) .594	(15.55) .612
–05	(19.60) .772	(17.10) .673	(17.55) .691
–06	(21.60) .850	(19.10) .752	(19.55) .770
–07	(23.60) .929	(21.10) .831	(21.55) .848
–08	(25.60) 1.008	(23.10) .909	(23.55) .927
–09	(27.60) 1.087	(25.10) .988	(25.55) 1.006
–10	(29.60) 1.165	(27.10) 1.067	(27.55) 1.085

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

A-IMPC	–	NO. OF POSITIONS	–	LATCH OPTION
		–02, –03, –04, –05, –06, –07, –08, –09, –10		**–P** = Plastic top latch

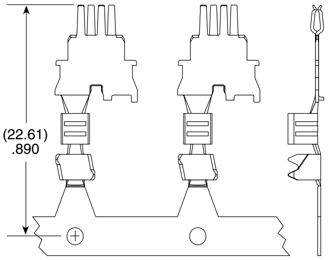
mPOWER®



CABLE HOLDER (Required for use with A-IMPC)

SERIES	NUMBER OF POSITIONS	LEAD STYLE
A-IMPCC	-02, -03, -04, -05, -06, -07, -08, -09, -10	01 = 16 AWG
		02 = 18 AWG

A-CC489	–	01	–	PLATING	–	PACKAGING
				–L = 10 µ" (0.25 µm) Gold on contact, Tin on tail **–T** = Tin		**–R** = Full Reel (5,000 Contacts) **–M** = Mini Reel (1,000 Contacts) **–B** = Bubble Bag (35 Contacts)



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

TOOLING

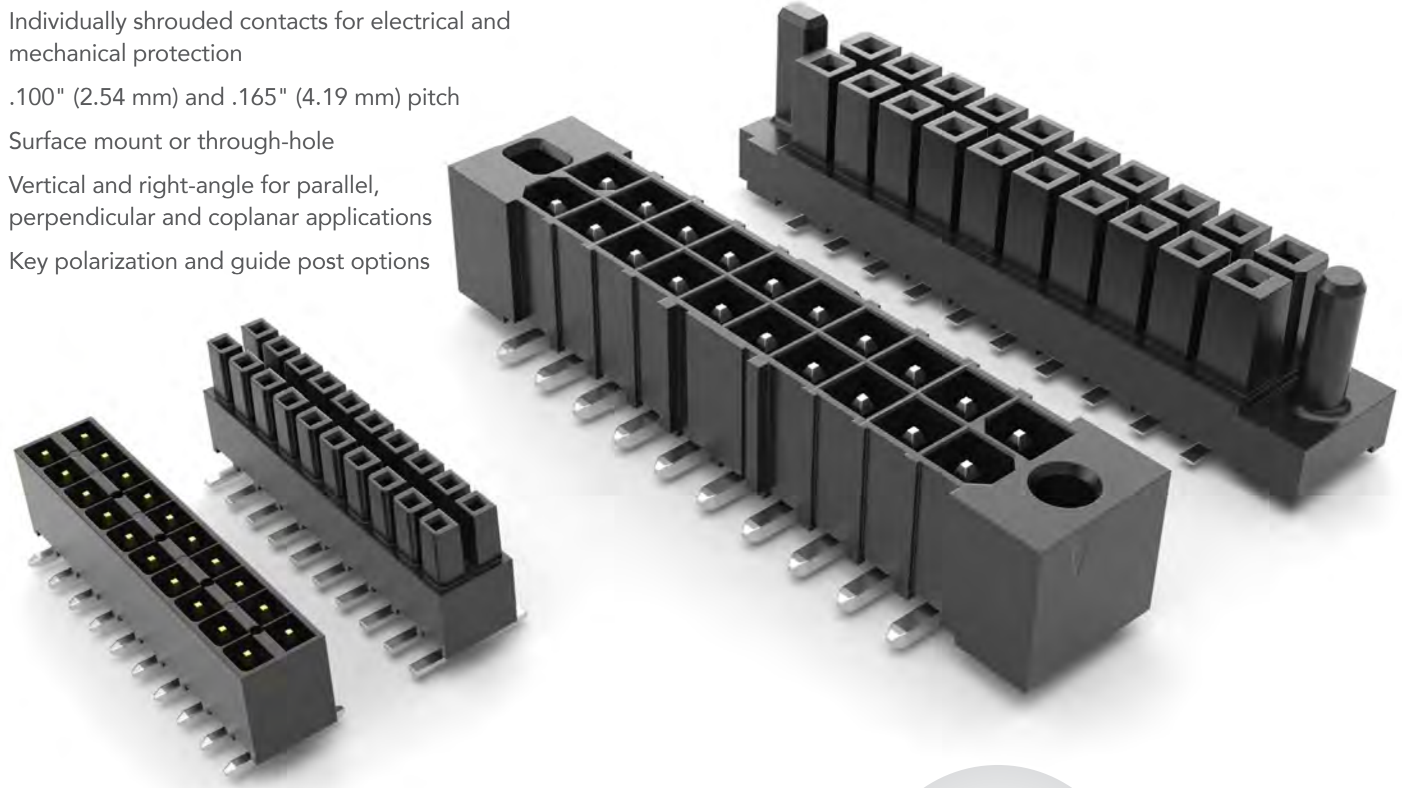
Hand Tool: CAT-HT-489-1618-13	Mini Applicator: CAT-MC-489-1618-XX-01

miniMATE® | POWERMATE®

ISOLATED POWER SYSTEMS

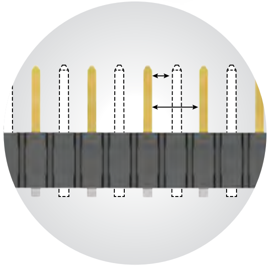
FEATURES & BENEFITS

- Individually shrouded contacts for electrical and mechanical protection
- .100" (2.54 mm) and .165" (4.19 mm) pitch
- Surface mount or through-hole
- Vertical and right-angle for parallel, perpendicular and coplanar applications
- Key polarization and guide post options



CREEPAGE & CLEARANCE

	CREEPAGE	CLEARANCE
A-IPT1/A-IPS1	2.54 mm	1.91 mm
A-IPBT/A-IPBS	4.27 mm	3.05 mm



Selectively loading contacts achieves customer specific creepage and clearance requrements.

KEY SPECIFICATIONS

SERIES	PITCH	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	LEAD-FREE SOLDERABLE
A-IPT1/ A-IPS1	.100" (2.54 mm)	Black LCP	Phosphor Bronze	Sn or Au over 50 µ" (1.27 µm) Nickel	-55 °C to +125 °C	5.9 A (2 pins powered)	700 VAC/ 990 VDC	Yes
A-IPBT/ A-IPBS	.165" (4.19 mm)	Black LCP	High Copper Alloy (A-IPBT) Phospher Bronze (A-IPBS)	Sn over 50 µ" (1.27 µm) Nickel	-55 °C to +105 °C	9.3 A (2 pins powered)	400 VAC/ 566 VDC	Yes

MAX 5.9 Amps

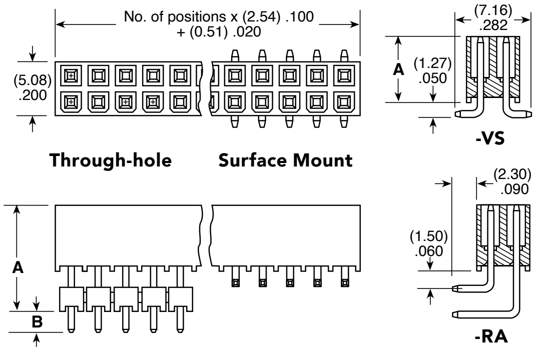
samtec

(2.54 mm) .100" PITCH • SHROUDED POWER CONNECTOR SET

A-IPT1	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	TAIL OPTION	OTHER OPTIONS
		05, 10, 15, 20, 25 (Standard Sizes)	Specify LEAD STYLE from chart	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail		Requires -01 Lead Style (Leave blank for Through-hole) **–RA** = Right-angle **–VS** = Surface Mount	**–A** = Alignment Pin (–VS only) **–K** = (6.00 mm) .236" DIA Polyimide film Pick & Place Pad (–VS only) **–TR** = Tape & Reel (–VS only)

miniMATE®

A-IPT1
Board Mates:
A-IPS1



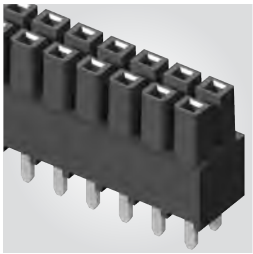
LEAD STYLE	MATED HEIGHT	A	B
–01	(11.05) .435	(6.35) .250	(2.16) .085
-01-VS	(13.59) .535	(6.35) .250	N/A
–02	(14.00) .551	(9.30) .366	(2.64) .104
–03	(16.00) .630	(11.30) .445	(2.16) .085
–04	(17.00) .669	(12.30) .484	(2.69) .106
–05	(19.00) .748	(14.30) .563	(2.46) .097
–06	(20.00) .787	(15.30) .602	(2.35) .093
–07	(25.00) .984	(20.30) .799	(2.31) .091
–08	(30.00) 1.181	(25.30) .996	(2.39) .094
–09	(35.00) 1.378	(30.30) 1.193	(2.46) .097

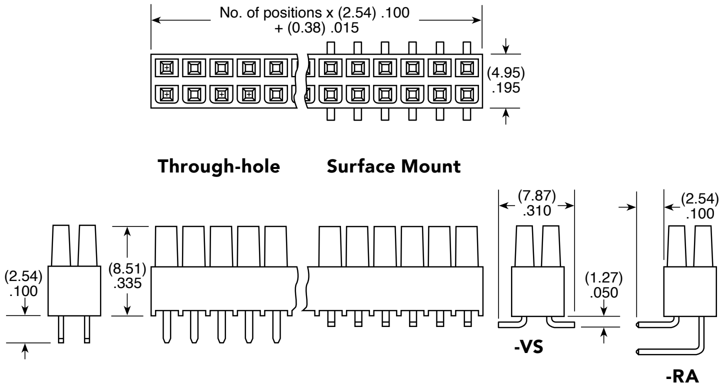
A-IPT1/A-IPS1	
PINS	CURRENT RATING (PER CONTACT)
2	5.9 A
4	4.8 A
6	4.1 A
8	3.6 A
50	2.3 A

A-IPS1	1	NO. PINS PER ROW	01	PLATING OPTION	D	TAIL OPTION	OTHER OPTIONS
		05, 10, 15, 20, 25 (Standard Sizes)		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail		Leave blank for Through-hole **–RA** = Right-angle **–VS** = Surface Mount	**–K** = (5.50 mm) .217" DIA Polyimide film Pick & Place Pad (–VS only) **–TR** = Tape & Reel (–VS only)

miniMATE®

A-IPS1
Board Mates:
A-IPT1





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

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

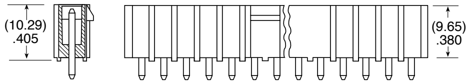
MAX
9.3
Amps

(4.19 mm) .165" PITCH • ISOLATED POWER CONNECTOR SET

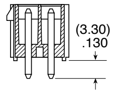
A-IPBT	1	NO. OF POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTIONS
		02, 03, 04, 05, 08, 10 **15** (–D Only) (Standard Sizes)	**–H1** = Through-hole **–H2** = Surface Mount	**–T** = Matte Tin	**–S** = Single Row **–D** = Double Row	**–RA** = Right-angle (Lead Style –H1 only) **–GP** = Guide Post Holes (Not available with –K) **–K** = Keyed Polarization (Not available with –GP option, is required callout if –GP not called out)

POWERMATE®

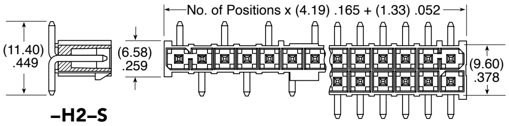
A-IPBT
Board Mates:
A-IPBS



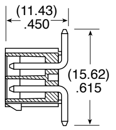
–H1–S



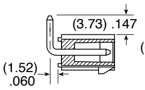
–H1–D



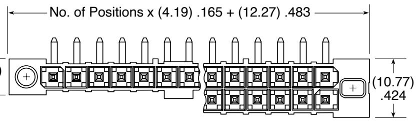
–H2–S



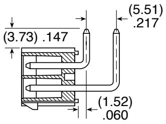
–H2–D



–H1–S–RA



–GP



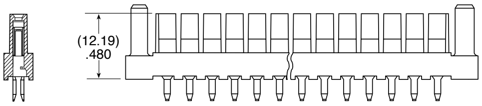
–H1–D–RA

A-IPBT/A-IPBS	
PINS POWERED	**CURRENT RATING (PER CONTACT)**
2	9.3 A
4	7.4 A
6	6.4 A
8	5.9 A
30	4.4 A

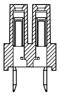
A-IPBS	1	NO. OF POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTION
		02, 03, 04, 05, 08, 10 **15** (–D Only) (Standard Sizes)	**–01** = Standard Power **–02** = Standard Power Surface Mount	**–T** = Matte Tin	**–S** = Single Row **–D** = Double Row	**–GP** = Guide Post

POWERMATE®

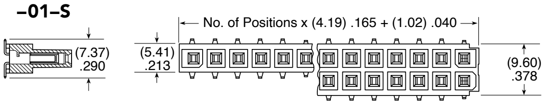
A-IPBS
Board Mates:
A-IPBT



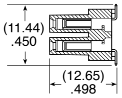
–01–S



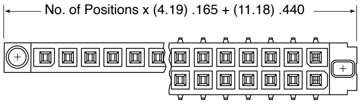
–01–D



–02–S

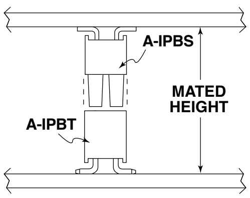


–02–D



–GP

MATED HEIGHT



A-IPBT/A-IPBS LEAD STYLE	MATED HEIGHT*
H1/–01	(15.25) .600
–H2/–02	(16.84) .663

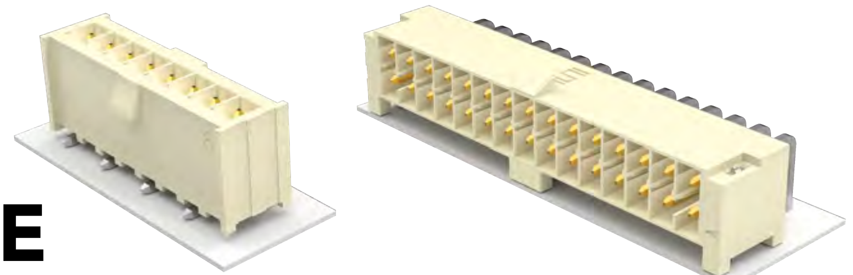
*Processing conditions will affect mated height.

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

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE



DISCRETE WIRE HEADER/CABLE COMPONENTS

MAX
4.8
Amps

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

A-IPL1	1	PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	TAIL OPTION	K	TR
		02, 03, 04, 05, 06, 08, 10, 12, 15, 16, 20, 25 (Standard sizes)	**–01** = Through-hole **–02** = Surface Mount	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–S** = Single Row **–SH** = Single Row Horizontal (–02 lead style only) **–D** = Double Row	**–RA** = Right-angle (–01 lead style only) **–RE1** = Right-angle Elevated (–01 lead style only) (–K is a required callout)	**–K** = Keyed Polarization	**–TR** = Tape & Reel (–02 lead style only) Comes with Polyimide Pick & Place Pad

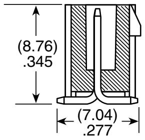
SPECIFICATIONS

Insulator Material:
Natural LCP
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over 50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +125 °C
Current Rating:
4.8 A per pin (2 pins powered)
Voltage Rating:
275 VAC/389 VDC

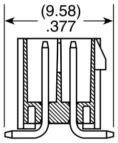
PROCESSING

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

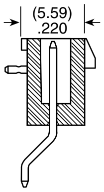
Note:
Some lengths, styles and options are non-standard, non-returnable.



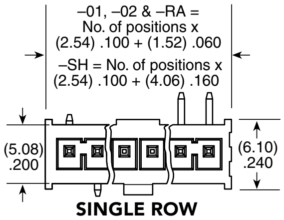
–02–S



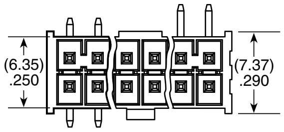
–02–D



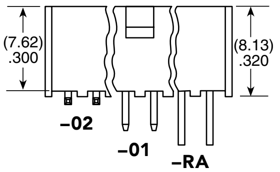
–02–SH



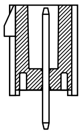
SINGLE ROW



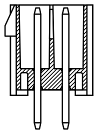
DOUBLE ROW



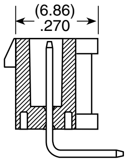
–02
–01
–RA



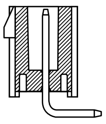
–01–S



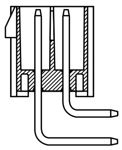
–01–D



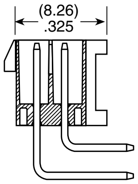
–01–S–RE1



–01–S–RA

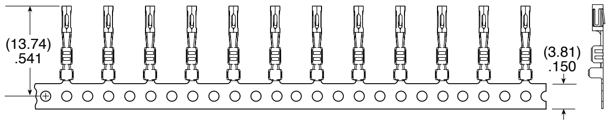


–01–D–RA



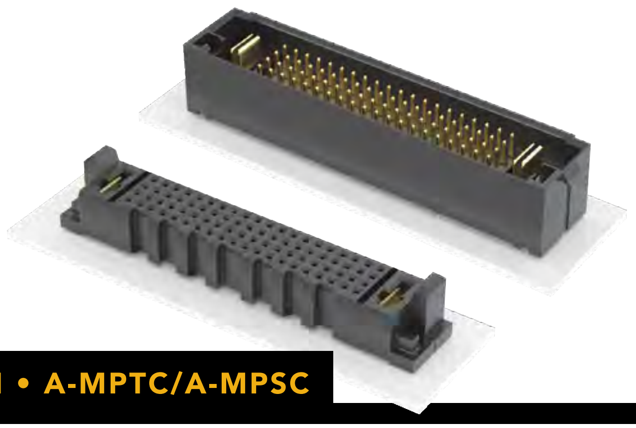
–01–D–RE1

SERIES	WIRE GAUGE	01	PLATING OPTION
A-CC79R = Contact, Full Reel (12,000 Parts per Reel)	**–2630** = 26 to 30 AWG **–2024** = 20 to 24 AWG		**–L** = 10 µ" (0.25 µm) Gold on contact, Tin on tail



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

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



30 A SIGNAL/POWER COMBO SYSTEMS

(5.00 mm) .197"(PWR) / (2.00 mm) .079"(SIG) PITCH • A-MPTC/A-MPSC

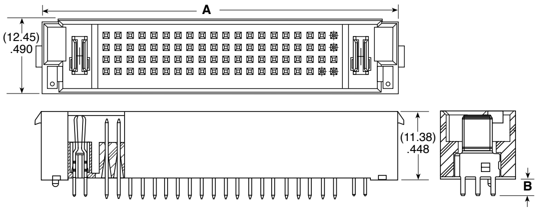
A-MPTC

Board Mates:
A-MPSC

A-MPSC

Board Mates:
A-MPTC

A-MPTC	POWER PINS	SIGNAL PINS	POWER PINS	LEAD STYLE	TAIL LENGTH	PLATING OPTION	V
A-MPTC Terminal	Per end –01 –02	–16 –24 –40 –80	Per end –01 –02	–6.30 = (6.30 mm) 0.248"	–01 = Use with (1.60 mm) .062" Thick PCB –03 = Use with (2.36 mm) .093" Thick PCB	–L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail (Power & Signal) –T = Matte Tin on contact and tail (Power); Gold on contact, Matte Tin on tail (Signal)	



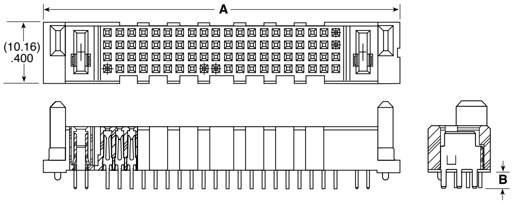
SPECIFICATIONS

Insulator Material:
Black LCP
Plating:
Sn or Au over
50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +105 °C (Sn)
-55 °C to +125 °C (Au)
Current Rating:
Power Pin: 28 A
(1 pin powered)
Signal Pin: 5 A
(4 pins powered)
Voltage Rating:
350 VAC/495 VDC
Standard Creepage:
2.95 mm
Standard Clearance:
2.71 mm

POWER PINS/ ENDS	A			
	16 SIGNAL PINS	24 SIGNAL PINS	40 SIGNAL PINS	80 SIGNAL PINS
–01	(27.44) 1.081	(31.45) 1.238	(39.44) 1.553	(59.44) 2.340
–02	(37.44) 1.474	(41.45) 1.632	(49.44) 1.946	(69.44) 2.734

TAIL LENGTH	B
–01	(2.72) .107
–03	(3.51) .138

A-MPSC	POWER PINS	SIGNAL PINS	POWER PINS	LEAD STYLE	TAIL LENGTH	PLATING OPTION	V
A-MPSC Socket	Per end –01 –02	–16 –24 –40 –80	Per end –01 –02	–7.70 = (7.70 mm) 0.303"	–01 = Use with (1.60 mm) .062" Thick PCB –03 = Use with (2.36 mm) .093" Thick PCB	–L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail (Power & Signal) –T = Matte Tin on contact and tail (Power); Gold on contact, Matte Tin on tail (Signal)	



POWER PINS/ ENDS	A			
	16 SIGNAL PINS	24 SIGNAL PINS	40 SIGNAL PINS	80 SIGNAL PINS
–01	(27.44) 1.081	(31.45) 1.238	(39.44) 1.553	(59.44) 2.340
–02	(37.44) 1.474	(41.45) 1.632	(49.44) 1.946	(69.44) 2.734

TAIL LENGTH	B
–01	(2.72) .107
–03	(3.51) .138

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

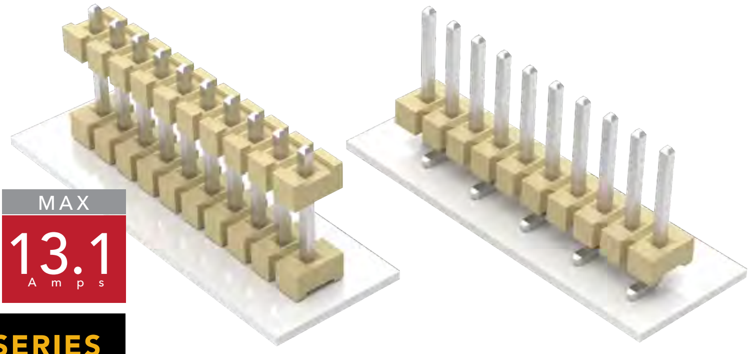
ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

POWER HEADERS AND STACKERS

MAX
13.1
Amps



(3.96 mm) .156" PITCH • A-HFWJ, A-JW SERIES

SPECIFICATIONS

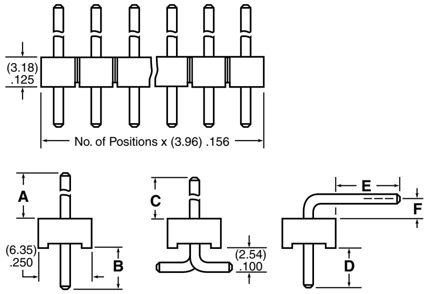
Insulator Material:
Natural Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn over 50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +105 °C
Current Rating:
13.1 A per pin (1 pin powered)
Voltage Rating:
600 VAC/849 VDC

PROCESSING

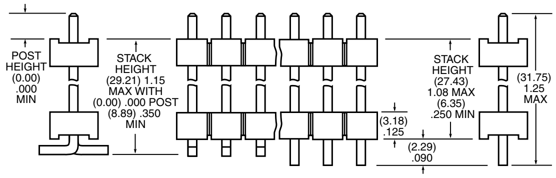
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.20 mm) .008" max (02-16)*
(0.25 mm) .010" max (17-24)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

A-HFWJ	–	NO. OF PINS	–	LEAD STYLE	–	PLATING OPTION	–	S	–	OTHER OPTIONS
A-HFWJ High Temp Header		**01 thru 24**		**Specify LEAD STYLE from chart below**		**–T** = Matte Tin				Leave blank for Through-hole **–RA** = Right-angle (Style –02 & –04 only) **–VS** = Surface Mount **–P** = Pick & Place Pad (3 Pos. min.) (6.98 mm) .275" min. post height (–VS only)

LEAD STYLE	A	B	C	D	E	F
–01	(11.43) .450	(4.45) .175	(10.46) .412	–	–	–
–02	(12.70) .500		(11.73).462	(4.45) .175	(8.13) .320	(2.54) .100
–04	(20.55) .809	(3.96) .156	(19.10) .752	(3.96) .156	(13.56) .534	(4.95) .195



A-JW	–	NO. OF PINS	–	04	–	PLATING OPTION	–	S	–	STACK HEIGHT	–	POST HEIGHT	–	OTHER OPTIONS
		02 thru 24				**–T** = Matte Tin				**–"XXX"** = Stacker Height (in inches) (0.13 mm) .005" increments Example: –250 = (6.35 mm) .250"		**–"XXX"** = Post Height (in inches)		Leave blank for Through-hole **–VS** = Surface Mount (2 pins/row minimum) **–P** = Pick & Place Pad (3 Pos. min.) (6.98 mm) .275" min. post height (–VS only)



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

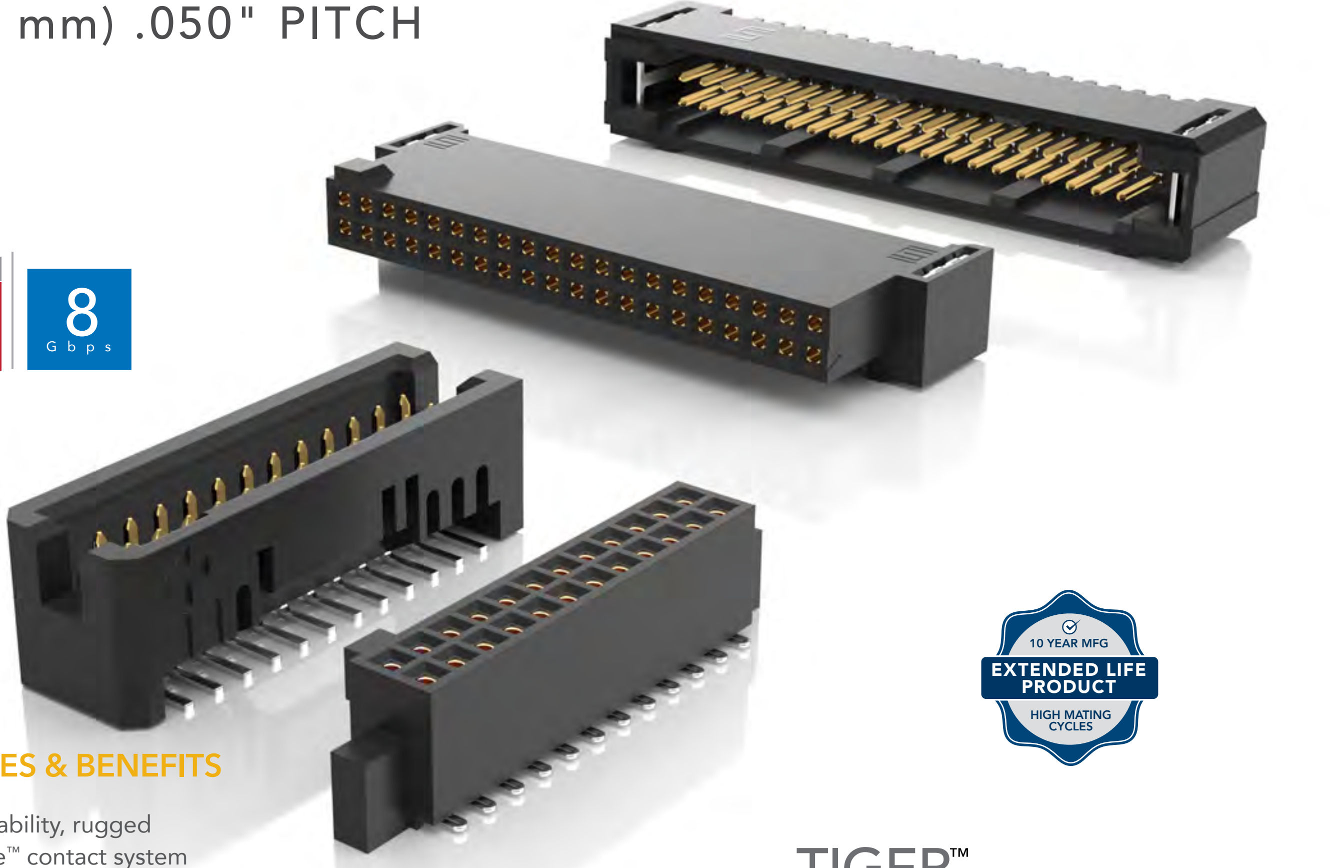
TIGER™
EYE
SYSTEM

RUGGED TIGER EYE™ SYSTEMS

(1.27 mm) .050" PITCH

MAX
3.7
Amps

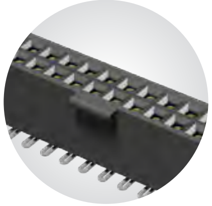
8
Gbps



10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

FEATURES & BENEFITS

- High-reliability, rugged Tiger Eye™ contact system
- Surface mount & through-hole tails
- Vertical & horizontal orientation
- Up to 8 Gbps of performance
- Severe Environment Testing qualified (A-SFM/A-TFM). Visit **samtec.com/set**
- Extended Life Product™ (E.L.P.™) for high mating cycles to 2,500
- Discrete Wire assemblies available. Contact **autosalesgroup@samtec.com** for other solutions.



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

TIGER™
EYE
CONTACT

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

KEY SPECIFICATIONS (A-TFM/A-SFM)

STACK HEIGHTS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	MAX CYCLES
6 to 12 mm	Black LCP	BeCu (A-SFM) Phosphor Bronze (A-TFM)	Au or Sn over 50 µ" (1.27 µm) Ni	-55 °C to +125 °C	3.7 A per pin (2 pins powered)	250 VAC/354 VDC	10,000 with 30 µ" (0.76 µm) Au (Call Samtec for E.L.P.™ plating option)

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

ACD AUTOMOTIVE CERTIFIED DESIGN · IATF 16949 CERTIFIED · PPAP ELIGIBLE

samtec

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

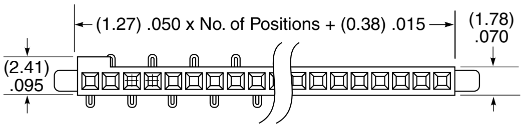
SERIES		1		NO. PINS PER ROW		LEAD STYLE		PLATING OPTION		ROW OPTION		OPTION
A-SFM = Standard **A-SFML** = Locking	–		–	**03, 04, 06, 08** (A-SFM only) **05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50** (Standard sizes)	–	**–02** (Surface Mount) = Tiger Eye™ Contact (BeCu) **–01, –03** (Through-hole) = Tiger Eye™ Contact (BeCu)	–	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail (Call Samtec for E.L.P.™ plating option)	–	**–S** = Single Row (A-SFM only) **–D** = Double Row **–SH** = Single Horizontal (05 thru 30 positions only) (A-SFM only) (Lead style –02 only) **–DH** = Double Horizontal (05 thru 30 positions only) (A-SFM only) (Lead style –02 only)	–	**–A** = Alignment Pin (Not available with –DH, –SH) **–K** = Polyimide film Pick & Place Pad (Not available with –DH, –SH, –P) (Lead style –02 only) **–P** = Plastic Pick & Place Pad (Not available with –DH, –SH, –K) (Lead style –02 only) **–TR** = Tape & Reel Specify –TR last; Required for –DH & –SH (Lead style –02 only)

TIGER™ EYE SYSTEM

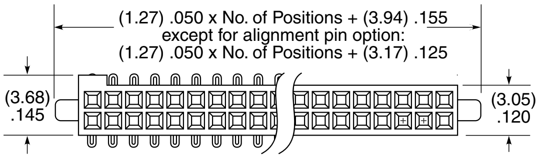
A-SFM

Board Mates:
A-TFM

A-SFML
Board Mates:
A-TFML

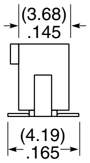


SINGLE ROW

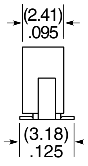


DOUBLE ROW

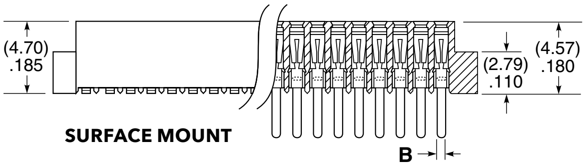
LEAD STYLE	A	B
–01	(3.05) .120	(0.51) .020
–03	(1.91) .075	(0.41) .016



-D

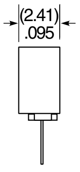


-S

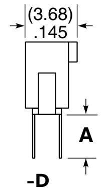


SURFACE MOUNT

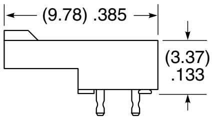
THROUGH-HOLE



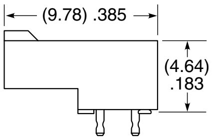
-S



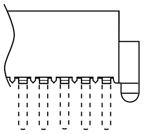
-D



-SH



-DH



-A

Notes:
Severe Environment Testing qualified (A-SFM). Visit samtec.com/set

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

SMT & THROUGH-HOLE TIGER EYE™ HEADER

(1.27 mm) .050" • A-TFM/A-TFML SERIES

MAX 3.7 Amps

8 Gbps

SERIES		1		NO. PINS PER ROW		LEAD STYLE		PLATING OPTION		ROW OPTION		OPTIONS		
A-TFM = Standard **A-TFML** = Locking (–01 & –02 lead style only)	–		–	**03, 04, 06, 08** (A-TFM –01 & –02 only) **05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50** (Standard sizes)	–	**Specify LEAD STYLE from chart**	–	**–L** = 15 µ" (0.38 µm) Gold on post, Matte Tin on tail (Call Samtec for E.L.P.™ plating option)	–	**–S** = Single Row (A-TFM only) **–D** = Double Row	–	Specify only –RA **–RA** = Right-angle (Lead style –01 only)	Specify only –A, or –WT Not available with –RA, unless otherwise noted. **–A** = Alignment Pin **–WT** = Weld Tab (A-TFM lead styles –01 and –02 only) (05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50 positions only)	SMT lead styles only Specify only –K or –P **–K** = Polyimide Film Pick & Place Pad **–P** = Plastic Pick & Place Pad (5 positions min.) (Not available with 5 position with –WT) Specify –TR last **–TR** = Tape & Reel

TIGER™ EYE SYSTEM

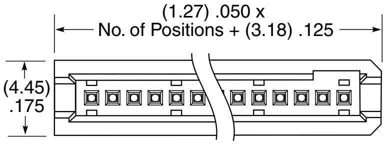
A-TFM
Board Mates:
A-SFM,A-SFMC

A-TFML
Board Mates:
A-SFML

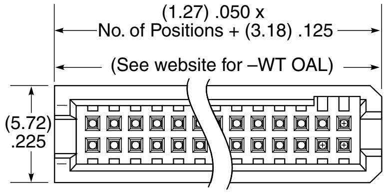
MATED HEIGHTS*

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

*Processing conditions will affect mated height.



SINGLE ROW



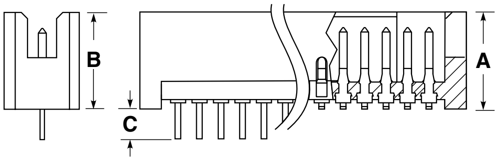
DOUBLE ROW

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

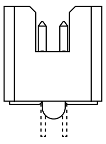
* N/A with 07, -S row option

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

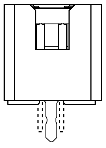
* Not Available with 07 or -S row option



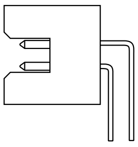
THROUGH-HOLE **SURFACE MOUNT**



-A



-WT



-RA

Notes:
Severe Environment Testing qualified (A-TFM). Visit samtec.com/set

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

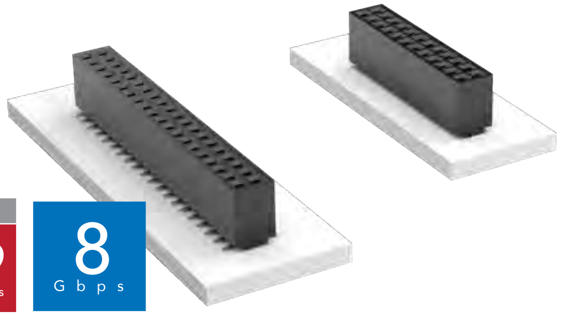
Due to technical progress, all designs, specifications and components are subject to change without notice.

FLEXIBLE PIN COUNT TIGER EYE™ SOCKET

(1.27 mm) .050" PITCH • A-SFMC SERIES

MAX 2.9 Amps

8 Gbps



A-SFMC
Board Mates:
A-TFM

TIGER™ EYE SYSTEM

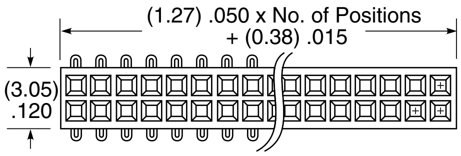
A-SFMC	–	1	NO. PINS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	D	–	OPTIONS
			02 thru 50		**–01, –03** = Through-hole **–02** = Surface Mount		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail				**–K** = (4.00 mm) .157" DIA Polyimide film Pick & Place Pad (4 positions min.) **–P** = Plastic Pick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

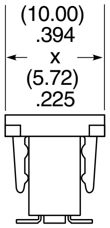
SPECIFICATIONS

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:
219 VAC/310 VDC
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
(3.05 mm) .120" to
(4.06 mm) .160"
Normal Force:
Standard= 132 g (1.29 N) avg.
Max Cycles:
10,000 with 30 µ" (0.76 µm) Au

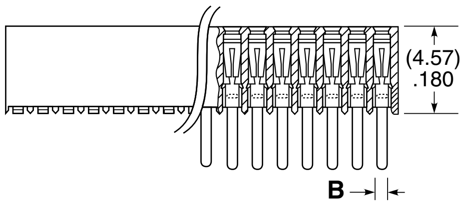
PROCESSING

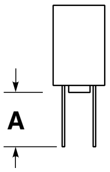
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (02-26)
(0.15 mm) .006" max (27-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

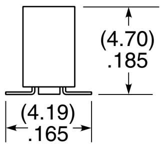




-P OPTION







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

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

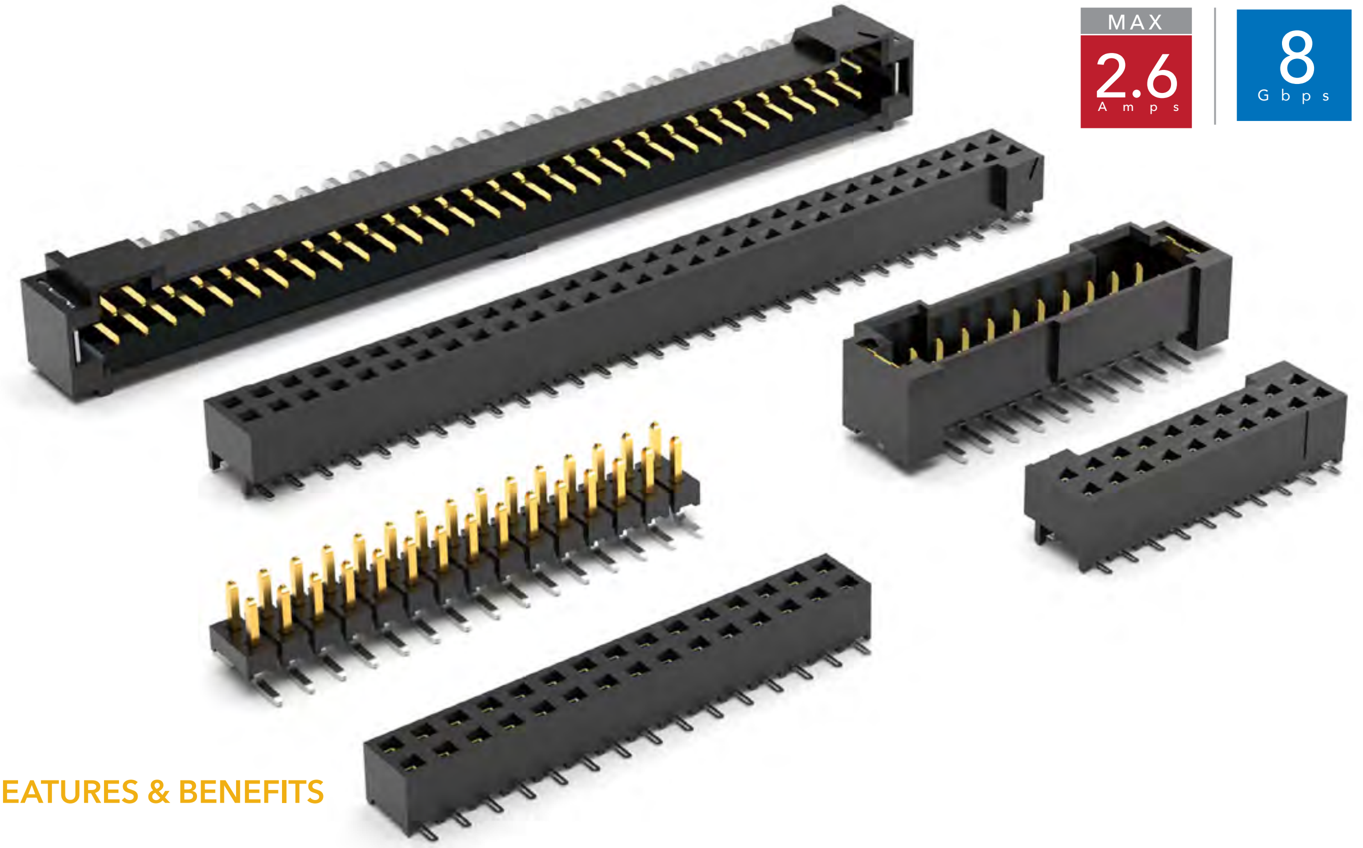
TIGER™
EYE
SYSTEM

RUGGED TIGER EYE™ SYSTEMS

(2.00 mm) .0787" PITCH

MAX
2.6
Amps

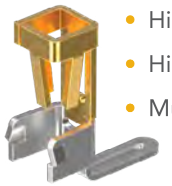
8
Gbps



FEATURES & BENEFITS

- Rugged Tiger Eye™ contact system for high-reliability
- Wide range of stack heights (A-SMM/A-TMM Series)
- Right-angle mating headers available
- Up to 8 Gbps of performance
- Surface mount or through-hole
- Discrete wire assemblies available. Contact autosalesgroup@samtec.com for other solutions.
- Severe Environment Testing qualified (A-S2M/A-T2M). Visit samtec.com/set

TIGER™
EYE
CONTACT



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

KEY SPECIFICATIONS (A-S2M/A-T2M)

INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	MAX CYCLES
Black LCP	BeCu (S2M) Phosphor Bronze (T2M)	Au or Sn over 50 µ" (1.27 µm) Ni	-55 °C to +125 °C	2.6 A (2 pins powered)	350 VAC/495 VDC	100 with 10 µ" (0.25 µm) Au

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

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

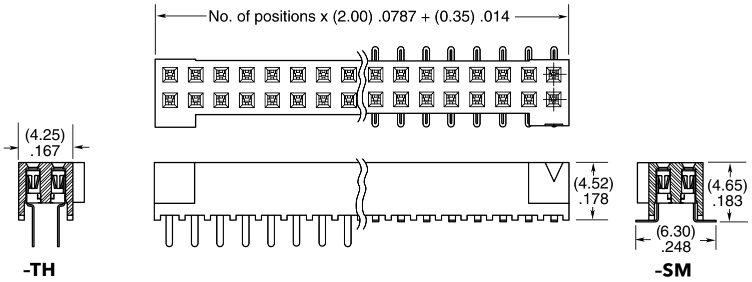
samtec

(2.00 mm) .0787" PITCH • HIGH-RELIABILITY INTERCONNECTS

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

TIGER™ EYE SYSTEM

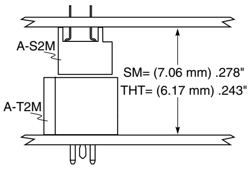
A-S2M
Board Mates:
A-T2M



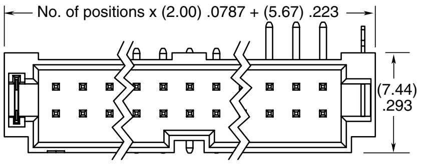
SERIES	1	NO. OF POSITIONS	01	PLATING OPTION	D	TAIL OPTION	OTHER OPTIONS	PACKAGING
A-T2M Header		**05, 07, 10, 15, 20, 25, 30** (Per Row)		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail		**–TH** = Through-hole **–RA** = Right-angle **–SM** = Surface Mount	**–WT** = Weld Tab **–K** = (7.50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

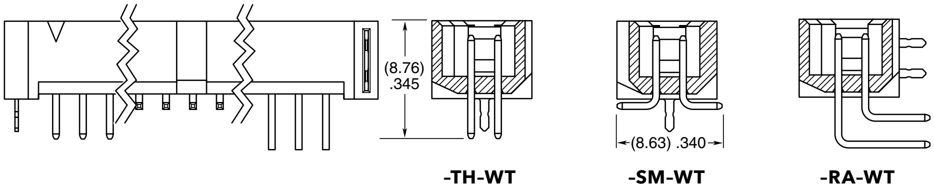
TIGER™ EYE SYSTEM

MATED HEIGHT



A-T2M
Board Mates:
A-S2M





Note:
Severe Environment Testing qualified.
Visit samtec.com/set

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.

ACD AUTOMOTIVE CERTIFIED DESIGN

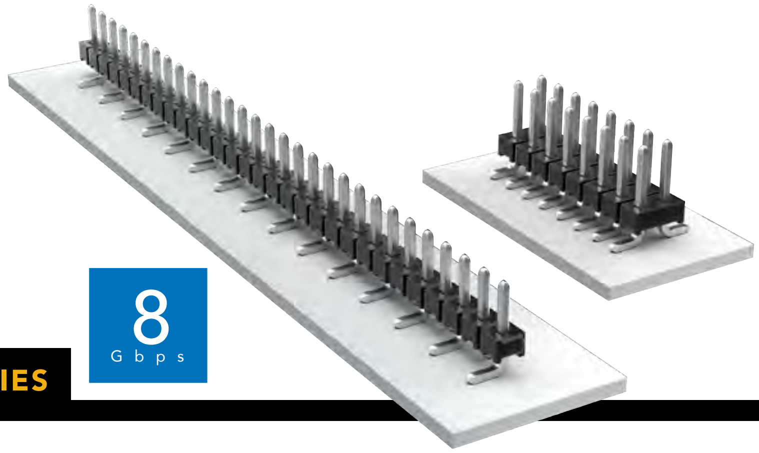
IATF 16949 CERTIFIED

PPAP ELIGIBLE

LOW PROFILE SMT HEADER

(2.00 mm) .0787" PITCH • A-TMM SERIES

8 Gbps



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

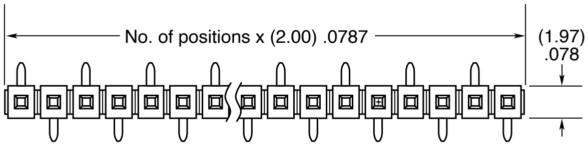
A-TMM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	SM	OTHER OPTION
		02 thru 40	Specify LEAD STYLE from chart	**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail **–T** = Matte Tin	**–S** = Single Row **–D** = Double Row		**–A** = Alignment Pin (5 positions minimum) (–D only) **–P** = Pick & Place Pad (3 positions minimum) **–TR** = Tape & Reel (3 thru 36 positions only)

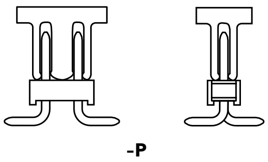
SPECIFICATIONS

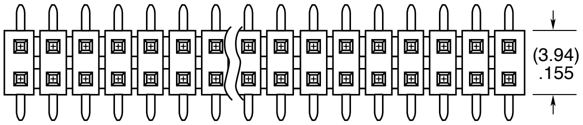
Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over 50 µ" (1.27 µm) Ni
Current Rating:
3.3 A per pin (2 pins powered)
Operating Temp Range:
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
Voltage Rating:
375 VAC/530 VDC with A-SMM

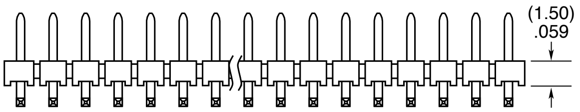
PROCESSING

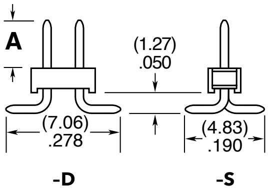
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)











10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

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

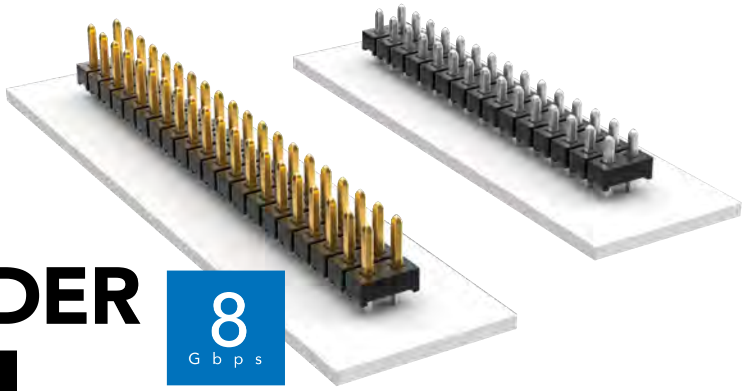
Note:
Some lengths, styles and options are non-standard, non-returnable.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE

THROUGH-HOLE LOW PROFILE HEADER



8 Gbps

(2.00 mm) .0787" PITCH • A-TMM SERIES

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

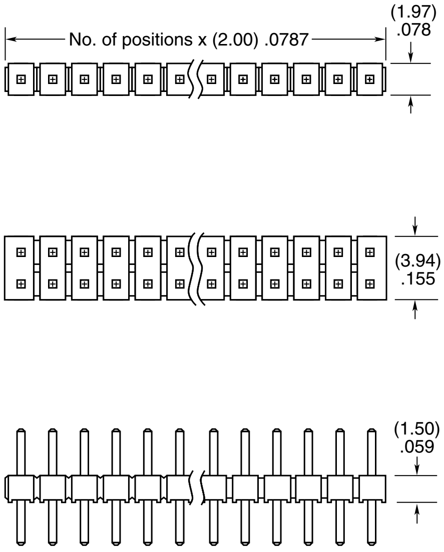
SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over
50 µ" (1.27 µm) Ni
Current Rating (A-SMM/A-TMM):
3.3 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:
375 VAC/530 VDC
mated with A-SMM

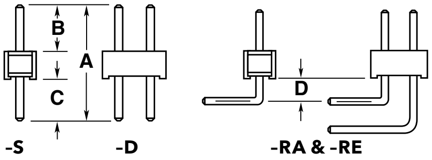
PROCESSING

Lead–Free Solderable:
Yes

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



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



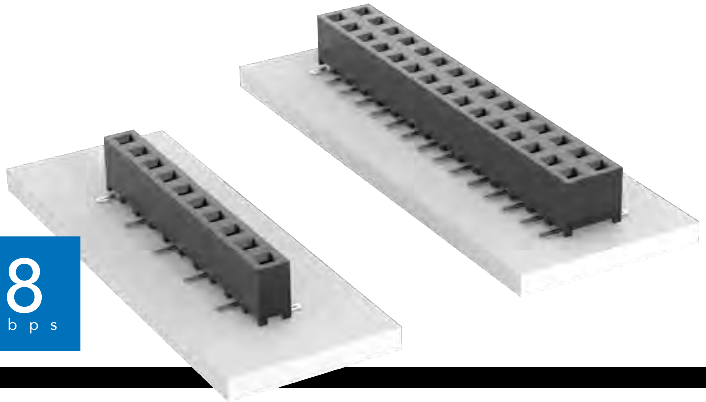
10 YEAR MFG WITH 30 µ" GOLD
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

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

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

HIGH-RELIABILITY SOCKET STRIPS

(2.00 mm) .0787" PITCH • A-SMM



8 Gbps

A-SMM

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

TIGER™ EYE SYSTEM

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

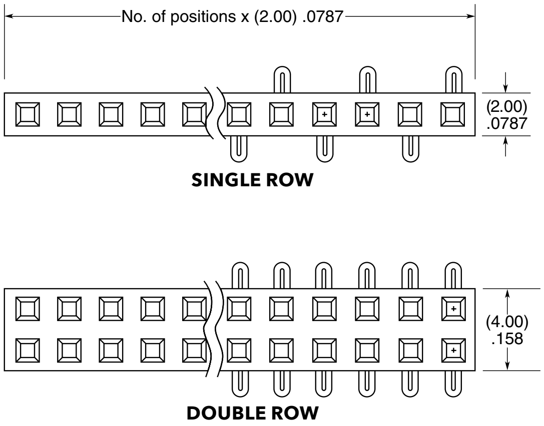
SPECIFICATIONS

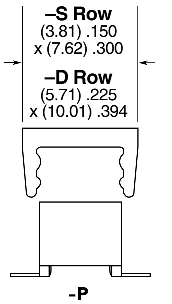
Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
BeCu
Plating: Sn or Au over 50 µ" (1.27 µm) Ni
Current Rating (A-TMM/A-SMM):
3.3 A per pin (2 pins powered)
Voltage Rating:
375 VAC/530 VDC
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
(3.05 mm) .120" to (3.25 mm) .128"
Max Cycles:
100 with 10 µ" (0.25 µm) Au

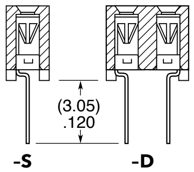
PROCESSING

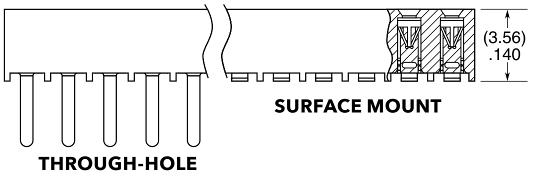
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max

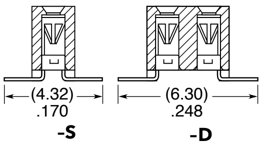
10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES











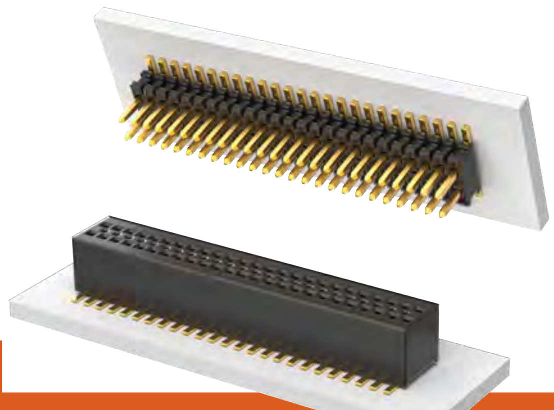
Note:
Some lengths, styles and options are non-standard, non-returnable.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

SMT MICRO HEADER & SOCKET



(0.80 mm) .0315" PITCH • A-FTE/A-CLE SERIES

A-FTE
Mates:
A-CLE

A-CLE
Mates:
A-FTE

A-FTE	– 1	NO. PINS PER ROW	– LEAD STYLE	– PLATING OPTION	– TAIL OPTION	– OTHER OPTION
		05 thru 90	Specify LEAD STYLE from chart	**–G** = 10 µ" (0.25 µm) Gold on post, Gold flash on balance	**–DV** = Dual Vertical	**–A** = Alignment Pin (5 positions minimum) **–P** = Plastic Pick & Place Pad (8 positions minimum) **–TR** = Tape & Reel

TIGER™ BEAM CONTACT

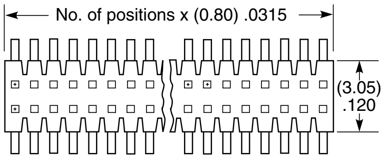
SPECIFICATIONS

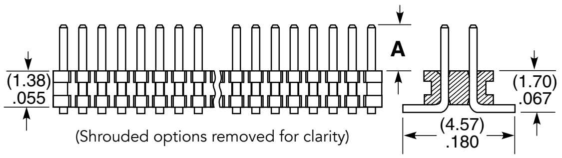
Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Contact Material:
BeCu
Plating:
Au over 50 µ" (1.27 µm) Ni
Current Rating (A-FTE/A-CLE):
2.7 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth (A-CLE):
(1.73 mm) .068" to
(3.18 mm) .125" with (0.38 mm) .015"wipe, or pass-through
Max Cycles (A-CLE):
100 with 10 µ" (0.25 µm) Au

PROCESSING

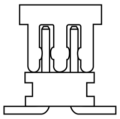
Lead-Free Solderable:
Yes
SMT Lead Coplanarity (A-FTE):
-DV: (0.10 mm) .004" max
SMT Lead Coplanarity (A-CLE):
(0.10 mm) .004" max (04-65)
(0.15 mm) .006" max (66-90)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

LEAD STYLE	A
–01	(1.90) .075
–02	(4.45) .175
–03	(3.05) .120



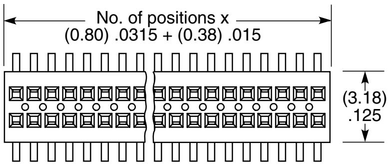


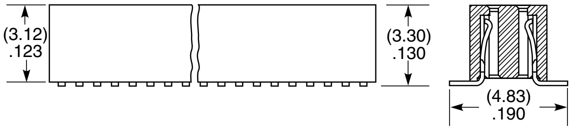
(Shrouded options removed for clarity)



-P OPTION

A-CLE	– 1	NO. PINS PER ROW	– 01	– PLATING OPTION	– DV	– OPTIONS
		04 thru 90		**–G** = 10 µ" (0.25 µm) Gold		**–A** = Alignment Pin (4 positions minimum) **–K** = (3.50 mm) .138" DIA Polyimide film Pick & Place Pad (8 positions minimum) **–TR** = Tape & Reel





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

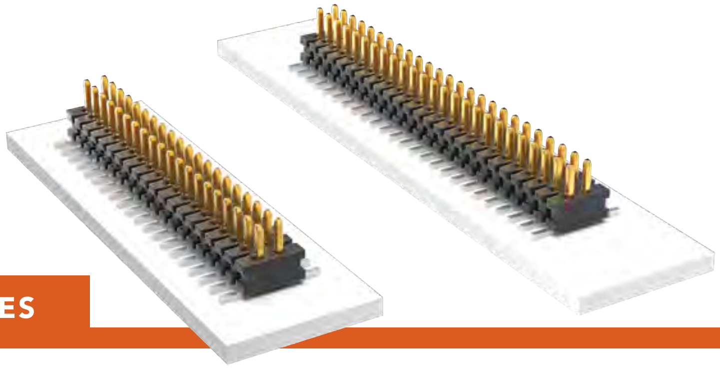
ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

SMT MICRO TERMINAL STRIPS

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



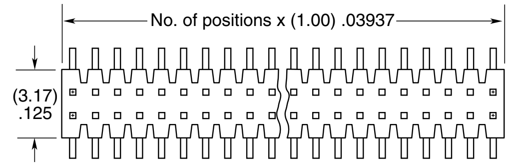
SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over 50 µ" (1.27 µm) Ni
Current Rating:
2.8 A per pin (2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
270 VAC/302 VDC

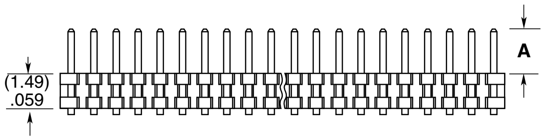
PROCESSING

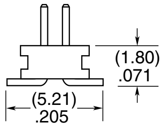
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
-DV: (0.10 mm) .004" max
-DH: (0.10 mm) .004" max (05-25)
(0.15 mm) .006" max (26-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

A-FTMH	–	1	NO. PINS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	ROW OPTION	–	OTHER OPTION	–	TR
			02 **thru** **50**		**–02** = (1.91 mm) .075" Post **–03** = (1.65 mm) .065" Post		**–F** = Gold flash on post, Matte Tin on tail **–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail		**–DV** = Dual Vertical **–DH** = Dual Horizontal (5 positions min.)		**–A** = Alignment Pin (3 positions min.) **–K** = (2.50 mm) .098" DIA Polyimide Film Pick & Place Pad (6 position min.) (–DH only) **–P** = Plastic Pick & Place Pad (6 positions min.) (–DV only)		Leave blank for tube packaging **–TR** Tape & Reel

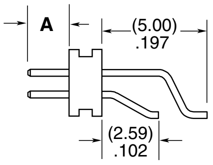


LEAD STYLE	A
–02	(1.91) .075
–03	(1.65) .065





-DV



-DH

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

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

ACD
AUTOMOTIVE CERTIFIED DESIGN

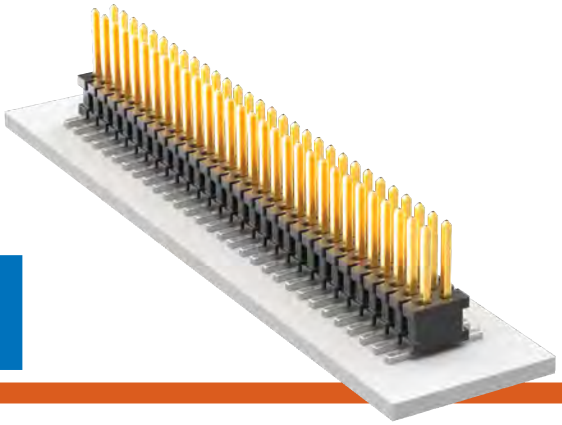
IATF 16949
CERTIFIED

PPAP
ELIGIBLE

SURFACE MOUNT MICRO HEADER

(1.27 mm) .050" PITCH • A-FTSH SERIES

8
Gbps



A-FTSH
Board Mates:
A-CLP

A-FTSH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	TAIL OPTION	OTHER OPTIONS
		02 thru 50	**–01** = (3.05 mm) .120" Post **–02** = (1.91 mm) .075" Post **–03** = (1.65 mm) .065" Post (Mates with A-CLP–D) **–04** = (3.81 mm) .150" Post (Mates with A-CLP-DH) **–05** = (4.32 mm) .170" Post (Mates with A-CLP–BE)	**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail	**–DV** = Double Vertical	**–A** = Alignment Pin (3 positions minimum) **–P** = Pick & Place Pad (4 positions minimum) **–TR** = Tape & Reel

SPECIFICATIONS

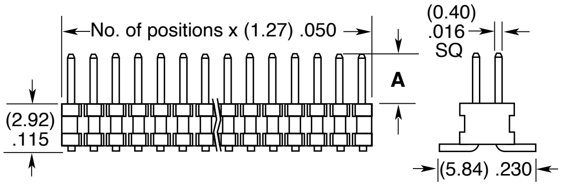
Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over
50 µ" (1.27 µm) Ni
Current Rating (A-FTSH/A-CLP):
3.4 A per pin
(2 pins powered)
Voltage Rating:
280 VAC/396 VDC
Operating Temp Range:
-55 °C to +125 °C

PROCESSING

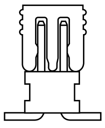
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max

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

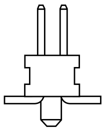
10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES



–DV



–P



–A

Notes:
Severe Environment Testing qualified. Visit samtec.com/set

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.

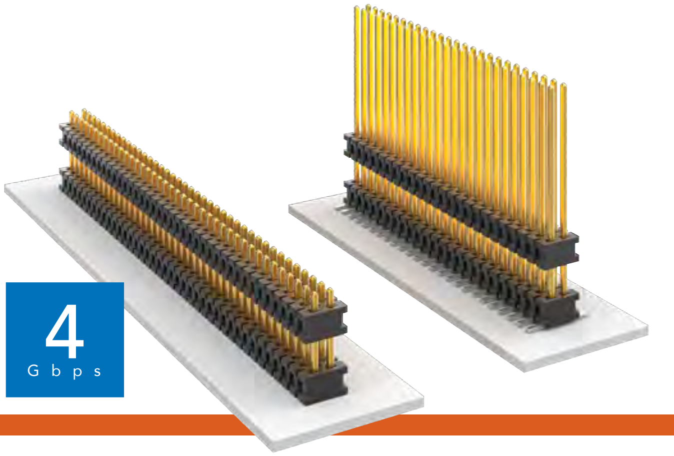
ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

MICRO BOARD STACKER

(1.27 mm) .050" PITCH • A-FW SERIES



A-FW
Board Mates:
A-CLP

FLEX
STACK

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

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

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

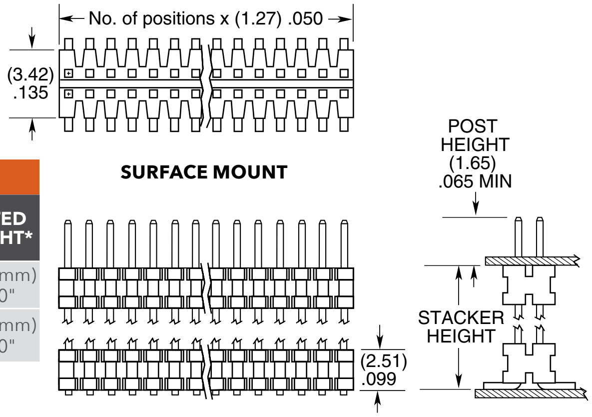
PROCESSING

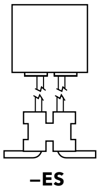
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (02-30)
(0.15 mm) .006" max (31-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

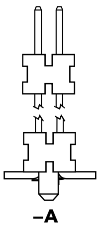
MATED HEIGHT

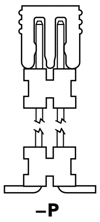
A-FW LEAD STYLE	A-CLP LEAD STYLE	MATED HEIGHT*
A-FW-XX-03-X-X-233-065	-02	(8.13 mm) .320"
A-FW-XX-03-X-X-303-065		(9.91 mm) .390"

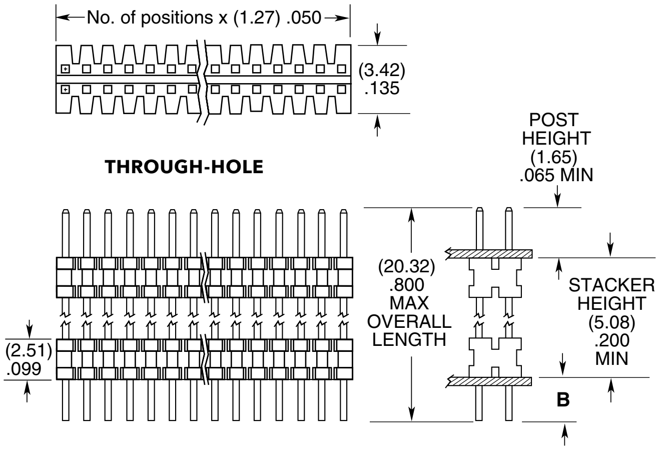
*Processing conditions will affect mated height.



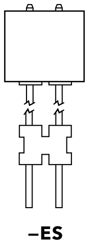








LEAD STYLE	TAIL (B)
–01	(1.14) .045
–02	(1.91) .075
–04	(2.29) .090



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.

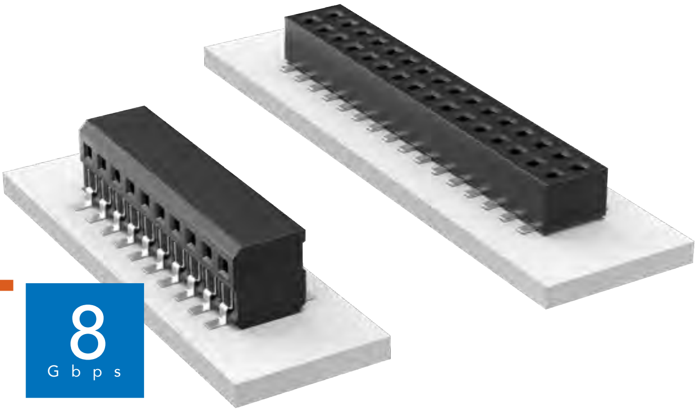
ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

LOW PROFILE DUAL WIPE SOCKET

8
Gbps



(1.27 mm) .050" PITCH • A-CLP SERIES

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

TIGER™ CLAW CONTACT

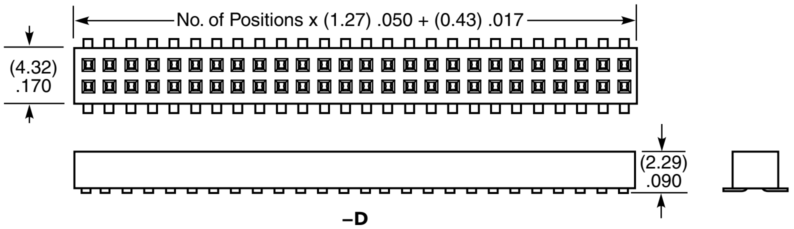
A-CLP	–	1	–	NO. PINS PER ROW	–	02	–	PLATING OPTION	–	ROW OPTION	–	OTHER OPTIONS	–	PACKAGING
				02 thru 50				**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail		**–D** = Double Row **–DH** = Double Horizontal (Requires A-FTSH–04 lead style for mating)		**–BE** = Bottom Entry (Required for bottom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

SPECIFICATIONS

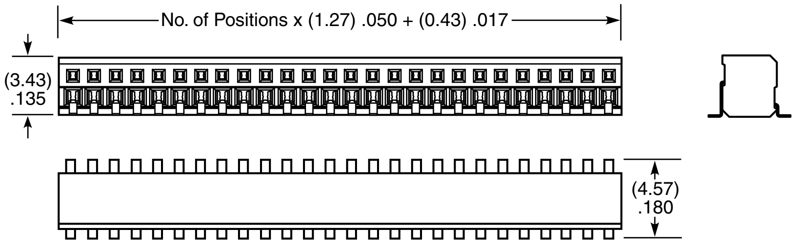
Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Sn or Au over 50 µ" (1.27 µm) Ni
Current Rating (A-CLP/A-FTSH):
3.4 A per pin (2 pins powered)
Voltage Rating:
280 VAC/396 VDC
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
Top Entry = (1.40 mm) .055" minimum
Bottom Entry = (2.41 mm) .095" minimum plus board thickness
DH Entry = (2.31 mm) .091"to (2.67 mm) .105"
Normal Force:
60 grams (0.59 N) average
Max Cycles:
100 with 10 µ" (0.25 µm) Au

PROCESSING

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



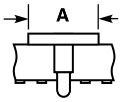
–D



–DH

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

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



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

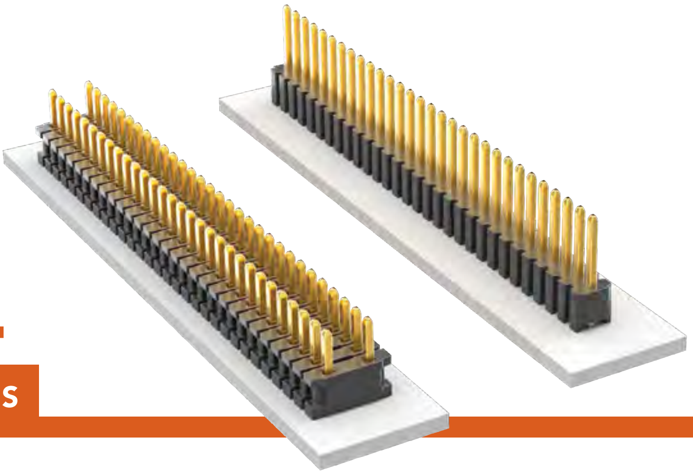
Notes:
Severe Environment Testing qualified. Visit samtec.com/set

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

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE



MODIFIED MICRO TERMINAL

(1.27 mm) .050" PITCH • A-MTMS SERIES

A-MTMS
Mates:
A-RSM

SERIES		1	NO. PINS PER ROW		LEAD STYLE		PLATING OPTION		ROW OPTION		POST HEIGHT		OPTION
A-MTMS = Modified Standard	–		**01 thru 50**	–	**Specify LEAD STYLE from chart**	–	**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail	–	**–S** = Single Row **–D** = Double Row	–	**–"XXX"** = "B" Dimension (Specify Post Height in inches (0.13 mm) .005" increments)	–	**–"XXX"** = Polarized Position (Specify position of omitted pin)

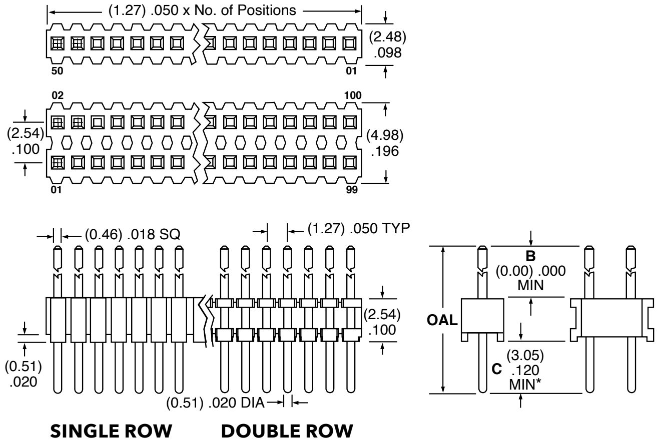
FLEX STACK

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



Tail DIA is .020" (0.51 mm) for min .120" (3.05 mm).
Balance of tail is .018" (0.46 mm) SQ.

LEAD STYLE	OAL	B (Maximum when C = (3.05 mm) .120")
–01	(11.43) .450	(5.84) .230
–02	(8.13) .320	(2.54) .100
–25*	(8.38) .330	(3.18) .125
–51	(10.41) .410	(4.83) .190
–52	(10.80) .425	(5.21) .205
–53	(12.83) .505	(7.24) .285
–54	(14.10) .555	(8.51) .335
–55	(15.49) .610	(9.91) .390
–56	(15.88) .625	(10.29) .405
–57	(16.51) .650	(10.92) .430
–58	(17.91) .705	(12.32) .485
–59	(19.18) .755	(13.59) .535
–60	(20.96) .825	(15.37) .605

*Style -25 tail C = (1.02 mm) .040" min is available.

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

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

66 samtec.com/Automotive

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.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE

SHROUDED HEADERS & STACKERS

(1.27 mm) .050" PITCH • A-TML/A-ZML SERIES

A-TML/A-ZML
Mates:
A-RSM

SPECIFICATIONS

A-TML

Insulator Material:
Black Liquid Crystal Polymer
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 +105 °C with Tin;
-55 °C to +125 °C with Gold

A-ZML

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

A-TML

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (05-20)
(0.15 mm) .006" max (32)*
*(.004" stencil solution may be available; contact IPG@samtec.com)

A-ZML

Same as A-TML except:
SMT Lead Coplanarity:
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)

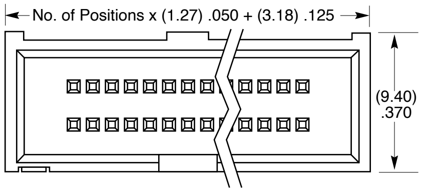
Notes:
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

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

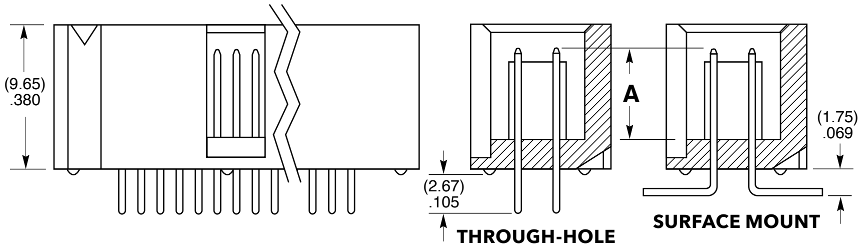
FLEX STACK

A-TML – 1 – NO. PINS PER ROW – LEAD STYLE – PLATING OPTION – D – TAIL OPTION – OTHER OPTION

A-TML	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
		05, 08, 10, 20, 32 (Standard sizes)	**Specify LEAD STYLE from chart**	**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail		(Leave blank for Through-hole) **–SM** = Surface Mount	**–"XXX"** = Polarized position (Specify position of omitted pin)

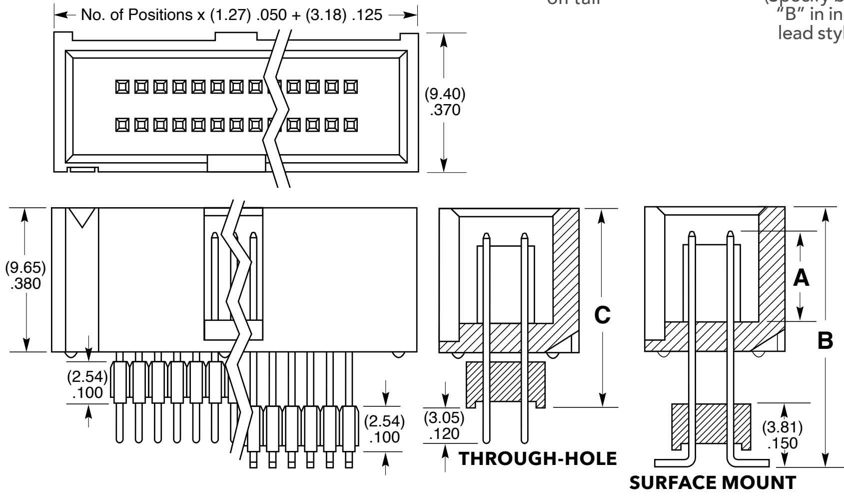


LEAD STYLE	POST HEIGHT (A)
–01	(3.05) .120
–02	(5.84) .230
–03	(4.32) .170



A-ZML – 1 – NO. PINS PER ROW – LEAD STYLE – PLATING OPTION – D – BODY HEIGHT – TAIL OPTION

A-ZML	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	BODY HEIGHT	TAIL OPTION
		05, 08, 10, 20, 32 (Standard sizes)	**Specify LEAD STYLE from chart**	**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail		(Leave blank for Through-hole) **–"XXX"** = –SM Body Height (Specify board space "B" in inches from lead style charts.)	(Leave blank for Through-hole) **–SM** = Surface Mount



THROUGH-HOLE	
LEAD STYLE	**BODY HEIGHT (C)**
–01	(12.83) .505
–02	(14.22) .560
–03	(16.64) .655
–04	(19.69) .775

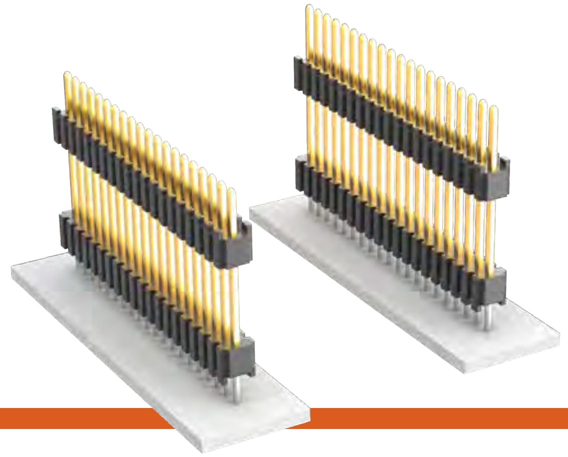
SURFACE MOUNT		
LEAD STYLE	**POST HEIGHT (A)**	**BODY HEIGHT (B)**
–53	(3.05) .120	(13.46) .530 to (20.19) .795
–54	(5.84) .230	(13.46) .530 to (17.40) .685

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.

MICRO BOARD STACKER

(1.27 mm) .050" PITCH • A-DWM SERIES



A-DWM
Mates:
A-RSM

A-DWM	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	OTHER OPTION
	01 thru 50	**Specify LEAD STYLE from chart**	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–S** = Single Row **–D** = Double Row	**–"XXX"** = Stacker Height Example: –200 = (5.08 mm) .200"	**– "XXX"** = Polarized Position (Specify position of omitted pin)

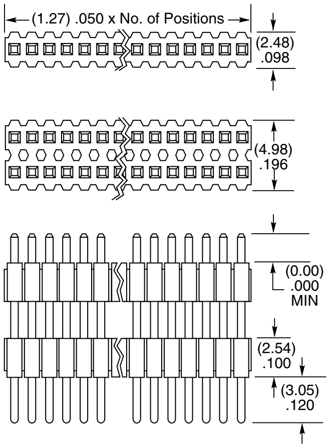
SPECIFICATIONS

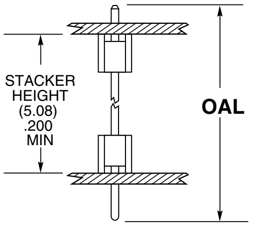
Insulator Material:
Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Au or Sn over 50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +105 °C with Tin
-55 °C to +125 °C with Gold

PROCESSING

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

OAL	
LEAD STYLE	**THROUGH-HOLE**
–01	(11.43) .450
–51	(10.41) .410
–52	(10.80) .425
–53	(12.83) .505
–54	(14.10) .555
–55	(15.49) .610
–56	(15.88) .625
–57	(16.51) .650
–58	(17.91) .705
–59	(19.18) .755
–60	(20.96) .825
–61	(26.67) 1.050





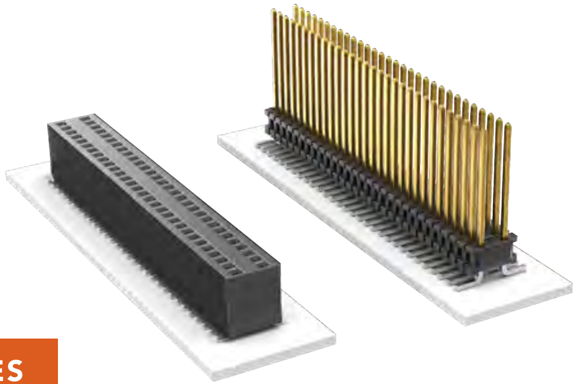
Notes:
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

ACD AUTOMOTIVE CERTIFIED DESIGN · IATF 16949 CERTIFIED · PPAP ELIGIBLE

SMT MICRO HEADER & SOCKET

(1.27 mm) .050" PITCH • A-FTR/A-RSM SERIES



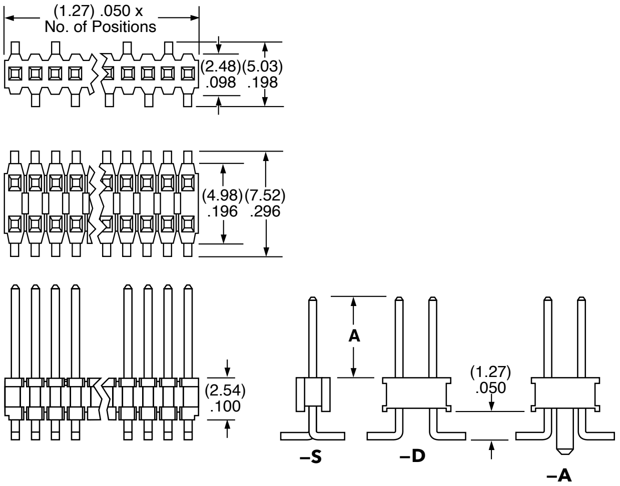
A-FTR
Mates:
A-RSM

A-RSM
Mates:
A-FTR

A-FTR	-	1	-	NO. PINS PER ROW	-	LEAD STYLE	-	PLATING OPTION	-	ROW OPTION	-	OPTION
				02 thru 40		Specify LEAD STYLE from chart		–L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail		–S = Single Row –D = Double Row		–"XX" = Polarized –A = Alignment Pin (5 positions min. for –D) –P = Plastic Pick & Place Pad (5 positions min. for –D) (8 positions min. for –S) –TR = Tape & Reel (4 positions min. for –S)

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
A-RSM: Phosphor Bronze
Terminal Material:
A-FTR: Phosphor Bronze
Plating:
Au or Sn over 50 µ" (1.27 µm) Ni
Operating Temp Range:
A-FTR: -55 °C to +105 °C with Tin;
A-FTR: -55 °C to +125 °C with Gold
A-RSM: -55 °C to +125 °C
Current Rating (A-FTR/A-RSM):
3.8 A per pin (2 pins powered)
Voltage Rating:
290 VAC/410 VDC
Lead Size Accepted:
A-RSM: (0.46 mm) .018" SQ
Insertion Depth:
A-RSM: Top Entry = (2.64 mm) .104" to (5.84 mm) .230" with (0.38 mm) .015" wipe, or pass-through.
A-RSM: Bottom Entry = (5.49 mm) .216" minimum (Add board thickness for correct post OAL)

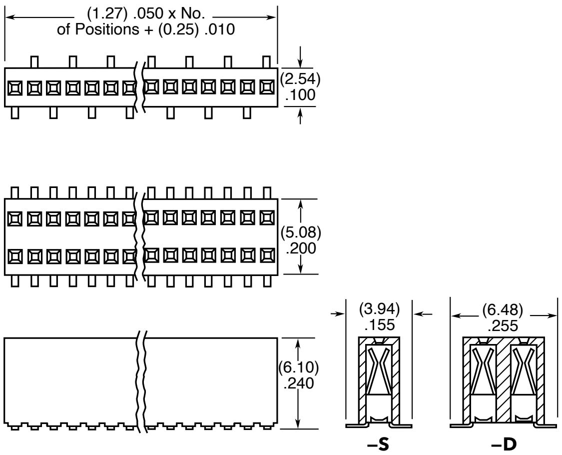


LEAD STYLE	A
–01	(5.84) .230
–02	(2.54) .100
–03	(3.18) .125
–51	(4.83) .190
–52	(5.21) .205
–53	(7.24) .285
–54	(8.51) .335
–55	(9.91) .390
–56	(10.29) .405
–57	(10.92) .430

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
A-RSM: (0.10 mm) .004" max
A-FTR: (0.10 mm) .004" max (02-20)
A-FTR: (0.15 mm) .006" max (21-40)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

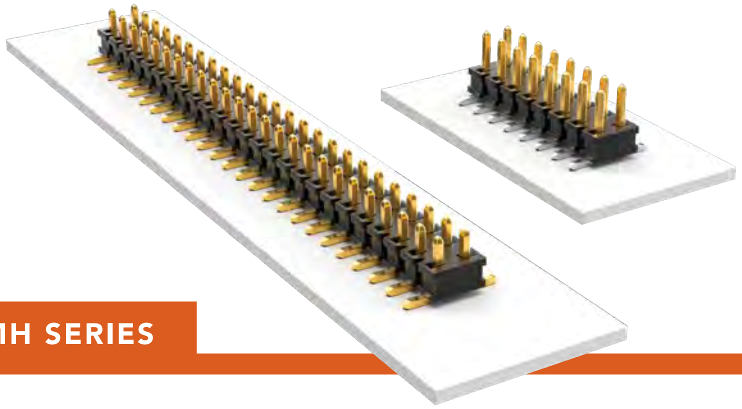
A-RSM	-	1	-	NO. PINS PER ROW	-	02	-	PLATING OPTION	-	ROW OPTION	-	OPTION
				02 thru 36				–L = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail		–S = Single Row –D = Double Row		–K = (6.25 mm) .246" DIA Polyimide film Pick & Place Pad (5 positions minimum for –D) (7 positions minimum for –S) –P = Plastic Pick & Place Pad (5 positions minimum for –D) (6 positions minimum for –S) –TR = Tape & Reel



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

FLEXIBLE SMT HEADER

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



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

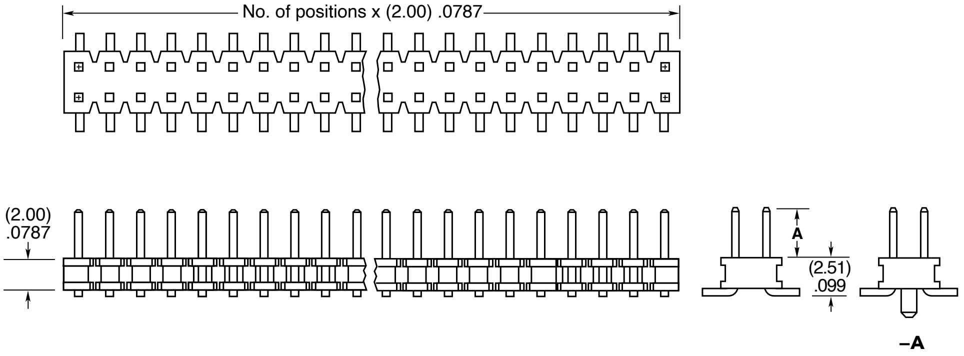
A-TMMH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	DV	OTHER OPTIONS
		03 thru 50	Specify LEAD STYLE from chart	**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail **–T** = Matte Tin		**–A** = Alignment Pin (3 positions minimum) **–TR** = Tape & Reel Packaging (36 positions maximum)

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over 50 µ" (1.27 µm) Ni
Current Rating (A-TMMH/A-CLT):
4.2 A per pin
(2 pins powered)
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:
405 VAC/573 VDC
mated with A-CLT;
281 VAC/397 VDC
mated with A-SQW;
250 VAC/354 VDC
mated with A-SQT

PROCESSING

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



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

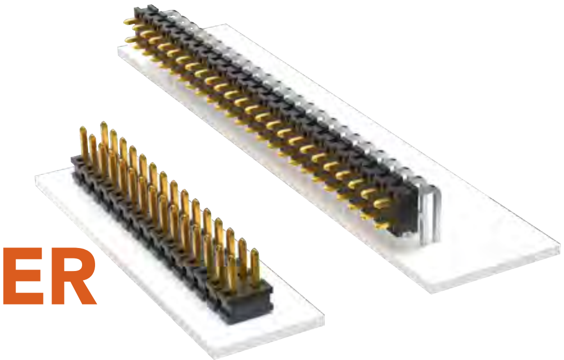
Note:
Some lengths, styles and options are non-standard, non-returnable.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

FLEXIBLE THROUGH-HOLE HEADER



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

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

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

SPECIFICATIONS

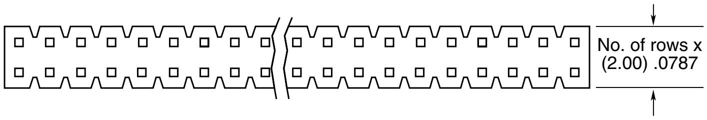
Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over 50 µ" (1.27 µm) Ni
Current Rating (A-TMMH/A-CLT):
4.2 A per pin
(2 pins powered)
Current Rating (A-TMMH/A-ESQT):
4.5 A per pin
(2 pins powered)
Current Rating (A-TMMH/A-SQT):
5.1 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
Voltage Rating:
405 VAC/573 VDC
mated with A-CLT;
281 VAC/397 VDC
mated with A-SQW;
250 VAC/354 VDC
mated with A-SQT

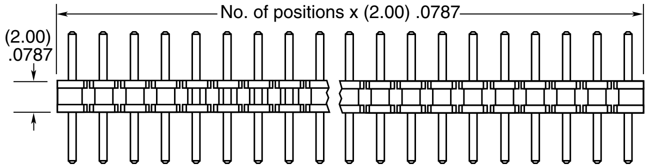
PROCESSING

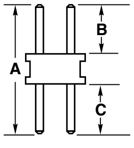
Lead–Free Solderable:
Yes

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES

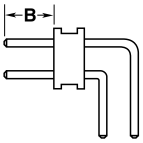
LEAD STYLE	A	B	C
–01	(7.67) .302	(3.20) .126	(2.46) .097
–04	(6.45) .254	(1.91) .075	(2.57) .101
–05	(6.45) .254	(1.65) .065	(2.29) .090







–D

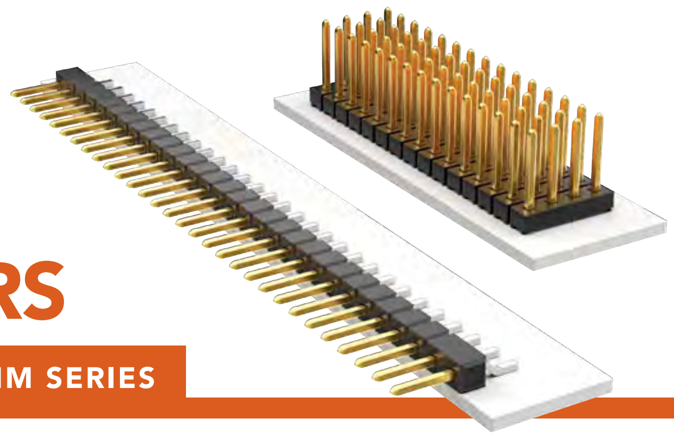


–RA

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

HORIZONTAL & MODIFIED HEADERS

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



A-MMT/A-MTMM

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

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

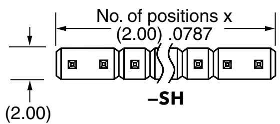
SPECIFICATIONS

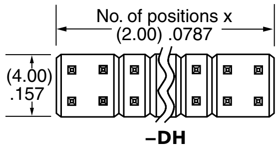
Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

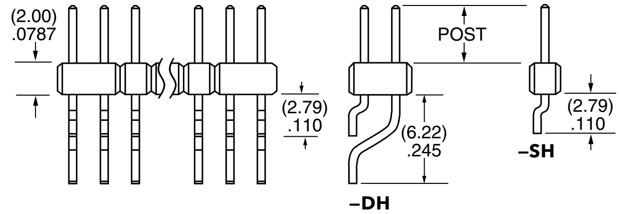
PROCESSING

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

A-MMT	–	1	NO. PINS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	ROW OPTION	–	OPTION
			02 thru 50		**–01** = (3.20 mm) .126" post **–02** = (4.45 mm) .175" post		**–L** = 10 µ" (0.25 µm) Gold post, Matte Tin on tail **–T** = Matte Tin		**–SH** = Single Row **–DH** = Double Row		**–K** = (4.00 mm) .157" DIA Polyimide Film Pick & Place Pad (3 positions min.) **–P** = Pick & Place Pad (2 positions min.) **–TR** = Tape & Reel

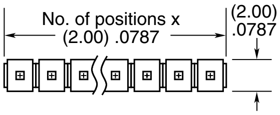


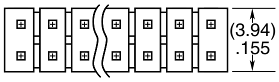


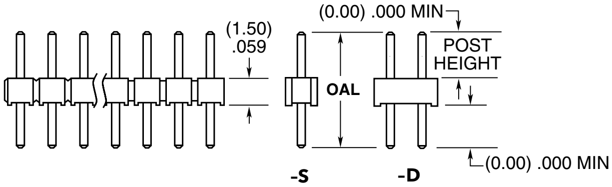


A-MTMM	–	1	NO. PINS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	ROW OPTION	–	POST HEIGHT
			01 thru 50		Specify LEAD STYLE from chart		**–L** = 10 µ" (0.25 µm) Gold post, Matte Tin on tail **–T** = Matte Tin		**–S** = Single Row **–D** = Double Row		**–"XXX"** = Post Height in inches (0.13 mm) .005" increments Example: –070 = (1.78 mm) .070"

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







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

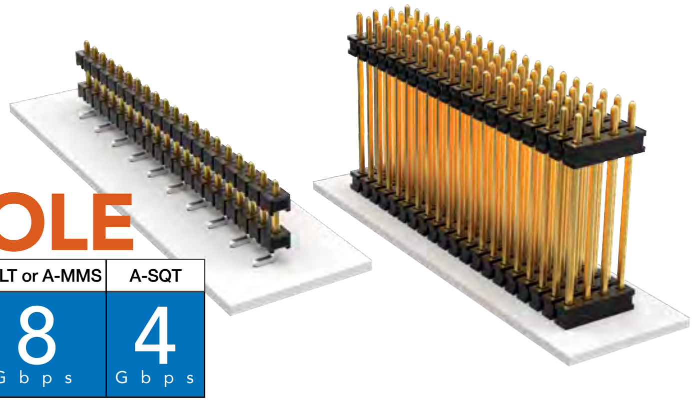
Due to technical progress, all designs, specifications and components are subject to change without notice.

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.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE



SMT & THROUGH-HOLE BOARD STACKERS

(2.00 mm) .0787" PITCH • A-TW SERIES

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

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

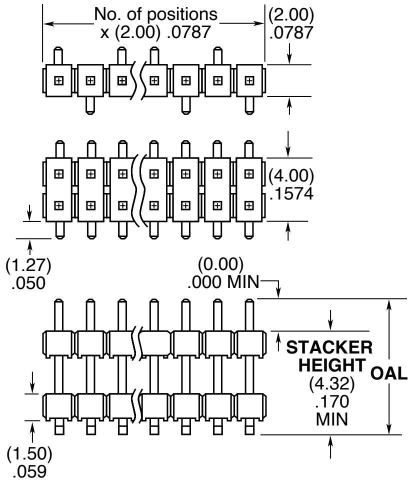
SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over
50 µ" (1.27 µm) Ni
Current Rating:
3.9 A per pin
(2 pins powered)
Voltage Rating:
350 VAC/495 VDC
Operating Temp Range:
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

PROCESSING

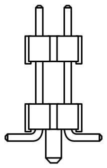
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)

A-TW	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	SM	OTHER OPTION
	02 thru 36	Specify LEAD STYLE from chart	**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail **–T** = Matte Tin	**–S** = Single Row **–D** = Double Row	**–"XXX"** = Stacker Height in inches (4.32 mm) .170" min. (0.13 mm) .005" increments Example: –250 = (6.35 mm) .250"		**–A** = Alignment Pin (4.83 mm) .190" min. board space (–D only) **–P** = Pick & Place Pad (1.91 mm) .075" min. post height (04-36 pins only) **–TR** Tape & Reel (–07 lead style not available) (–06 lead style with –P option not available as standard)

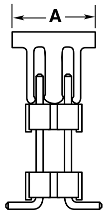


ROW OPTION	A
–S	(5.08) .200
–D	(6.35) .250

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

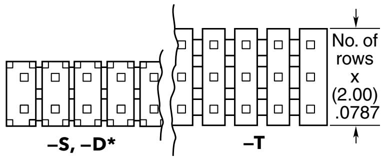


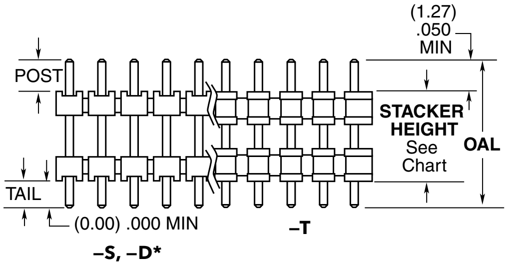
–A OPTION



–P OPTION

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





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

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

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

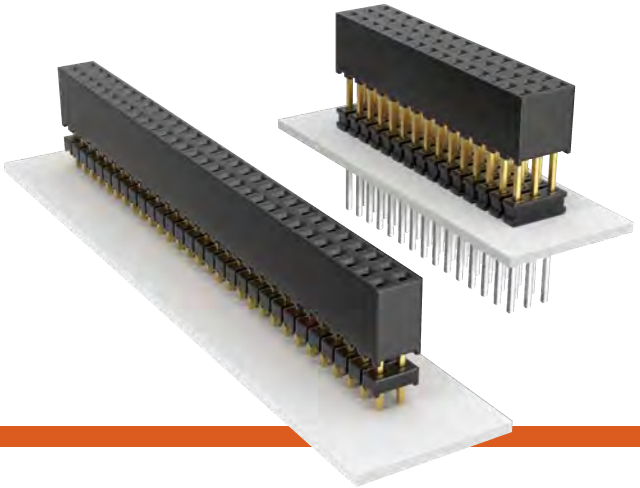
*Style –08 & –12 = S & D only

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

This Series is non-standard, non-returnable.

FLEXIBLE ELEVATED SOCKET STRIPS

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



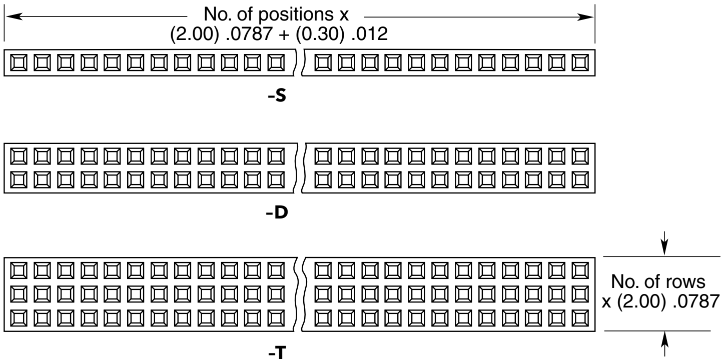
A-ESQT
Board Mates:
A-TMMH, A-TMM,
A-MTMM, A-MMT,
A-TW, A-ESQT

TIGER BUY™ CONTACT

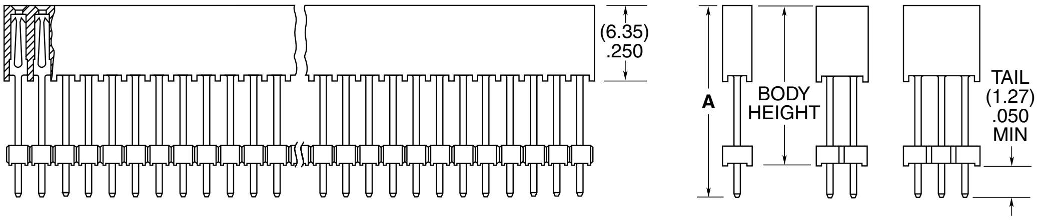
A-ESQT	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	BODY HEIGHT
		02 thru 50	Specify LEAD STYLE from chart	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–S** = Single Row **–D** = Double Row **–T** = Triple Row	**–"XXX"** = Body Height (in inches) (7.87 mm) .309" minimum for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

SPECIFICATIONS

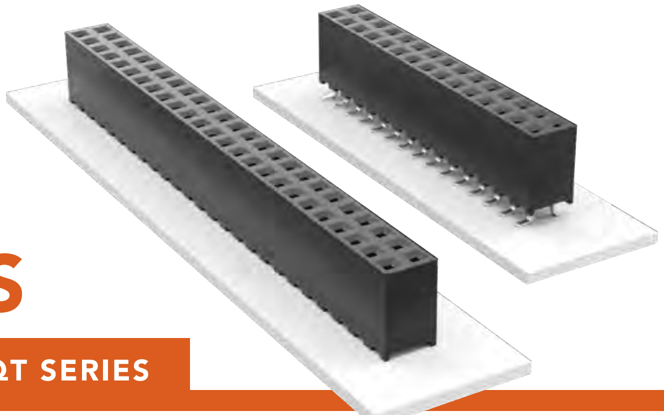
Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Sn or Au over
50 µ" (1.27 µm) Ni
Current Rating (A-ESQT/A-TMMH):
4.5 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
(2.62 mm) .103" to
(5.03 mm) .198" with
(0.38 mm) .015"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



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



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



COST-EFFECTIVE RUGGED SOCKETS

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

A-SQW/A-SQT

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

TIGER BUY™ CONTACT

SPECIFICATIONS

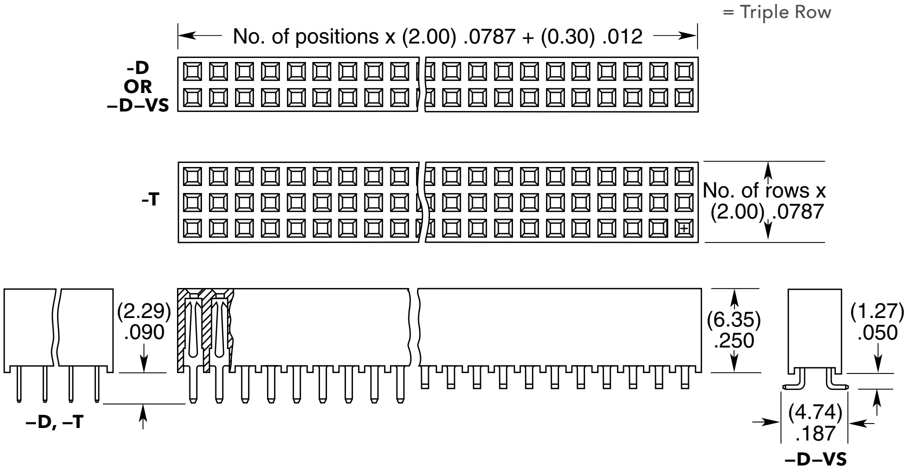
Insulator Material: Black Liquid Crystal Polymer
Contact Material: Phosphor Bronze
Plating: Sn or Au over 50 µ" (1.27 µm) Ni
A-SQW Current Rating (A-SQW/A-TMMH): 3.8 A per pin (2 pins powered)
A-SQT Current Rating (A-SQT/A-TMMH): 5.1 A per pin (2 pins powered)
Voltage Rating: 281 VAC/398 VDC mated with A-TMM; 250 VAC/354 VDC mated with A-TMMH
Operating Temp Range: -55 °C to +125 °C
A-SQW Insertion Depth: (2.62 mm) .103" to (5.03 mm) .198" with (0.38 mm) .015" wipe
A-SQT Insertion Depth: (2.62 mm) .103" to (5.03 mm) .198"
A-SQT Normal Force: 60 grams (0.59 N) average
Max Cycles: 100 with 10 µ" (0.25 µm) Au

PROCESSING

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

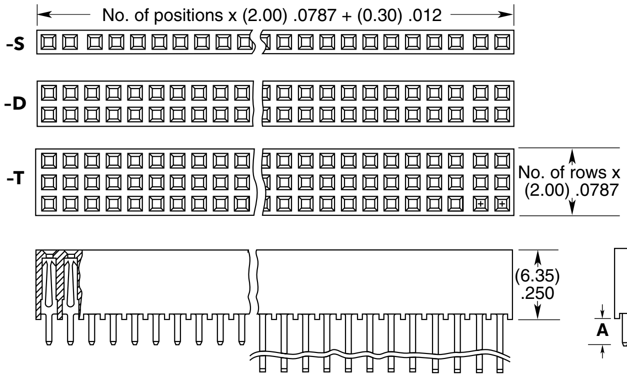
Note:
Some lengths, styles and options are non-standard, non-returnable.

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

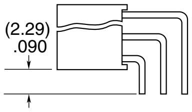


A-SQT	–	1	NO. PINS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	ROW OPTION	–	OTHER OPTION
			02 thru 50		Specify LEAD STYLE from chart		**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail		**–S** = Single Row **–D** = Double Row **–T** = Triple Row		**–RA** = Right-angle (Lead Style –01 only)

4 Gbps



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



–RA OPTION

ACD AUTOMOTIVE CERTIFIED DESIGN

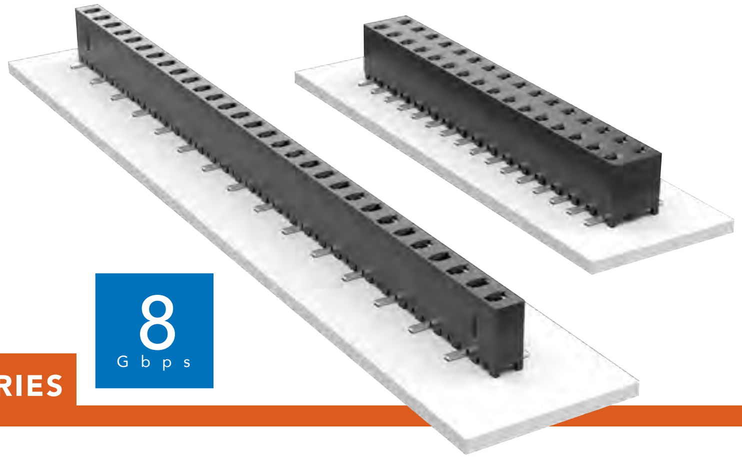
IATF 16949 CERTIFIED

PPAP ELIGIBLE

TIGER CLAW™ SOCKET STRIP

(2.00 mm) .0787" PITCH • A-MMS SERIES

8 Gbps



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

TIGER™ CLAW CONTACT

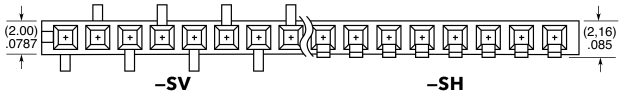
A-MMS	-	1	NO. PINS PER ROW	-	02	-	PLATING OPTION	-	ROW OPTION	-	OTHER OPTION
			02 thru 40				**–L** = 10 µ" (0.25 µm) Gold contact, Matte Tin on tail		**–SV** = Single Vertical **–DV** = Double Vertical **–SH** = Single Horizontal **–DH** = Double Horizontal		**–A** = Alignment Pin (-DV only) **–K**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

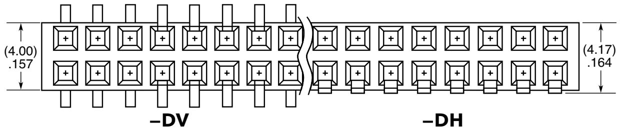
SPECIFICATIONS

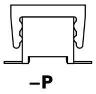
Insulator Material:
Black LCP
Contact Material:
Phosphor Bronze
Plating:
Sn or Au over
50 µ" (1.27 µm) Ni
Current Rating (A-MMS/A-TMM):
3.9 A per pin
(2 pins powered)
Voltage Rating:
350 VAC/495 VDC
Operating Temp Range:
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
Insertion Depth:
DH = (2.13 mm) .084" to
(2.79 mm) .110",
SH = (2.13 mm) .084"
minimum or pass-through
Top Entry DV/SV =
(2.13 mm) .084" to
(4.32 mm) .170"
Bottom Entry DV/SV =
(4.27 mm) .168" minimum
(Plus board)

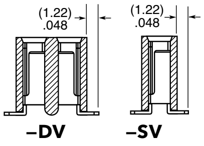
PROCESSING

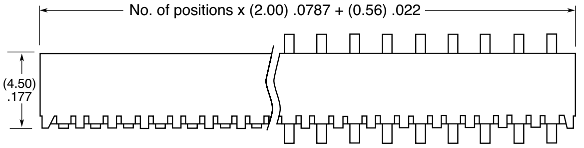
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact ipg@samtec.com)

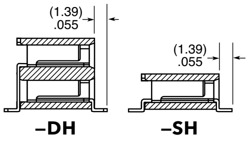










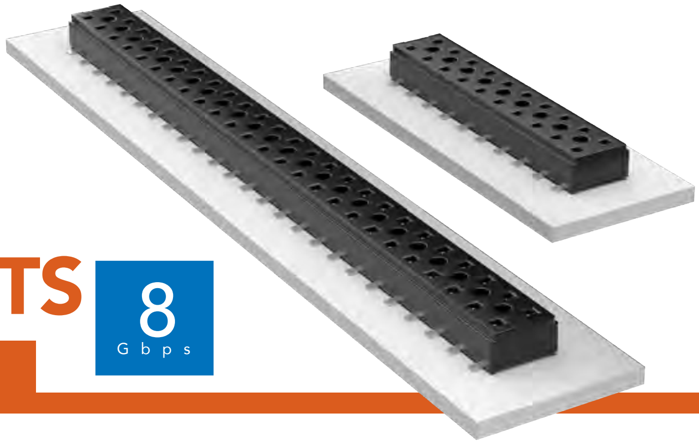


Note:
Some lengths, styles and options are non-standard, non-returnable.

COST-EFFECTIVE & DUAL WIPE SOCKETS

8 Gbps

(2.00 mm) .0787" PITCH • A-CLT SERIES



A-CLT

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

TIGER™ CLAW CONTACT

A-CLT – 1 – NO. PINS PER ROW – LEAD STYLE – PLATING OPTION – D – OTHER OPTIONS

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

–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)

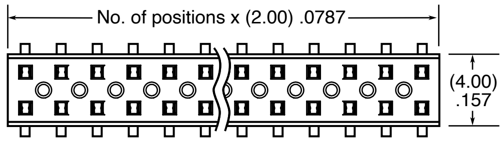
–TR = Tape & Reel (36 positions max)

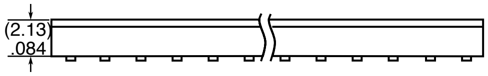
SPECIFICATIONS

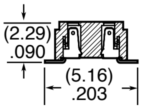
Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Sn or Au over 50 µ" (1.27 µm) Ni
Current Rating (A-TMMH/A-CLT):
4.2 A per pin
(2 pins powered)
Voltage Rating:
405 VAC/573 VDC
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
Top Entry=
(1.40 mm) .055" minimum
Bottom Entry=
(2.57 mm) .101" minimum
(add board thickness for correct post OAL)
Max Cycles:
100 with 10 µ" (0.25 µm) Au

PROCESSING

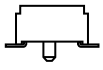
Lead–Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (02-25)
(0.15 mm) .006" max (26-34)*
(0.20 mm) .008" max (35-50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)







-02



–A Option

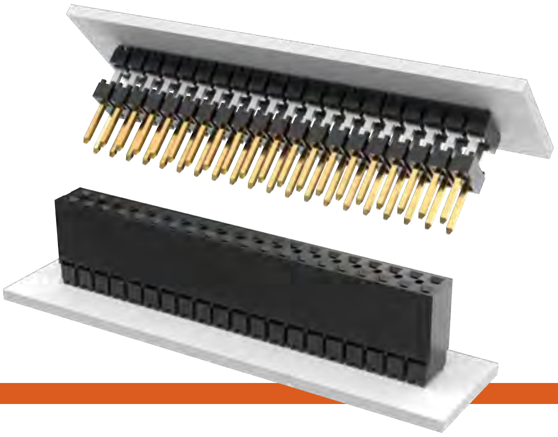
Note:
Some lengths, styles and options are non-standard, non-returnable.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

PRESS-FIT HEADERS & SOCKETS



(2.54 mm) .100" PITCH • A-PHT/A-PHF SERIES

A-PHT
Board Mates:
A-SSW, A-SSQ,
A-PHF, A-SSM

A-PHF
Board Mates:
A-TSW, A-MTSW,
A-TSM, A-PHT

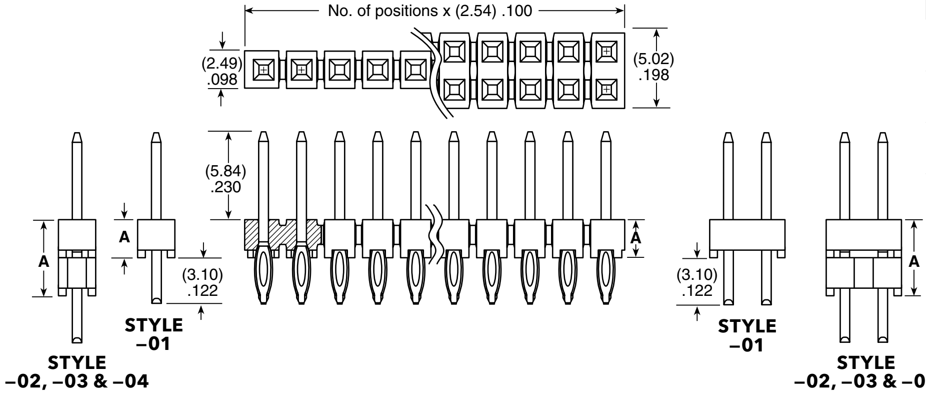
SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Current Rating (A-PHT/A-PHF):
4.8 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C with Gold
(A-PHF) Insertion Depth:
(3.68 mm) .145" to
(6.35 mm) .250"

PROCESSING

Contact ipg@samtec.com

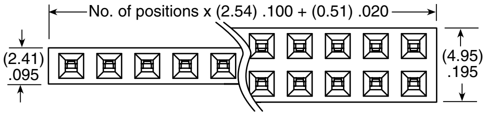
A-PHT	–	1	NO. PINS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	ROW OPTION	–	OTHER OPTION
			01 = (single row only) **02 thru 50**		Specify LEAD STYLE from chart		**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail		**–S** = Single Row **–D** = Double Row		**–"XXX"** = Polarized Position

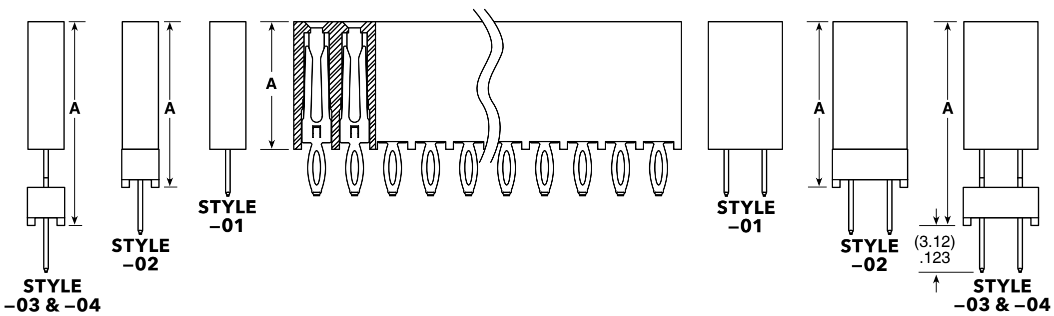


LEAD STYLE	A
–01	(2.54) .100
–02	(5.08) .200
–03	(7.62) .300
–04	(10.16) .400

A-PHF	–	1	NO. PINS PER ROW	–	LEAD STYLE	–	PLATING OPTION	–	ROW OPTION	–	OTHER OPTION
			01 = (single row only) **02 thru 50**		Specify LEAD STYLE from chart		**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail		**–S** = Single Row **–D** = Double Row		**–"XXX"** = Polarized Position

LEAD STYLE	A
–01	(8.50) .335
–02	(11.05) .435
–03	(13.59) .535
–04	(16.13) .635

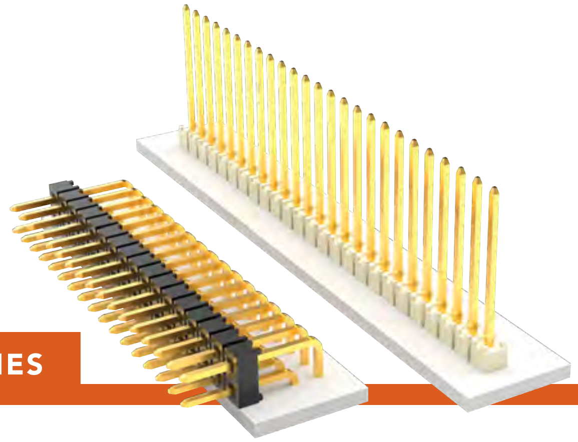




Note:
Some lengths, styles and options are non-standard, non-returnable.

MODIFIED .025" SQ POST HEADERS

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



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

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

SPECIFICATIONS

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

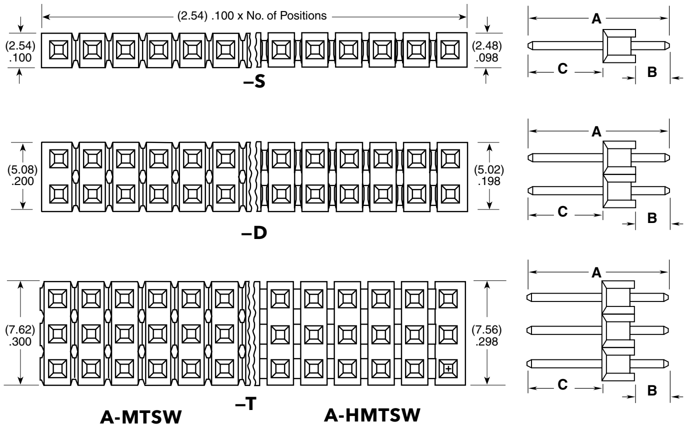
PROCESSING

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

LEAD STYLE	A
– 05	(8.51) .335
– 06	(7.62) .300
– 07	(10.92) .430
– 08	(13.46) .530
– 09	(18.54) .730
– 10	(21.08) .830
– 11	(23.62) .930
– 12	(26.16) 1.030
– 13	(31.24) 1.230
– 21	(36.32) 1.430
– 22	(16.00) .630
– 23	(11.30) .445
– 24	(12.19) .480
– 27	(33.78) 1.330
– 28	(28.70) 1.130

FOR "B" = (2.29) .090	
LEAD STYLE	C MAXIMUM STRAIGHT
– 05	(5.97) .235
– 06	(2.79) .110
– 07	(6.10) .240
– 08	(8.64) .340
– 09	(13.72) .540
– 10	(16.26) .640
– 11	(18.80) .740
– 12	(21.34) .840
– 13	(26.42) 1.040
– 21	(31.50) 1.240
– 22	(11.18) .440
– 23	(6.48) .255
– 24	(7.37) .290
– 27	(28.96) 1.140
– 28	(23.88) .940

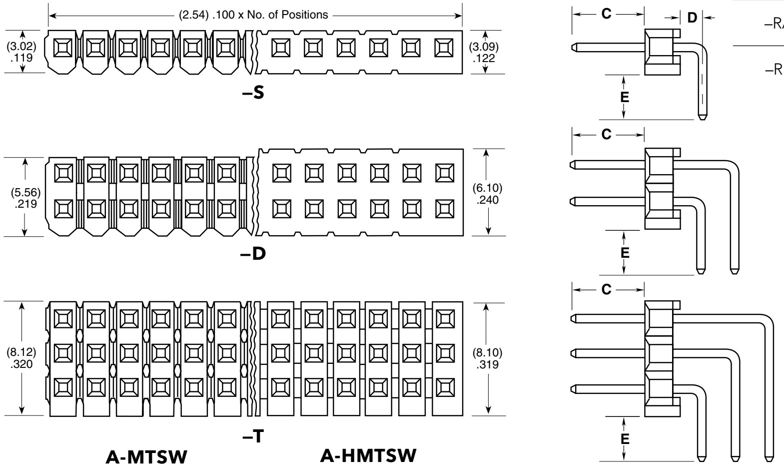
STRAIGHT PIN VERSIONS



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

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

RIGHT-ANGLE PIN VERSIONS



(-S & -D = 36 positions max.)

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

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

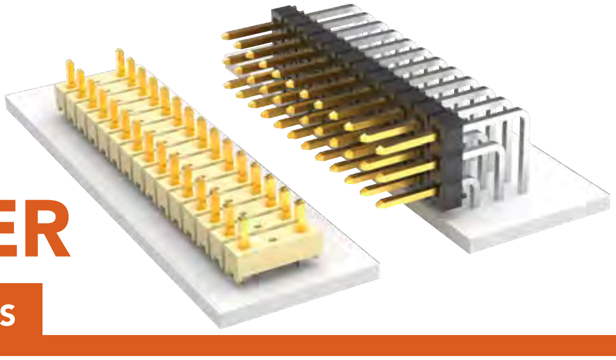
Due to technical progress, all designs, specifications and components are subject to change without notice.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE

THROUGH-HOLE .025" SQ POST HEADER



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

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

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

SPECIFICATIONS

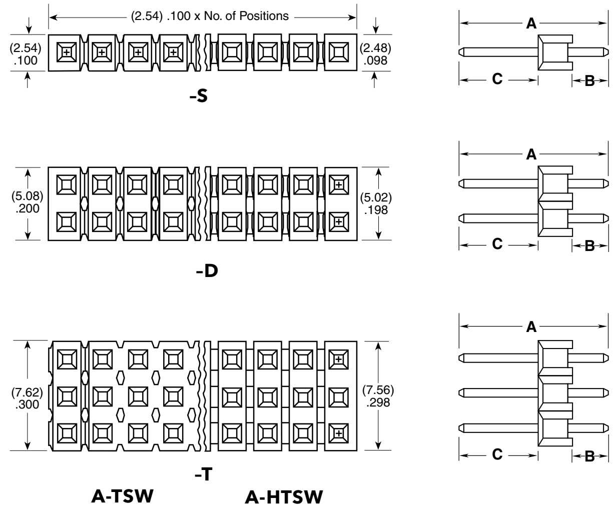
Insulator Material:
A-TSW: PBT
A-HTSW: Natural LCP
Terminal Material:
Phosphor Bronze
Plating:
Au or Sn over 50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
Voltage Rating:
465 VAC/658 VDC
Lead–Free Solderable:
A-HTSW: Yes
A-TSW: No, Lead Wave Only

CURRENT RATING (PER PIN)
A-TSW mated with

A-SSW	A-SSQ	A-SSM
5.7 A	6.3 A	5.2 A

2 POSITIONS POWERED

STRAIGHT PIN VERSIONS

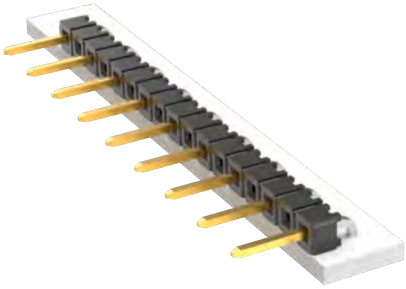


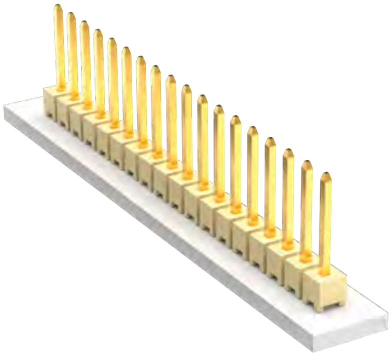
STRAIGHT PIN VERSIONS			
LEAD STYLE	**A**	**B**	**C**
–05	(8.51) .335	(3.30) .130	(2.67) .105
– 06	(7.62) .300	(2.41) .095	(2.67) .105
– 07	(10.92) .430	(2.54) .100	(5.84) .230
– 08	(13.46) .530	(5.08) .200	
– 09	(18.54) .730	(10.16) .400	
–10	(21.08) .830	(12.70) .500	
–11	(23.62) .930	(15.24) .600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

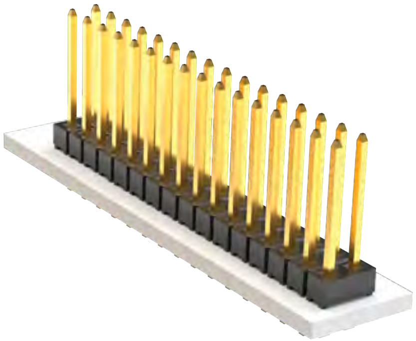
STRAIGHT PIN VERSIONS			
LEAD STYLE	**A**	**B**	**C**
–19	(26.16) 1.030	(2.79) .110	(20.83) .820
– 20	(31.24) 1.230		(25.91) 1.020
– 21	(36.32) 1.430	(2.79) .110	(30.99) 1.220
– 22	(16.00) .630	(7.62) .300	(5.84) .230
– 23	(11.30) .445	(2.92) .115	
– 24	(12.15) .480		(6.73) .265
– 25	(16.00) .630	(5.33)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

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

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

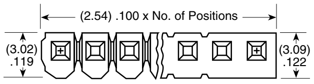




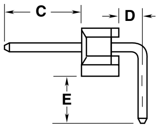


– PLATING OPTION	– ROW OPTION	– OTHER OPTION
–L = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail **–T** = Matte Tin	**–S** = Single Row **–D** = Double Row **–T** = Triple Row	(Leave blank for straight version) **–RA** = Right-angle **–RE** = Right-angle Elevated (A-HTSW only) **–NA** = Right-angle (Using straight body for coplanar mating with A-SSW-RA series)

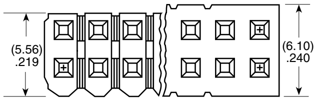
RIGHT-ANGLE VERSIONS



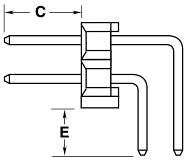
-S

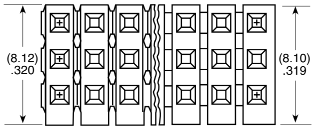


LEAD STYLE	D
– RA	(1.52) .060
– RE	(4.06) .160



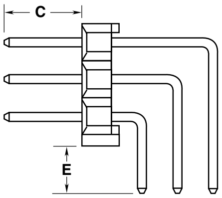
-D





-T

A-TSW **A-HTSW**



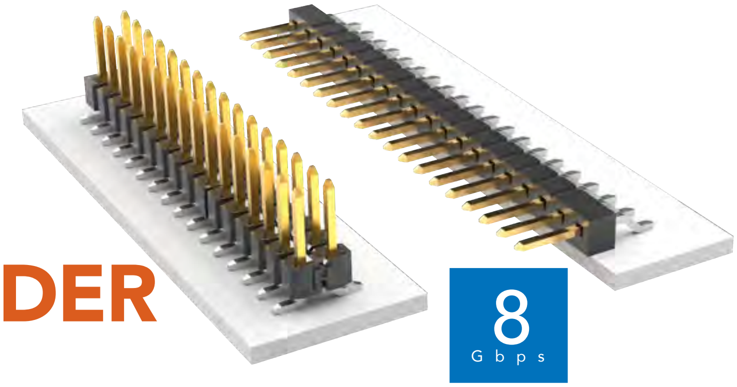
RIGHT-ANGLE VERSIONS		
-RE LEAD STYLE	C	SINGLE E
– 09	(5.84) .230	(4.83) .190
–10		(7.37) .290
–11		(9.91) .390
–12		(12.45) .490
–13		(17.53) .690
–16	(8.13) .320	(2.54) .100
– 21	(5.84) .230	(22.61) .890
– 22		(2.29) .090
– 27		(20.07) .790
– 28		(14.99) .590

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

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE



8 Gbps

SURFACE MOUNT .025" SQ POST HEADER

(2.54 mm) .100" PITCH • A-TSM SERIES

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

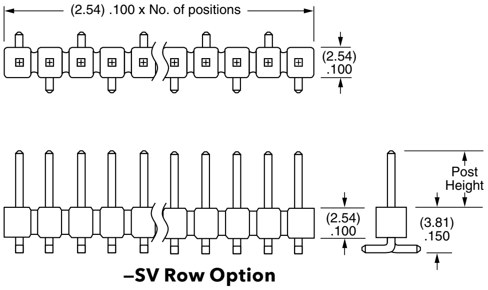
A-TSM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTIONS
		02 thru 30	Specify LEAD STYLE from chart	**–L** =10 µ" (0.25 µm) Gold on post, Matte Tin on tail **–T** = Matte Tin	**–SV** = Single Row Vertical Pin **–DV** = Double Row Vertical Pin **–SH** = Single Row Horizontal Pin **–DH**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

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold
Voltage Rating:
405 VAC/573 VDC
mated with a A-SSM

PROCESSING

Lead–Free Solderable:
Yes
-DH/-SH/-SV Lead Coplanarity:
(0.15 mm) .006" max (02-30)*
-DV Lead Coplanarity:
(0.10 mm) .004" max (02-05)
(0.13 mm) .005" max (06-10)*
(0.15 mm) .006" max (11-30)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

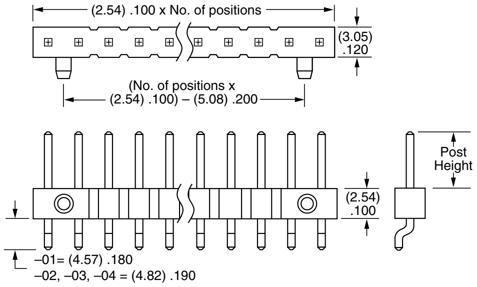


–SV Row Option

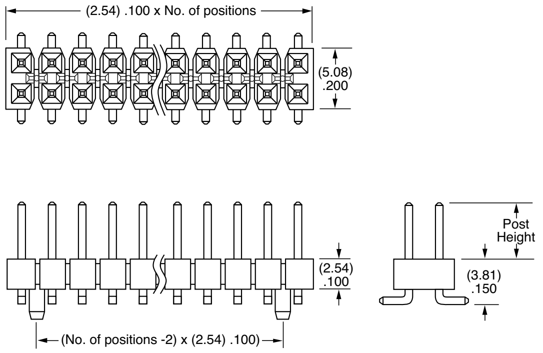
LEAD STYLE	POST HEIGHT	MATES WITH
–01	(5.84) .230	A-SSW, A-SSM
–02	(8.13) .320	A-SSM-DH
–03	(10.67) .420	Bottom Mount & Pass-Through
–04	(3.05) .120	N/A

MATES	CURRENT RATING (PER PIN)
A-TSM/A-SSW	4.7 A
A-TSM/A-SSM	5.6 A

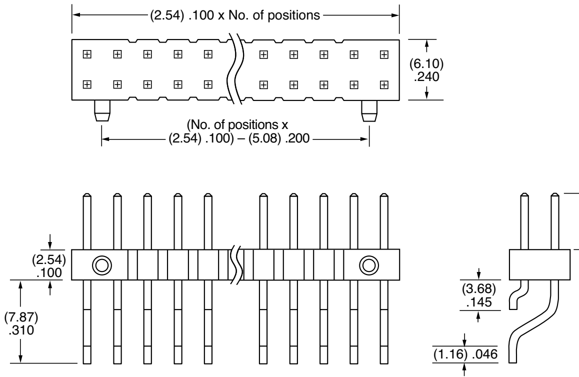
2 POSITIONS POWERED



–SH Row Option



–DV Row Option



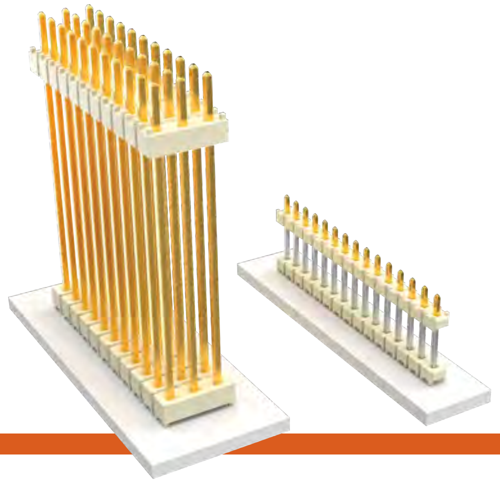
–DH Row Option

Notes:
Severe Environment Testing qualified.
Visit samtec.com/set

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

FLEXIBLE .025" SQ BOARD STACKERS

(2.54 mm) .100" PITCH • A-HW SERIES



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

FLEX
STACK

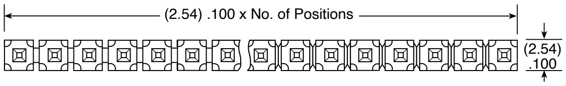
SERIES	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	OTHER OPTION
A-HW = High-Temp Custom Tail	**01 thru 50**	**Specify LEAD STYLE from chart**	**–L** = 10 µ" (0.25 µm) Gold on contact area of longer tail, Matte Tin on tail **–T** = Matte Tin	**–S** = Single Row **–D** = Double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

SPECIFICATIONS

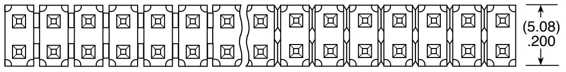
Insulator Material:
Natural Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

PROCESSING

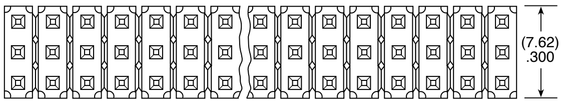
Lead–Free Solderable:
Yes



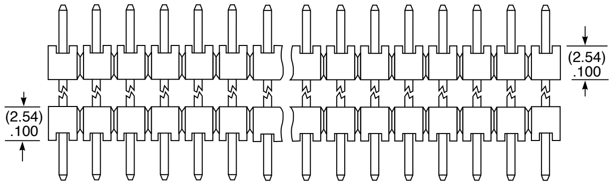
–S



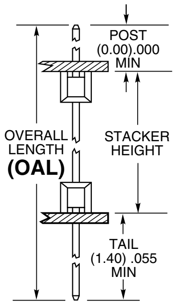
–D



–T



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



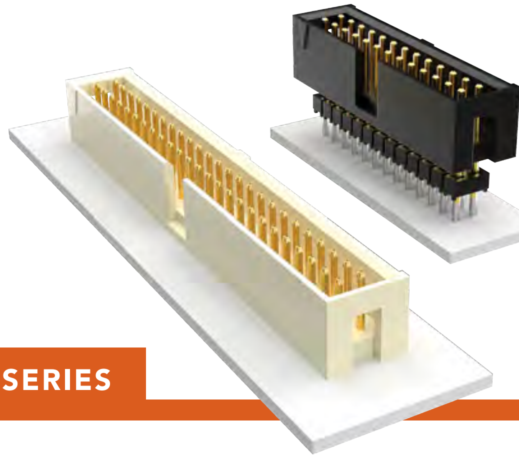
Notes:
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE



SHROUDED .025" SQ POST HEADERS

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

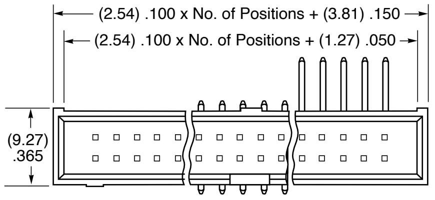
A-TSS/A-HTSS/A-ZSS
Mates:
A-SSW, A-SSQ, A-SSM

SERIES	-	1	NO. PINS PER ROW	-	LEAD STYLE	-	PLATING OPTION	-	ROW OPTION
A-TSS = Connector Strip **A-HTSS** = High Temp Connector Strip			**03** (A-TSS only) **05, 07, 08, 10, 12, 13, 15, 17, 20, 25, 32, 36** (Standard sizes)		**Specify LEAD STYLE from chart**		**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail **–T** = Matte Tin		**–D** = Double Row Through-hole (lead style –01, –02 & –03 only) **–DV** = Double Row Surface Mount (lead style –01 only) (A-HTSS only) **–D–RA** = Double Row Right-angle (lead style –04 & –05 only)

SPECIFICATIONS

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

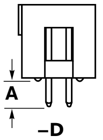
LEAD STYLE	T/H (A)
–01	(2.92) .115
–02	(4.19) .165
–03	(14.35) .565



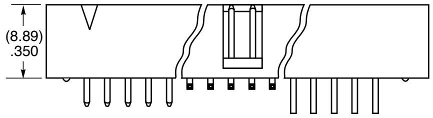
LEAD STYLE	RIGHT ANGLE (B)
–04	(3.30) .130
–05	(5.84) .230

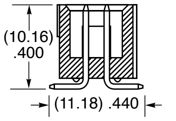
PROCESSING

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

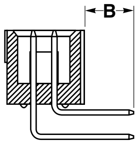


–D



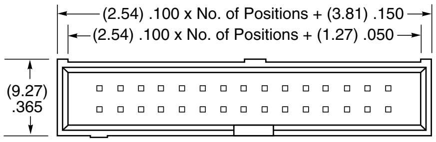


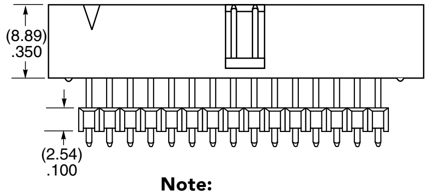
–DV
(A-HTSS ONLY)

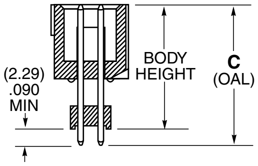


–D–RA

A-ZSS	-	1	NO. PINS PER ROW	-	LEAD STYLE	-	PLATING OPTION	-	D	-	BODY HEIGHT
			02-18, 20, 22, 24, 25, 28, 30, 32, 36 (Standard sizes)		**Specify LEAD STYLE from chart**		**–L** = 10 µ" (0.25 µm) Gold on post, Matte Tin on tail **–T** = Matte Tin				**–"XXXX"** = Body Height







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

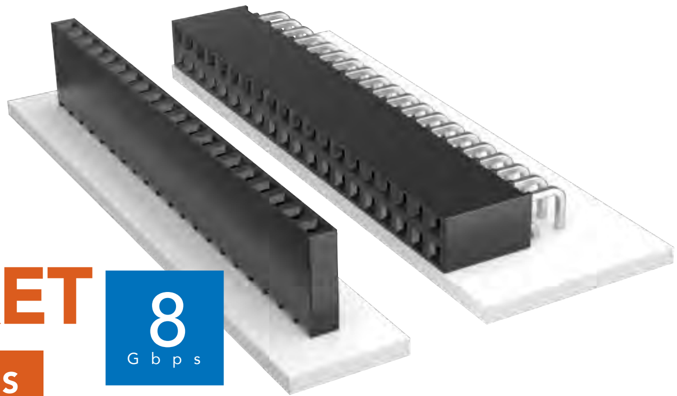
Note:
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

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

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE



THROUGH-HOLE .025" SQ POST SOCKET

8 Gbps

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

A-SSW/A-SSQ

Mates:
A-TSW, A-MTSW,
A-TSS, A-HTSS,
A-ZSS, A-TSM

TIGER BUY™ CONTACT

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

SPECIFICATIONS

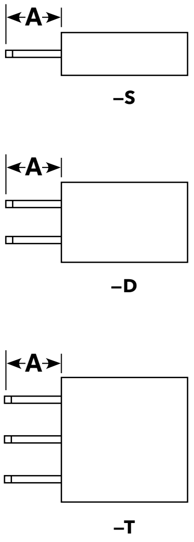
Insulator Material:
Black Liquid Crystal Polymer (-S & -D) or
Black High Temperature Thermoplastic (-T)
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Current Rating (A-SSW/A-TSM):
4.7 A per pin
(2 pins powered)
Current Rating (A-SSQ/A-TSW):
6.3 A per pin
(2 pins powered)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

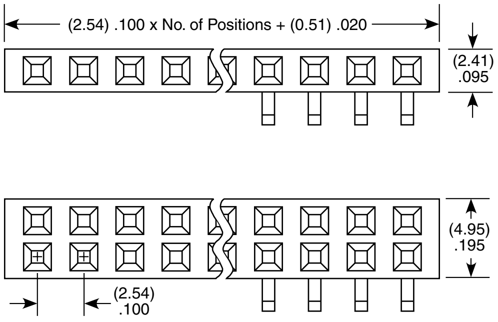
PROCESSING

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

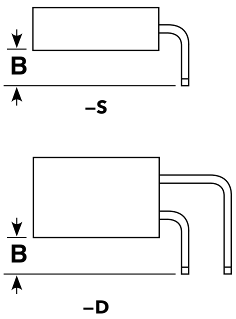
THROUGH-HOLE		
LEAD STYLE		SINGLE DOUBLE OR TRIPLE
Standard Insertion Force	Low Insertion Force*	A
–01	–21	(2.64) .104
–02	–22	(4.93) .194
–03	–23	(10.00) .394
–04	–24	(14.83) .584
–06**	N/A	(3.15) .124

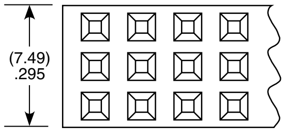
* LIF not available with Tin Plating
**Style –06 Not available with A-SSQ





Right-Angle





Through-hole

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

*LIF not available with Tin Plating

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

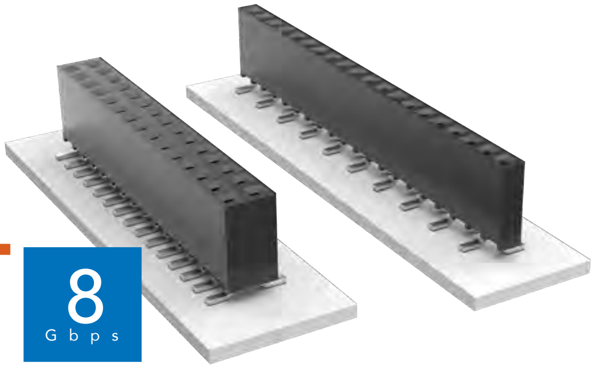
ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE

SURFACE MOUNT .025" SQ POST SOCKET

8 Gbps



(2.54 mm) .100" PITCH • A-SSW SERIES

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

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

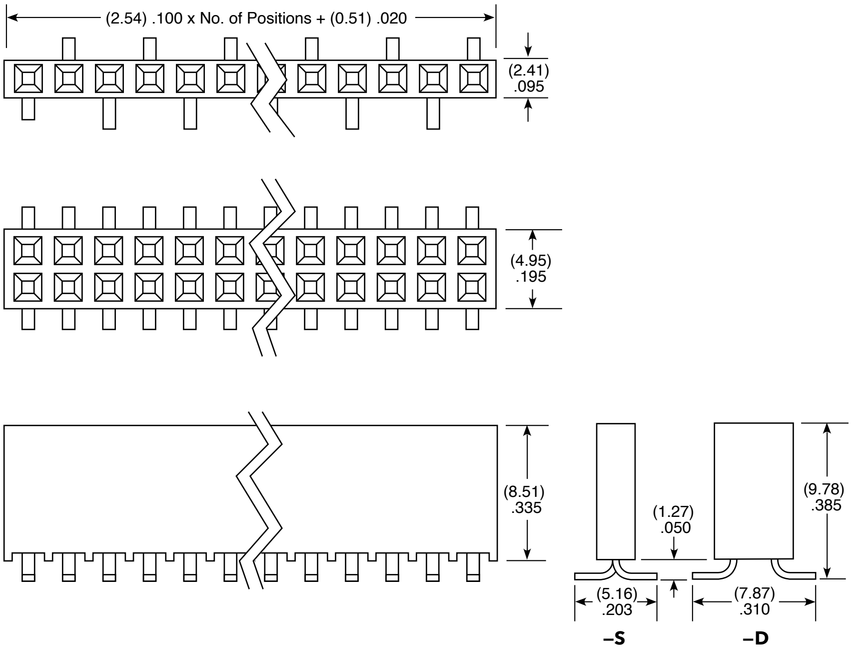
TIGER BUY™ CONTACT

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



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.

ACD
AUTOMOTIVE CERTIFIED DESIGN

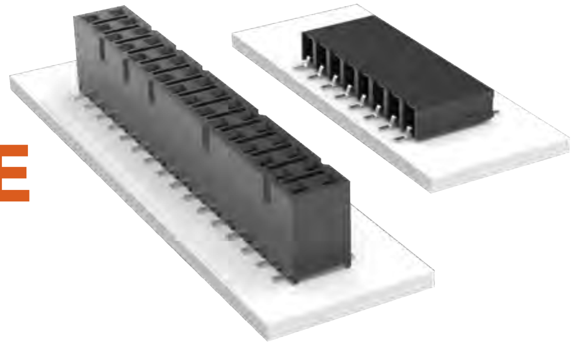
IATF 16949
CERTIFIED

PPAP
ELIGIBLE

TIGER CLAW™ SURFACE MOUNT SOCKET

8 Gbps

(2.54 mm) .100" PITCH • A-SSM SERIES



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

TIGER™
CLAW
CONTACT

A-SSM	– 1	– NO. PINS PER ROW	– PLATING OPTION	– ROW OPTION	– OTHER OPTION
		02 thru 36 (–SV, – SH, –DH) **02 thru 40** (–DV)	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–SV** = Single Row Vertical Pin **–DV** = Double Row Vertical Pin **–SH** = Single Row Horizontal Pin **–DH** = Double Row Horizontal Pin	**–A** =Alignment Pin (-DV only) **–BE** = Bottom Entry (–DV & –SV only) **–P** = Plastic Pick & Place Pad (–DV & –SV only) (6 positions min.; Contact Samtec on availability of other positions) **–K** = (6.50 mm) .256" DIA Polyimide film Pick & Place Pad (2 positions min.) –DV & –SV only **–TR** = Tape & Reel (29 positions max.)

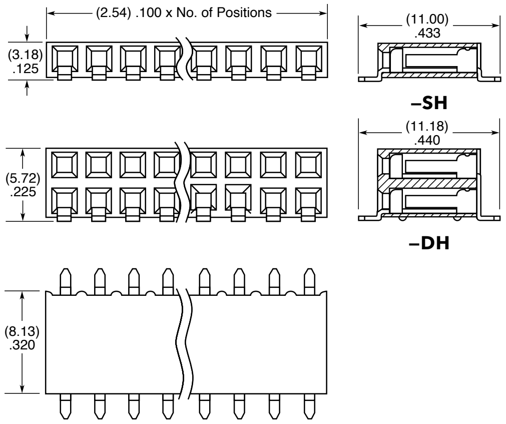
SPECIFICATIONS

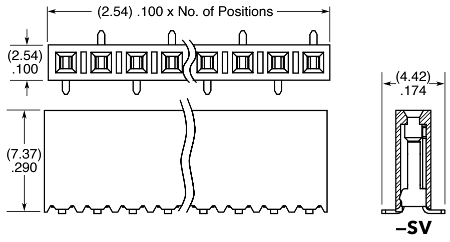
Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over 50 µ" (1.27 µm) Ni
Current Rating (A-SSM/A-TSW):
5.2 A per pin (2 pins powered)
Current Rating (A-SSM/A-TSM):
5.6 A per pin (2 pins powered)
Voltage Rating:
405 VAC / 573 VDC
Operating Temp Range:
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin
Insertion Depth:
-SV/-DV = (4.34 mm) .171" to (7.24 mm) .285" or pass-through from top; (5.56 mm) .219" plus board thickness minimum from bottom;
-SH/-DH = (4.34 mm) .171" to (6.35 mm) .250"
Normal Force:
125 grams (1.21 N) average

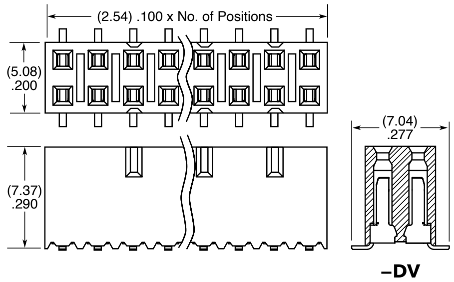
PROCESSING

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

10 YEAR MFG
EXTENDED LIFE PRODUCT
HIGH MATING CYCLES





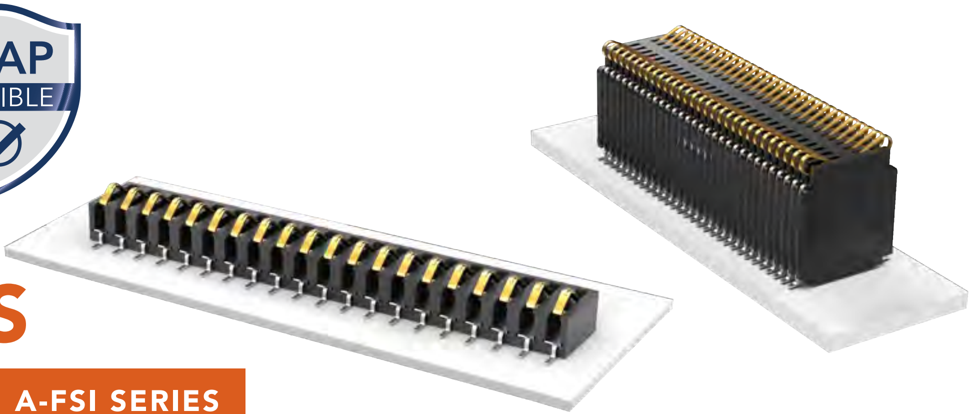


Note:
Some lengths, styles and options are non-standard, non-returnable.

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE



ONE-PIECE INTERFACES

(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)
Voltage Rating:
220 VAC/311 VDC
Operating Temp Range:
-55 °C to +125 °C
Plating:
Au over 50 µ" (1.27 µm) Ni

PROCESSING

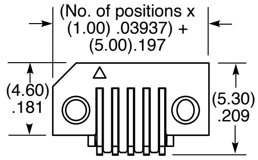
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (05-30)
(0.15 mm) .006" max (50)*
*(.004" stencil solution may be available; contact ipg@samtec.com)
Compression Board:
Gold Pads required

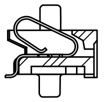
Notes:
Applications requiring 40-50 positions without threaded inserts, please contact Samtec Interconnect Processing Group.

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

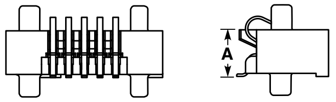
A-FSI	1	PINS PER ROW	BODY HEIGHT	PLATING OPTION	ROW OPTION	ALIGNMENT OPTION	OTHER OPTION
		05 thru 50 (Multiples of 5)	**–03** = 3 mm **–06** = 6 mm (Double Row only) **–10** = 10 mm (Double Row only)	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail (Not available with –03 body height)	**–S**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

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



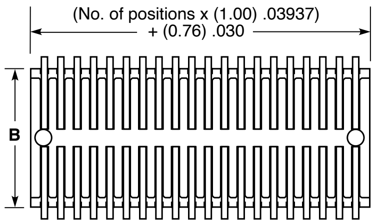


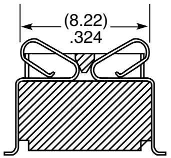
-03, -06 & -10 Contact Detail



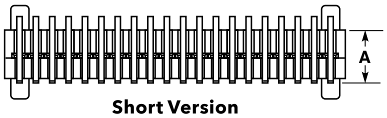
-03-AD Shown

Single Row Version –03, –06, –10

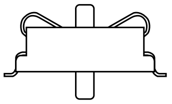




-06 & -10 Contact Detail



Short Version



-03-AD Shown

Double Row Version -03, -06, -10

(2.54 mm) .100" PITCH • A-SIB SERIES

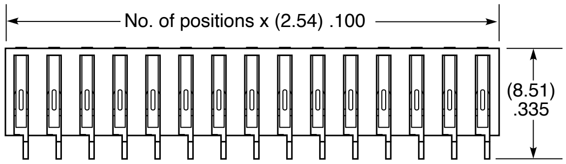
SPECIFICATIONS

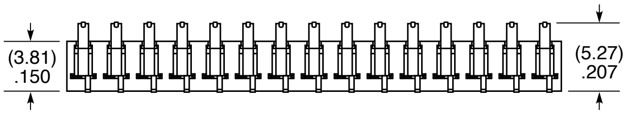
Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over 50 µ" (1.27 µm) Ni
Current Rating:
2.6 A per pin
(1 pin powered)
Voltage Rating:
280 VAC/396 VDC
Operating Temp Range:
-55 °C to +125 °C

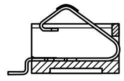
PROCESSING

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

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







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

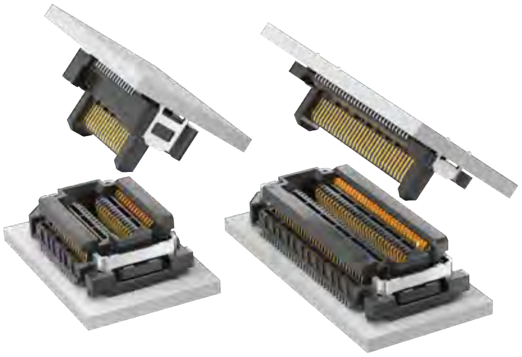
Some lengths, styles and options are non-standard, non-returnable.

ACD
AUTOMOTIVE CERTIFIED DESIGN

IATF 16949
CERTIFIED

PPAP
ELIGIBLE

HIGH-SPEED MICRO PITCH SYSTEM



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

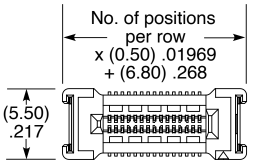
A-FT5
Mates:
A-FS5

A-FS5
Mates:
A-FT5

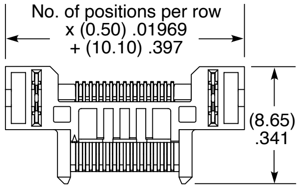
A-FT5	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	ROW OPTION	TH	OPTION	TR
	–15, –30 (Per Row)	**–01.0** = 1 mm Body Height **–03.0** = 3 mm Body Height **–01** = Right-angle	**–L** = 10 µ" (0.25 µm) Gold on contact, Matte Tin on tail	**–DV** = Vertical **–RA** = Right-angle	Leave blank for –RA **–TH**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

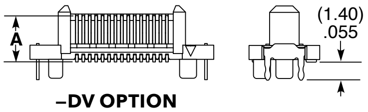
SPECIFICATIONS

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)
Voltage Rating:
180 VAC/255 VDC
Operating Temp Range:
-55 °C to +125 °C
Lead-Free Solderable:
Yes

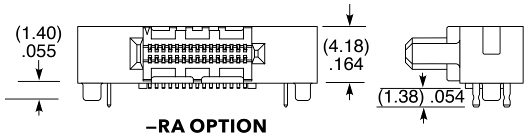


LEAD STYLE	A
–01.0	(3.72) .146
–03.0	(5.72) .225





–DV OPTION



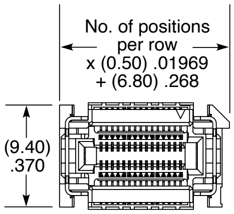
–RA OPTION

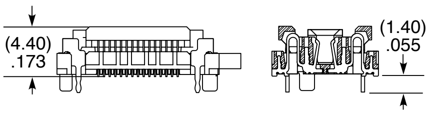
MATED HEIGHT *

A-FS5 LEAD STYLE	A-FT5 LEAD STYLE	
	-01.0	-03.0
-04.0	(5.00 mm) .197"	(7.00 mm) .276"

*Processing conditions will affect mated height.

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





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

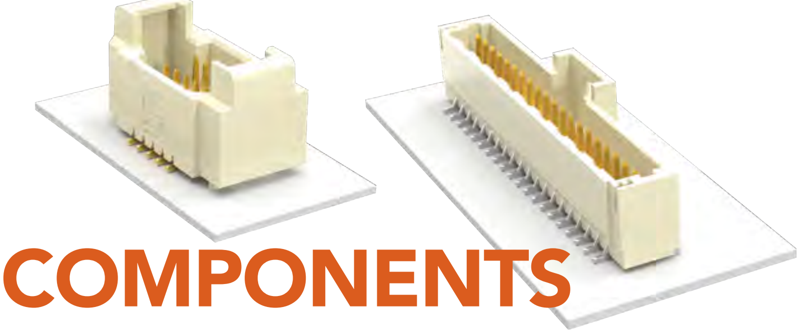
Some lengths, styles and options are non-standard, non-returnable.

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

ACD AUTOMOTIVE CERTIFIED DESIGN

IATF 16949 CERTIFIED

PPAP ELIGIBLE



DISCRETE WIRE HEADER/CABLE COMPONENTS

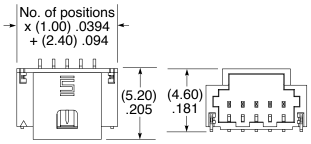
(1.00 mm) .0394" PITCH • A-T1M, A-ISS1, A-ISD1, A-CC09 SERIES

SPECIFICATIONS

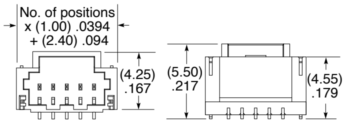
Insulator Material:
Natural LCP
Terminal Material:
Phosphor Bronze
Weld Tab:
Phosphor Bronze
Plating:
Au or Sn over
50 µ" (1.27 µm) Ni
Operating Temp Range:
-55 °C to +125 °C
(A-T1M)
-10 °C to +85 °C
(with PVC)
-40 °C to +125 °C
(with *Teflon™ fluoropolymer)
Current Rating:
2.6 A per pin
(1 pin powered)
Voltage Rating:
250 VAC/354 VDC

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

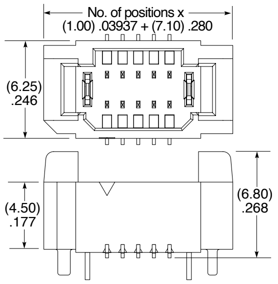
MICROMATE™



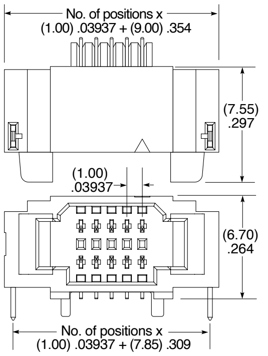
–SH



–SV



–DV

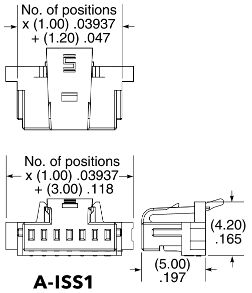


–DH

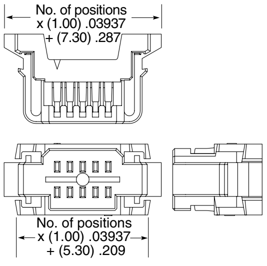
*Teflon™ is a trademark of The Chemours Company FC, LLC used under license by Samtec

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

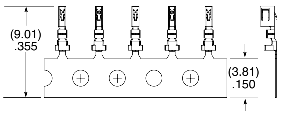
SERIES	– 01	– PLATING
A-CC09R = Contact, Full Reel (25,000 Parts per Reel)		**–GF** = 3 µ" (0.07 µm) Gold contact and tail



A-ISS1



A-ISD1



Contact Material:
Phosphor Bronze

TOOLING

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

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

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

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.

INDEX

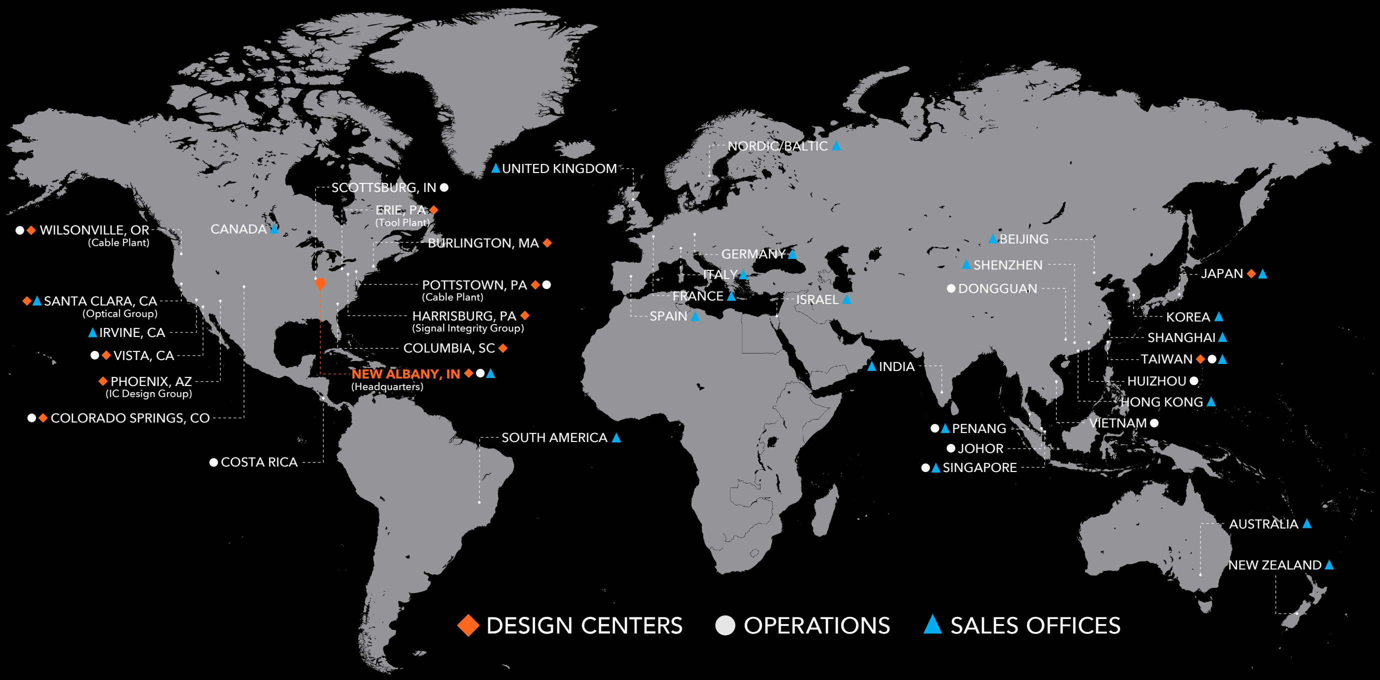
Note:
New automotive products highlighted in ***bold***

GENERAL POLICY INFORMATION

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

Federal Supply Code: 55322

GLOBAL MANUFACTURING & SUPPORT



samtec

SUDDEN SERVICE®