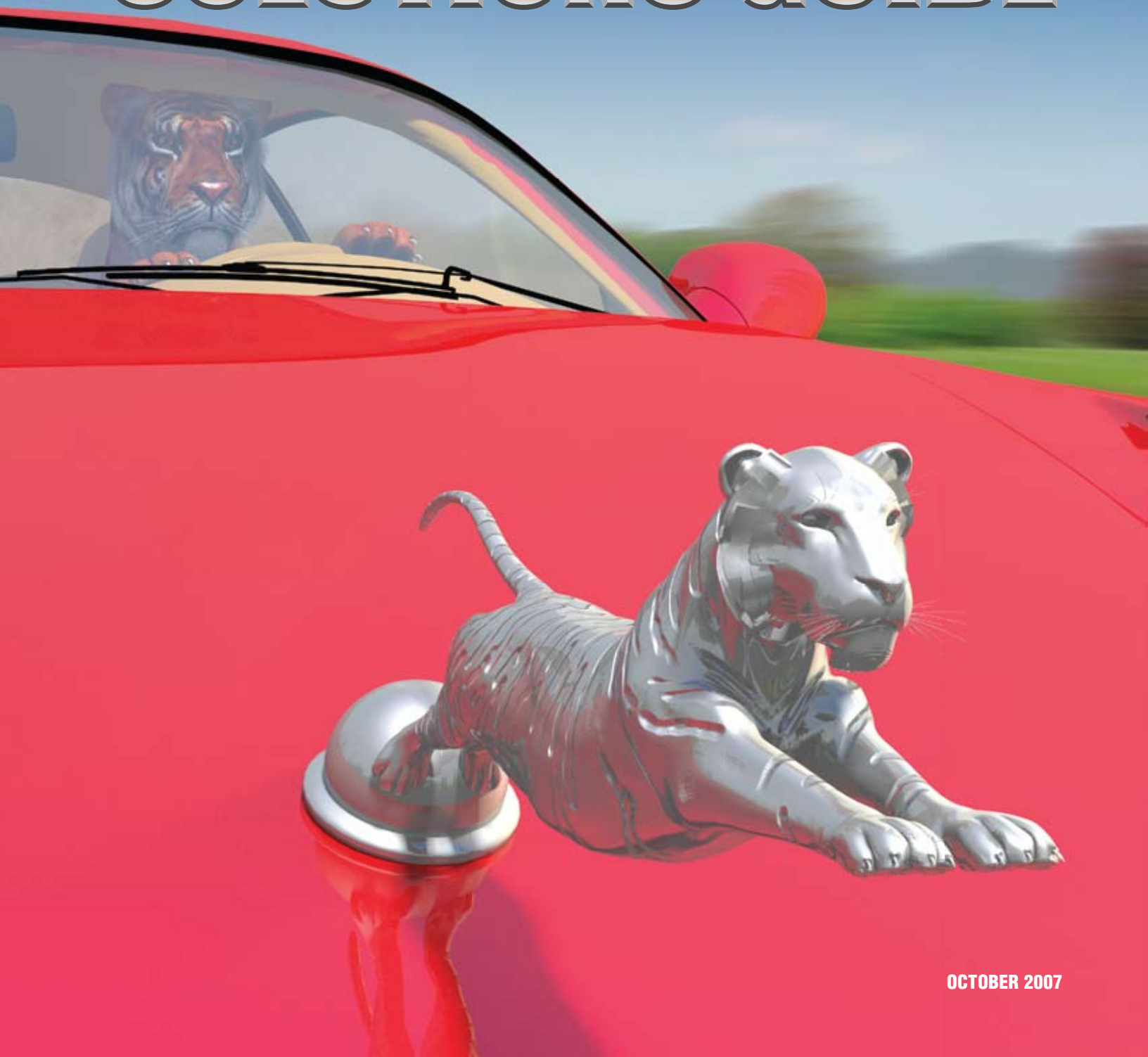


AUTOMOTIVE SOLUTIONS GUIDE

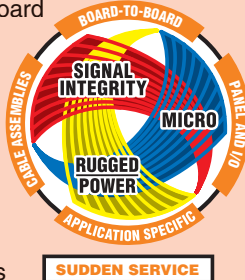


Automotive Expertise

Interconnect Solutions

Samtec's roots are in interconnects and electromechanical applications. Initially known for board level interconnects, Samtec has used its expertise in micro pitch, high-performance, power and cable systems to develop a full line of end-to-end interconnect system solutions for automotive applications, which include:

- Rugged & Power Interconnects
- Micro Board-to-Board
- Standard Board-to-Board
- Micro Card Interfaces
- High Speed Interconnects
- Standard, High Speed and Discrete Wire Cable Assemblies



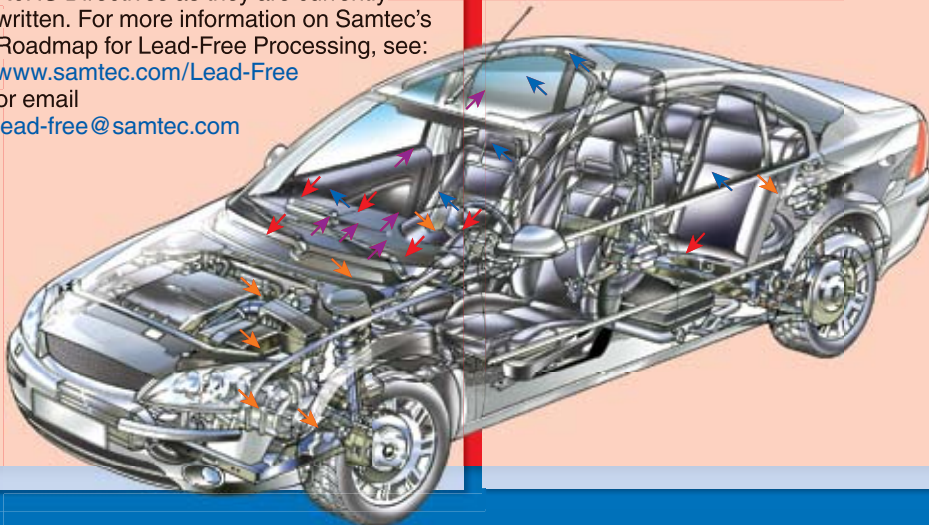
- Signal Integrity Services

Samtec's automotive scope is the design and manufacturing of electronic connectors marketed as "ACD Series" (Automotive Certified Designs) for PCBs. While ACD part numbers are not available for every automotive application, Samtec offers additional support with its standard catalog products and express ASPs (Application Specific Products).

In addition, most Samtec products are suitable for prototype and test equipment applications. For more information on ACD Series certification or on specific applications, please contact autosalesgroup@samtec.com

Environmental Compliance

The majority of Samtec products are compliant with the EU WEEE and RoHS Directives as they are currently written. For more information on Samtec's Roadmap for Lead-Free Processing, see: www.samtec.com/Lead-Free or email lead-free@samtec.com



Quality Systems

Samtec is TS 16949 and ISO 14001 and ISO 9001 certified, and is fully integrated with in-house tooling, plating and automated manufacturing capabilities for advanced development, low-cost, quick-turn and high volume production.

- Samtec USA is ISO 14001 and TS 16949 and ISO 9001 certified
- Samtec Singapore is QS 9002 and TS 16949 certified
- Samtec Malaysia is ISO 9001 and TS 16949 certified
- Samtec China is ISO 9001 and TS 16949 certified



Service Leadership

The Bishop Report has ranked Samtec #1 in Customer Service in its annual "Survey of the Electronic Connector Industry" for over ten years. Samtec is ranked #1 in:

- Customer Service
- Product quality
- On-time delivery
- Website usefulness
- Technical support & expertise
- Turnaround time to design a new connector



Applications

With Signal Integrity design and analysis and prototyping labs for quick sample turnaround, Samtec is the ideal supplier for many automotive connector applications.

Control Modules

- Instrument panel and cockpit
- Steering modules
- Brake modules
- Engine control systems
- Power door locks
- Automatic transmission (Tiptronic)

Safety

- Warning sensors
- Emergency communication
- Anti-theft systems
- Safety trunk release
- Hands free systems
- Airbag release systems

DIS/Audio (Driver Information Systems)

- GPS
- Satellite Radio
- Entertainment Systems
- Navigation, Tracking
- Radar Controlled Cruise Control
- Heads-up Display System

Interior

- Power Windows and Seats
- Sunroof, Moonroof controls
- Day/Night Mirrors
- Interior Lighting
- Night Vision System
- Climate Control

Global Operations

Samtec “Global Fusion”

One World • One Company • One Source – Samtec Global Fusion

Samtec’s four worldwide facilities provide redundant manufacturing capabilities, optimized labor costs and deliveries, and the flexibility to quickly achieve additional capacity to support market demands.

Samtec’s Global Information Network was developed in-house and designed around the company’s business model. This completely customized system ensures 24-hour, real-time responsiveness any time, anywhere in the world, making Samtec the service leader in the connector industry.

4 x 25 Operations Model

- Manufacturing, plating and sourcing in both hemispheres
- Manufacturing locations in USA, Costa Rica, Malaysia and China
- Low cost, quick-turn and advanced development
- Global logistics, custom worldwide systems
- Global quality and engineering systems

Samtec Global Network

- Ensures complete synergy among Samtec’s service, manufacturing and quality strategies
- Integrates all sales, support offices and manufacturing facilities worldwide, 24 hours a day, 7 days a week
- Empowers associates to provide real-time responsiveness and make decisions from anywhere in the world, at any time
- No interruption or delays due to location, time zone or language

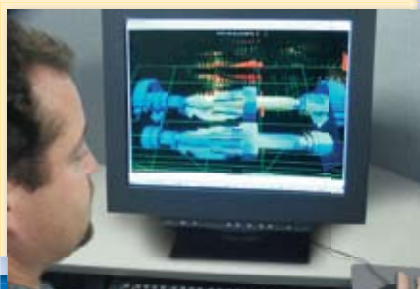
Samtec Sudden Service®

- Sudden Service® ensures quick-turn deliveries, samples and information
- Online information and support



Testing & Development

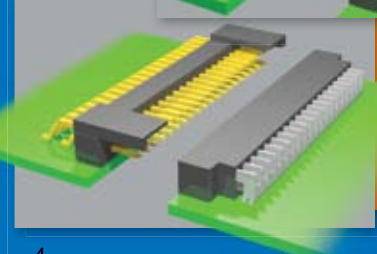
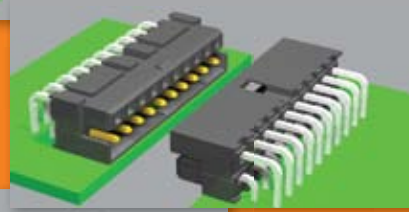
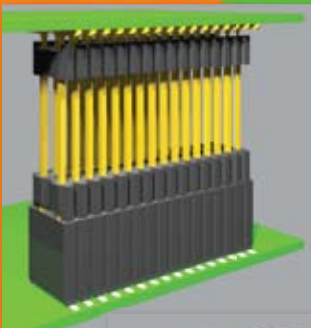
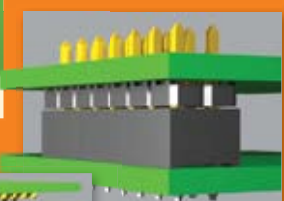
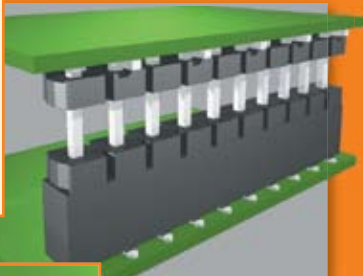
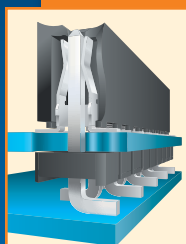
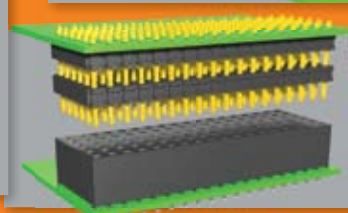
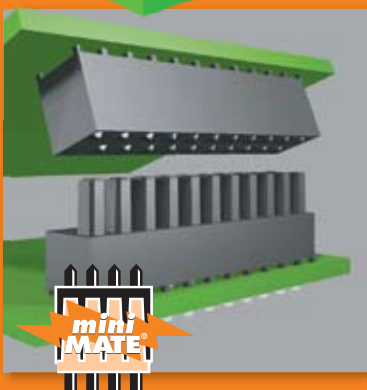
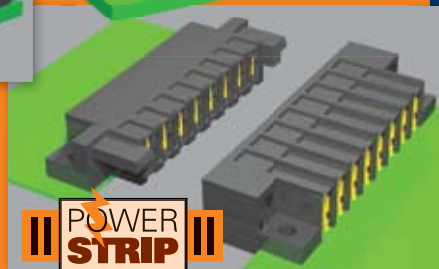
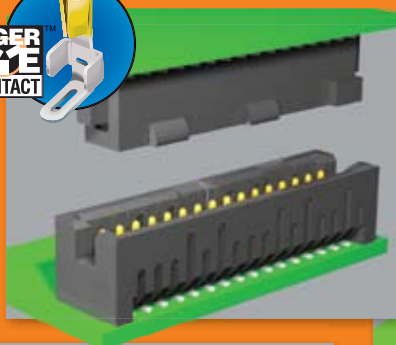
- Signal Integrity Division develops SPICE Models, IBIS Models, High Speed Characterization Reports and Time and Frequency Domain Test Data
- Stereolithography prototype capability for mechanical studies
- Quick-turn manufacturing prototype capability
- In-house wire EDM capability for pin prototypes
- Connector processing lab
- Mechanical and electrical testing labs



Rugged Interconnect Systems

Board-to-Board Systems

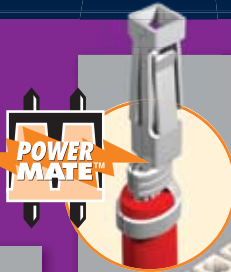
- PowerMate™ & MiniMate®
- Tiger Eye™ Contact Systems
- Standard, Power & Low Profile Headers & Sockets
- High Density Headers, Sockets & Stackers
- Combination Socket/Terminal
- Micro Edge Card Interfaces
- Right Angle Pin & Socket
- One Piece Interfaces
- PowerStrip High Power Headers & Sockets and Signal/Power combos



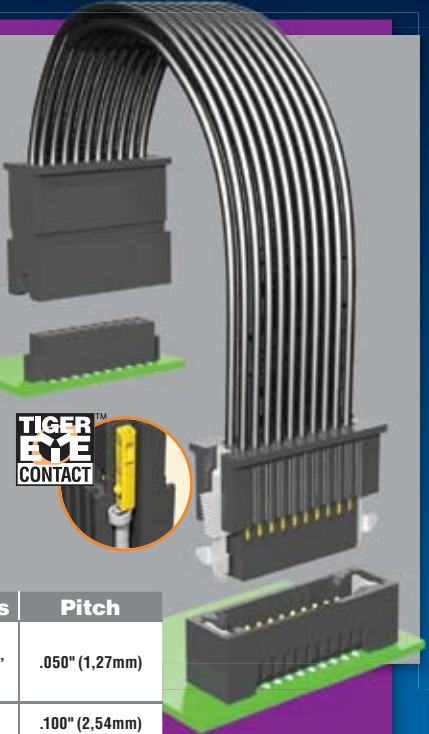
Series	Description	Features	Pitch
TSM, TSW	Terminal Strips	Alignment Pins, Locking Clips, Polarization	.025" (0,635mm)
SFMC	Micro Mate Sockets	Tiger Eye™ Contacts	.050" (1,27mm)
TFML/SFML, TFM/SFM	Micro Mate Standard & Locking Sockets & Headers	Tiger Eye™ Contacts Locking Clip, Alignment Pin, Polarized & Keyed	
CLP	Micro Socket	Alignment Pin	
FTSH	Shrouded Micro Header	Keying Shroud, Alignment Pin	
FW	Low Profile & Skyscraper Board Stackers	End Shroud, Guide Posts, Alignment Pin	
LS2	Terminal/Socket Combo	Polarized, Shrouded Terminals, Align & Latch™	.0787" (2,00mm)
ESQT, SQT, SQW	Elevated, Press Fit & Standard Sockets	Tiger Buy Contacts, Polarization, Alignment Pin, Locking Clip	
TMMH	Flex Shroud Headers	End Shrouds, Locking Clip, Alignment Pin, Guide Posts, Board Locks & Polarization	
SMM	High Reliability Socket	Tiger Eye™ Contacts, Polarization	
TMM	Standard & Low Profile Headers	Polarization, Alignment Pin	
MMS	Box Socket	Polarization, Locking Clips	
TW	Micro Terminal Board Stacker	Polarization, Alignment Pins & Guide Pins	
MMT	Horizontal Terminal Strip	Polarization, Alignment Pins, Locking Clips	
CLT	Low Profile Micro Socket	Tiger Claw contacts, Alignment Pin	
STMM	Shrouded Terminal Cable Strip	Polarization & Locking Clip	
LTMM, ZLTMM	Shrouded Standard & Elevated Terminal Connector Strips		.100" (1,27mm)
ESQ	Elevated Sockets	Tiger Buy Contacts, Locking Lead, Polarization	
LST	Socket/Terminal Combo	Tiger Buy Contacts, Locking Features	
IPT1/IPST	MiniMate® Header & Socket	Tiger Buy Contacts, Polarization	
TSW	Terminal Strips	Locking Clip, Locking Leads, Polarization	
OPP	One Piece Power Interface	Alignment Pin, Locking Clip, Threaded Inserts	
TSS, TST	Top Shrouded Connector & Cable Headers	Polarization, Alignment Pin, Locking Leads	
SSW, SSQ	Solder Tail & Square Tail Socket Strips	Tiger Buy Contacts, Locking Lead, Polarization	
BCS	Box Connector Socket Strip	Polarization	
DW	Dual Body Board Stacker	Locking Lead	
SSM	Surface Mount Socket Strip	Polarization, Locking Clip	.156" (3,96mm)
ESW	Elevated Socket Strip	Locking Lead, Polarization	.165" (4,19mm)
FHP/FWJ	Power Socket & Header Strip	Locking Clip, Alignment Pin	.200" (5,08mm)
IPBS/IPBT	PowerMate™ Headers & Sockets	Guide Posts/Holes, Shrouded Pins	.250" (6,35mm)
MPT/MPS	Mini PowerStrip Terminal & Socket	Alignment Posts, Locking Clips, Screw Downs	
MPTC/MPSC	Mini PowerStrip Power/Signal Combo		
PES/PET, PES/PESC	PowerStrip Socket/Terminal & Power/Signal Combo	Alignment Posts, Screw Downs	

Cable Systems

- PowerMate™ & MiniMate® Discrete Wire Assemblies
- Micro Mate Discrete Wire Assembly with Tiger Eye™ Contact System



**ALIGN
&
LATCH**



**TIGER
EYE
CONTACT**

Series	Description	Rugged Features	Pitch
SFSD/ISFD	Micro Mate Discrete Wire Socket Cable Assembly & Housing	Tiger Eye™ Contact System, Locking Features available	.050" (1,27mm)
TSFD/TSDF	Micro Mate Discrete Wire Header Cable Assembly & Housing		.100" (2,54mm)
MMSD, MMSS, IPD1	MiniMate® Cable Assembly	Guide Pins, Align & Latch™	.100" (2,54mm)
PMSD, PMSS, IPBD	PowerMate™ Cable Assembly		.165" (4,19mm)

Sealed Circular Systems

- AccliMate™ Sealed Circulars meet IP68 requirements for dust and waterproof sealing
- Cable Plugs and Receptacles
- High Density Tiger Eye™ Contacts on (1,27mm) .050" pitch
- Power Pins on (3,96mm) .156" pitch
- Micro Mate Systems with Tiger Eye™ contacts, size 10 shell
- RF, Ethernet and USB connectors also available



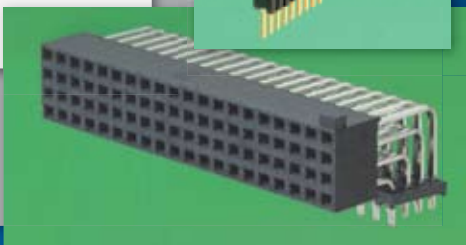
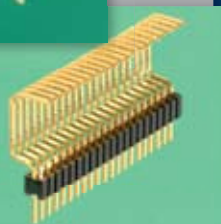
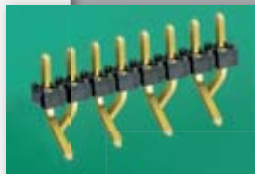
Series	Description	Rugged Features	Pitch
SCR1/SCP1	AccliMate™ Power Sealed Circular	Locking & Latching, Dust & Waterproof Sealing	.156" (3,96mm)
SCR2/SCP2	AccliMate™ High Density Sealed Circular	Locking & Latching, Dust & Waterproof Sealing, Tiger Eye™ Contact System	.050" (1,27mm)
SCR3/SCP3	AccliMate™ IP68 Micro Mate Sealed Circular	Locking, Latching, Dust & Waterproof Sealing, Tiger Eye™ Contact System	

Products must be certified as "ACD Series" in order to meet TS 16949 standards for automotive applications. Most Samtec products are suitable for prototype and test equipment applications. Please visit www.samtec.com/TS for complete details.

Application Specific

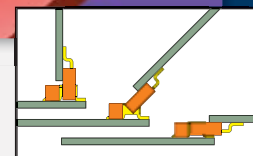
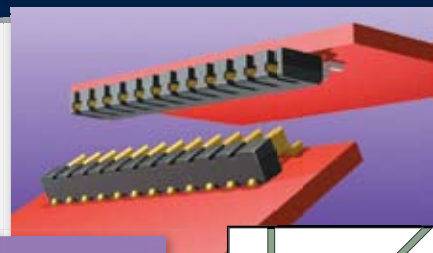
Pin Modifications

- Hot pluggable
- Special crimps
- Modified footprints
- Unusual angles
- Special jumpers
- Varied pin height
- Elevated right angles
- Opposing bends
- Multiple polarization/ selectively loaded
- Adaptors



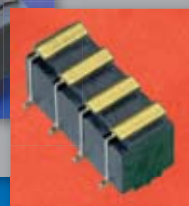
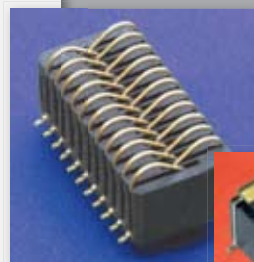
Custom Connectors

- "Hinged" Connectors
- Special pins
- Custom molding



One Piece and Micro Card

- Interstitial designs
- Battery contacts
- Special features
- Elevated designs
- Special edge mount
- Card rail modifications



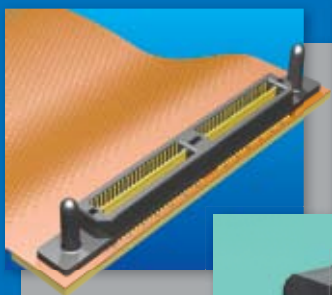
Rugged & Power

- Modified standards
- "Power Blades"
- AccliMate™ IP68 Sealed Circulars



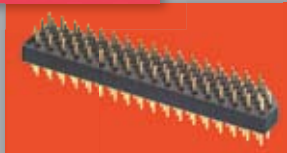
Cable

- High Data Rate cable
- Custom Flex cable
- Custom IDC cable
- Custom connectors



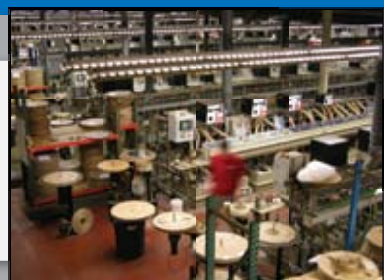
Body Modifications

- Custom material
- Molded Pick & Place pads
- Shrouds
- Modified alignment pin size and position
- Screen printing
- Multiple stacked bodies
- Hardware enhancements for ease of placement and mechanical stability



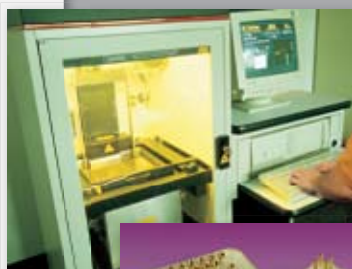
Special Plating

- Custom metals and alloys
- Special thicknesses
- Selective plating



Testing & Development

- SMT lab for processing studies
- Stereolithography for mechanical studies
- Quick-turn prototype capabilities
- In-house mold design and fabrication
- Quick change tooling for easy modification



Rugged Features

Tiger Eye™ Contacts

- High reliability and high cycle contacts
- Multi-finger BeCu contact
- Tested to 10,000 cycles with PdNi plating
- Highest reliability contact system



IP68 Sealed Connectors

- IP68 rated for dust and waterproof sealing
- Dust Protection Cap
- Polarized
- Sizes 10 & 17 with Locking Collar
- Tiger Eye™ Contacts



Tiger Buy Contacts

- High retention contacts
- Tuning fork Phosphor Bronze contact
- Highest retention contact system due to robust yet cost effective design



Alignment

- Polarized & Keyed options
- Align & Latch™ features
- Guide Pins, Posts & Holes
- Alignment Pins



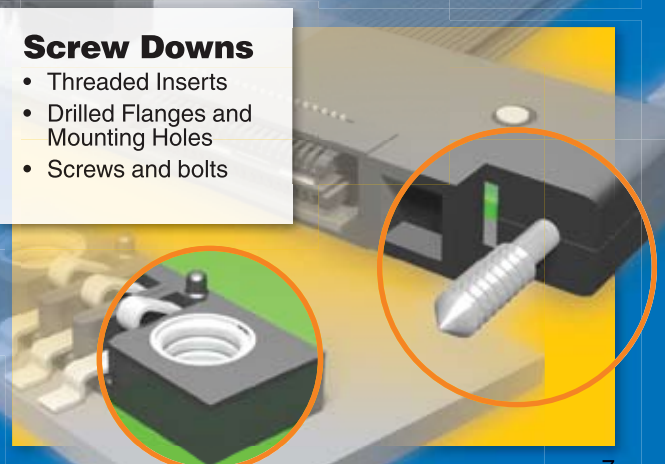
Locking & Latching

- Friction Locks increase unmating forces by up to 4 times
- Locking Pins & Leads
- Align & Latch™ features
- Audible click options available
- Retention pins increase unmating force



Screw Downs

- Threaded Inserts
- Drilled Flanges and Mounting Holes
- Screws and bolts



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