

Battery Interconnects

Product Facts

- Multi-directional mating all angles between 0° and 90°
- Standard 5-position system
- **■** Total interface solution
- Current capacity 7 Amps/ single contact at 30°C T-Rise
- Choice of right angle or vertical mount headers with left, right or keyless polarization
- Headers available for 7.2, 10.8, and 12.0 volt rechargeable batteries
- Receptacle connectors with solder tails or weld tabs
- Consumer friendly mating/unmating of battery
- Reduces design cycle time
- Reduces overall costs
- Produced under a Quality Management System certified to ISO 9001
- **■** Two-Piece Connector
- Blade Contacts for high durability
- Used Industry-wide for rechargeable battery I/O in laptop computers
- Offered in a variety of key arrangement — for different voltage batteries
- 2.5mm, 3.0mm and 5.0mm contact pitch
- Up to 7 Amps per contact
- Up to 2500 cycle durability
- Two pc tails per blade for better current distribution



Since the introduction of the Duracell, standard-sized nickel-metal hydride rechargeable battery to the computer and communications original equipment manufacturers (OEMs), Tyco Electronics has played a major role in the development and manufacture of a reliable, high performance multi-directional interconnect system.

As the Duracell line of rechargeable batteries expanded to newer and more diversified uses, so have Tyco Electronics Battery Interconnect Systems. Today, systems are available for:

- DR17 (7.2 Volts)
- DR30 (7.2 Volts)
- DR15 (10.8 Volts)
- DR35 (10.8 Volts)
- DR36 (12.0 Volts)

These 5-position headers and the Tyco Electronics

5-position receptacle connectors provide reliable, easy mate/unmate interconnects.

Single contacts are rated at 7 amperes with a 30°C T-Rise, and have an operating temperature rating of -30°C to +70°C. Headers feature sturdy brass contacts with duplex plated tin-lead solder tails and nickel on the mating area to ensure the life of the system and to provide high cycle mating/unmating.

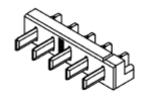
Housings are made of high temperature, U.L. 94V-0 rated thermoplastic and are available with left or right hand keying, or with keyless mounting configurations. Keyless headers are designed to minimize board space requirements, and require the battery manufacturer to provide voltage key in the battery rack compartment. Keyless headers accept all 3 voltage battery packs.

Tyco Electronics "Drop-In" receptacle connectors fit securely within the battery pack compartment. They are offered in a choice of weld tab or solder tail versions for PC board mounting. Housings are made from high impact U.L. 94V-0 rated thermoplastic with high temperature housings available for solder tail versions.

The Tyco Electronics Battery Interconnection systems provide variable direction mating and voltage/form factor polarization for safe, friendly operation.



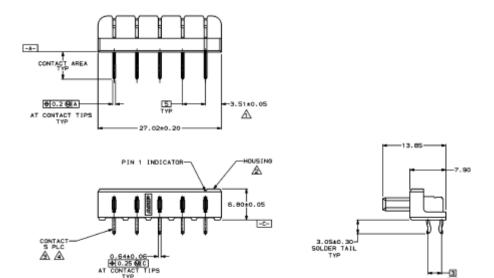
Right Angle Headers, 5.0 Centers, Left-Hand Key



Material and Finish

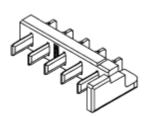
Housing — Polyphthalamide 94 V-0 rated, black

Contacts — Brass, plated 0.00254 min. tin-lead on the solder tail over 0.00190 min. nickel overall



With Straight Solder Tails

Right Angle Headers, 5.0 Centers, Right Hand Key



Material and Finish

Housing — Polyphthalamide 94 V-0 rated, black

Contacts — Brass, plated 0.00254 min. tin-lead on the solder tail over 0.00190 min. nickel overall

Technical Documents

Product Specification

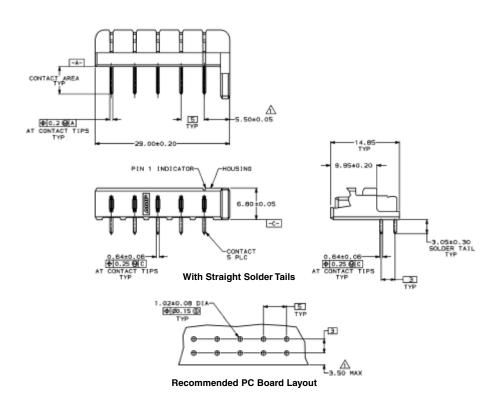
108-1501

Application Specification

114-24005

Notes:

- Connector side of pc board layout shown.
- 2. PC board layout and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of equipment,. Consult Tyco Electronics customer drawings for detailed pc board layout and connector dimension requirements.
- Voltage keying reg. IEC connector study group (IEC 488).



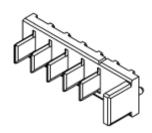
	Voltage	Part Nu	umbers	Dia. With	
Voltage	Key	Straight Solder Tails	Retentive Solder Tails	A A	Mounting Holes
7.2	Right Hand	787142-1●	_	5.5	No
10.8	Left Hand	787259-1●	_	10.0	No
40.0	Left Hand	787428-1●	_	7.5	· · ·
12.0	Right Hand	787366-1●	_	7.5	Yes*
NA	Keyless	787441-1●	787443-1●	3.51	No

*See Tyco Electronics Customer Drawings for specific hole layout.

Note: Part Numbers are RoHS compliant except: Indicates 5 of 6 compliant (lead in solderable interface only).



Vertical Headers, 5.0 Centers



Material and Finish

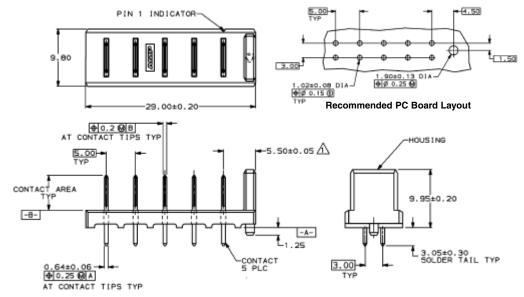
Housing — Polyphthalamide 94 V-0 rated, black

Contacts — Brass, plated 0.00254 min. tin-lead on the solder tail over 0.00190 min. nickel overall

Technical Documents

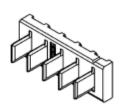
Product Specification 108-1501

Application Specification 114-24005



Vertical Headers, 5.0 Centers, Keyless*

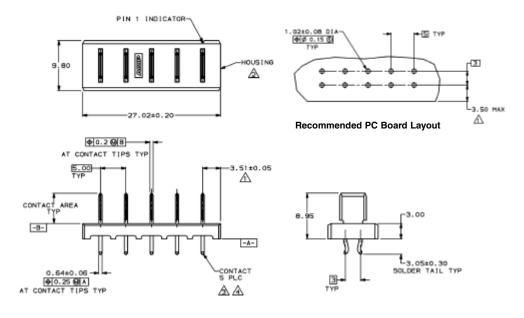
*Keyless headers are designed for any voltage battery pack, and to minimize pc board space requirements. The use of a keyless header requires the equipment manufacturer to provide voltage key in the battery pack compartment.



Material and Finish

Housing — Polyphthalamide 94 V-0 rated, black

Contacts — Brass, plated 0.00254 Min. tin-lead on the solder tail over 0.0190 min. nickel overall



	Part Numbers		Dia.	With	
Voltage	Straight Solder Tails	Retentive Solder Tails	A	Mounting Holes	
7.2	787334-1●	_	5.5	Yes	
10.8	787419-1●	787421-1●	10.0	Yes	
12.0	787430-1●	_	7.5	Yes	
Keyless	787444-1●	787446-1●	3.51	No	

Note: Part Numbers are RoHS compliant except: ●Indicates "5 of 6 compliant" (lead in solderable interface only).



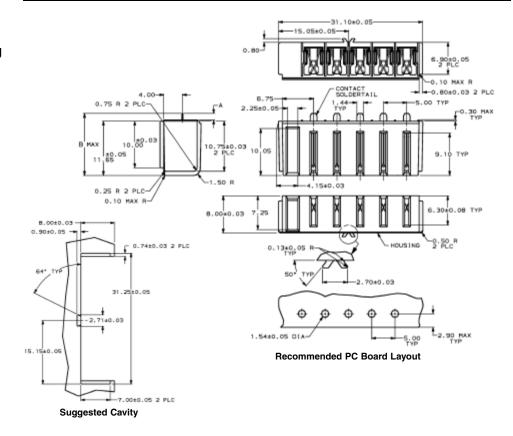
Receptacle Connectors, 7.2 Voltage, with Solder Tail for PC Board Mounting

Part No. 787590-1●

Material and Finish

Housing — Polyphthalamide 94 V-0 rated, black

Contacts — Copper alloy, duplex plated 0.00254 min. tin-lead on solder tails over 0.00190 min. nickel overall



Receptacle Connector, 7.2 Voltage with Weld Tabs

Part No. 787613-1

Material and Finish

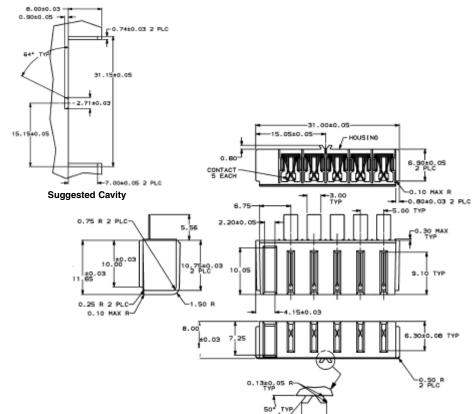
Housing — Polycarbonate 94 V-0 rated, black

Contacts — Copper alloy, plated 0.00190 min. nickel

Technical Documents Product Specification

108-1501

Application Specification 114-24005



Note: Part Numbers are RoHS compliant except: ●Indicates "5 of 6 compliant" (lead in solderable interface only).

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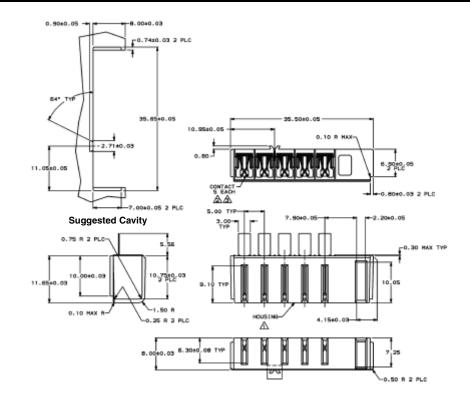
Receptacle Connectors, 10.8 Voltage, with Weld Tabs

Part No. 787614-1

Material and Finish

Housing — Polycarbonate 94 V-0 rated, black

Contacts — Copper alloy, plated 0.00190 min. nickel



Receptacle Connector, 12.0 Voltage with Weld Tabs

Part No. 787615-1

Material and Finish

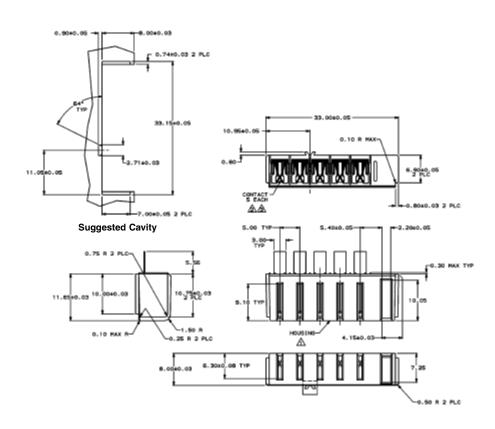
Housing — Polycarbonate 94 V-0 rated, black

Contacts — Copper alloy, plated 0.00190 min. nickel

Technical Documents Product Specification

108-1501

Application Specification 114-24005



Note: All part numbers are RoHS compliant.

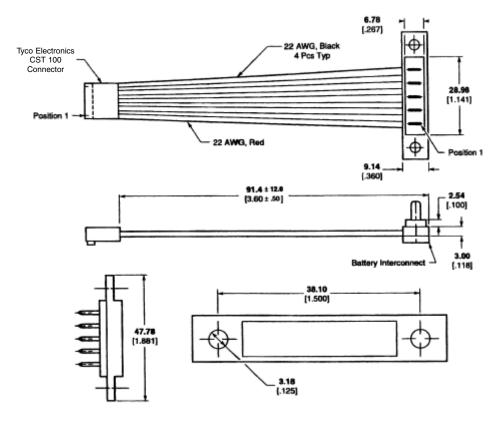




Tyco Electronics Battery Interconnection System, Cable-to-Board Connector Assembly

Product Facts

- Offers OEM manufacturers complete design flexibility
- Tyco Electronics cable assembly design engineers assist on your specific assembly requirements
- Standard or customized mounting options
- Double or single ended assemblies
- Wide choice of other end
 Tyco Electronics connectors
 to complete your assembly
- Manufacturing labor and overhead cost savings
- Inventory cost savings with Tyco Electronics Just-In-Time Delivery
- Eliminates Down-Time, all assemblies individually inspected prior to shipping



Tyco Electronics Battery Interconnect System, Cable-to-Board Connector Assembly is designed to maximize your manufacturing capabilities, and offers greater flexibility in your design cycle.

This assembly is presently available with a keyless battery connector on the mating end and a Tyco Electronics CST-100 connector on the internal connection end.

Tyco Electronics will consult with you, in the design or post-design stage, to

introduce our complete cable-to-board connector assembly design and manufacturing capabilities to meet your specific battery interconnect system connector assembly requirements.

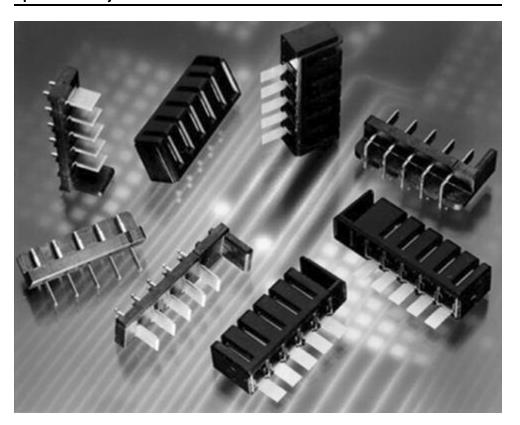
Call the Tyco Electronics Product Information Center, for immediate information on this new, exciting service for the OEM systems designer.



Special Battery Connectors

Product Facts

- 3-, 6-, 7- and 10-position at 2.0mm pitch; 4, 5, 6 and 7 positions at 2.5mm centerline; 8- and 10-position at 3.0mm centerline
- Housings have an excellent heat resistant property and are durable with the through-hole reflow techniques
- Contacts are made of gold plated, high conductivity, copper alloy
- 2.5mm centerline plugs are available with DIP types and SMT offset types for thinner equipment. Receptacles are available only with SMT types



As the sizes of mobile equipment, such as note-book PCs, portable telephones, etc. are becoming smaller and thinner, the spaces for battery packs also require the best space efficiency.

Tyco Electronics Battery Connectors are available to meet the requirements of extremely high space efficiency of small size mobile equipment with the line contact concept and are available at 2.5mm and 3.0mm centerlines.

These connectors offer significant space savings with enough contact area to secure the connection.

They connect the battery spaces apt to be affected by cumulative total of tolerances and the equipment of high reliability.

Performance Data
Voltage rating — 30V AC
Current rating — less than 6A
Mating/Unmating cycles —
6000 cycles (plug)
2000 cycles (rec)
Operating Temperature —

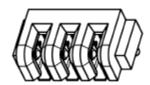
Part Number	Connector Type	Number Position	Pitch
1318430-2	rec	5	2.5mm
1318792-1	plug	5	2.5mm
1318977-3	plug	6	2.5mm
1123688-3	rec	6	2.5mm
1318573-4	plug	7	2.5mm
1318574-4	rec	7	2.5mm
316160-1	plug	8	3.0mm
316163-1	rec	8	3.0mm
316433-1	plug	10	3.0mm
316435-1	rec	10	3.0mm
1123738-7	plug	10	2.5mm
1123822-7	plug	10	2.5mm
1123684-7	plug	10	2.5mm

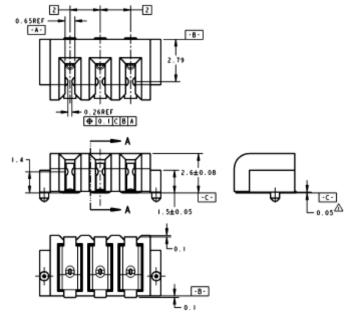
Note: All part numbers are RoHS compliant.

-20°C to +80°C



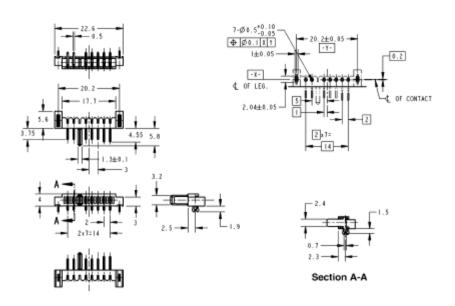
2.0mm Pitch, Receptacle Assembly, 3 Position Part Number 1612901-1





Part Number	Description	Position	Mount Angle	Mount
1612898-1	Plug Assembly	3	Vertical	Surface Mount
1612901-1	Receptacle Assembly	3	Right Angle	Surface Mount
1766706-1	Plug Assembly	6	Right Angle	Through Hole
1827654-1	Plug Assembly	7	Right Angle	Surface Mount
1827684-1	Receptacle Assembly	7	Vertical	Surface Mount
1-1612962-3	Plug Assembly	10	Right Angle	Through Hole
1612963-3	Receptacle Assembly	10	Vertical	Through Hole
1612964-3	Receptacle Assembly	10	Right Angle	Surface Mount
1717840-1	Plug Assembly	10	Right Angle	Through Hole
1827622-1	Receptacle Assembly	10	Right Angle	Surface Mount

2.0mm Pitch, Plug Assembly, 7 Position Part Number 1827654-1

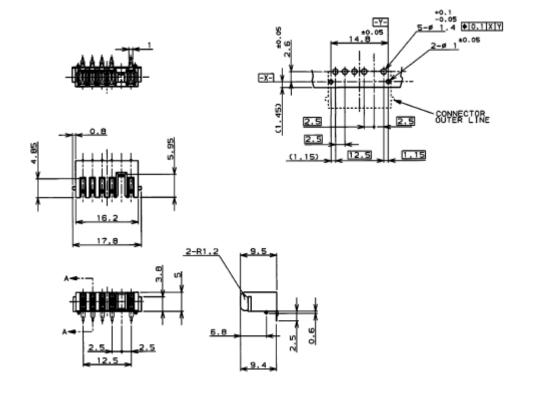


Note: All part numbers are RoHS compliant.

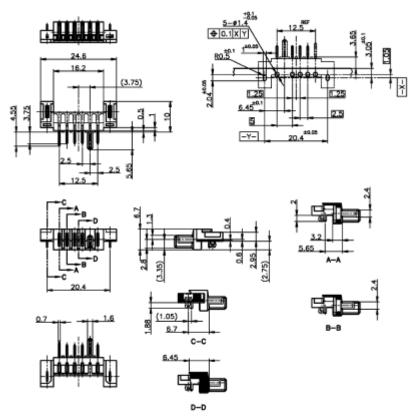
USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: +44 (0) 800-267-666



2.5mm Pitch, Receptacle Assembly, 5 Position Part Number 1318430-2



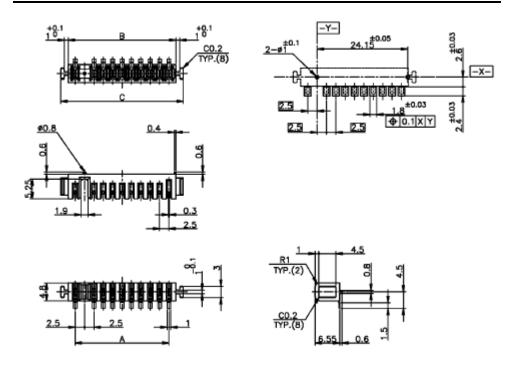
2.5mm Pitch, Plug Assembly, 5 Position Part Number 1318792-1



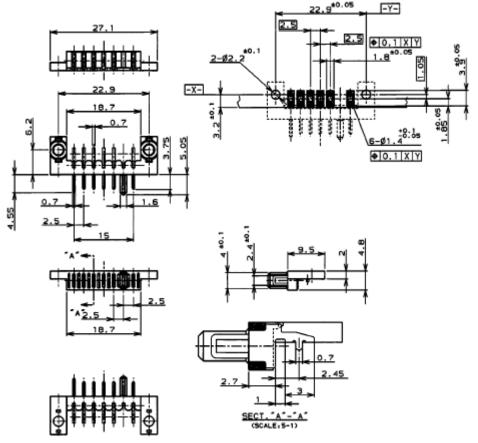
Note: All part numbers are RoHS compliant.



2.5mm Pitch, Receptacle Assembly, 6 Position Part Numbers 1123688-3, 1123688-7



2.5mm Pitch, Plug Assembly, 6 Position Part Number 1318977-3



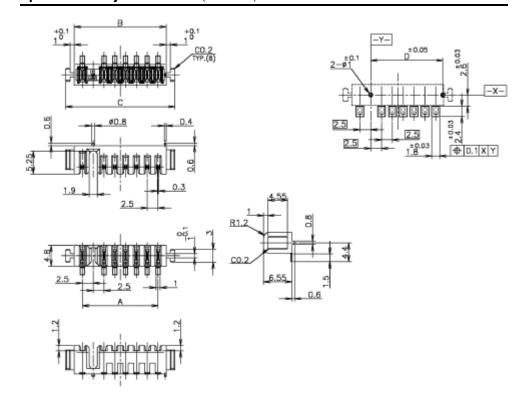
Note: All part numbers are RoHS compliant.

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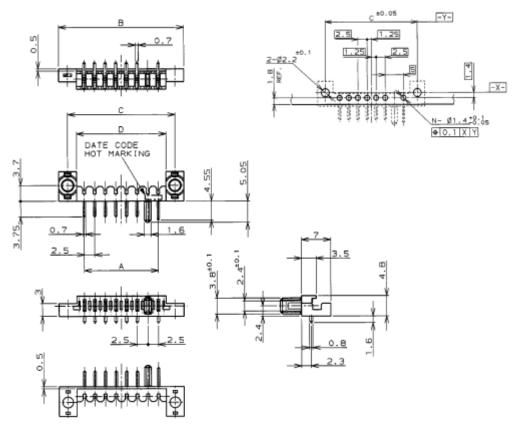
USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: +44 (0) 800-267-666



2.5mm Pitch Receptacle Assembly 7 Position Part Number 1318574-4



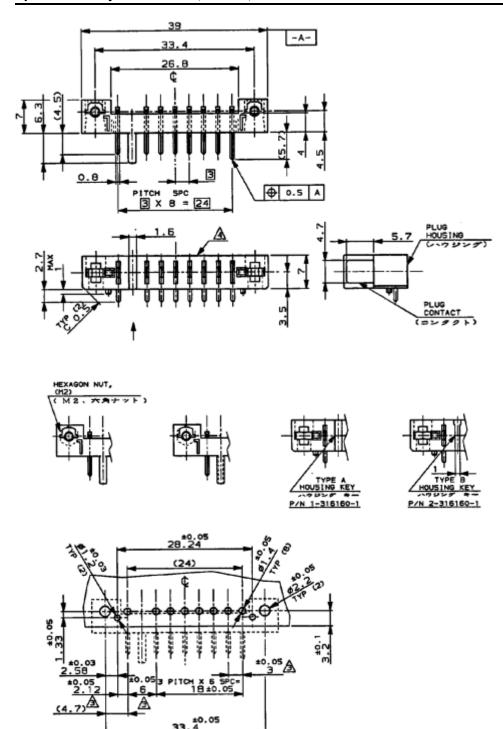
2.5mm Pitch Plug Assembly 7 Position Part Number 1318573-4



Note: All part numbers are RoHS compliant.



3.0mm Pitch Plug Assembly 8 Position Part Number 316160-1

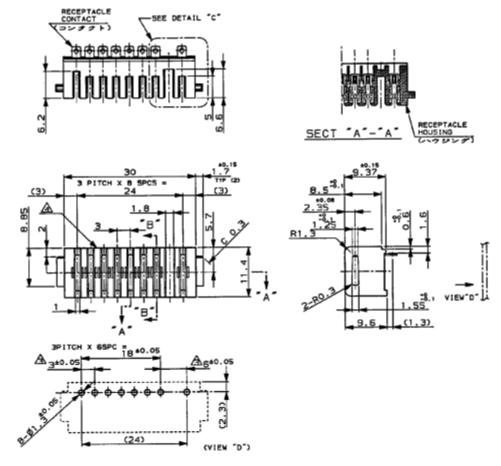


Hexagon Nuts	Housing Key		
Nuts	Α	В	
With	1-316160-1	2-316160-1	
Without	3-316160-1	4-316160-1	

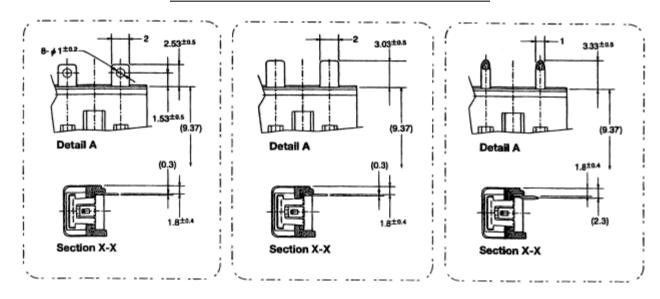
Note: All part numbers are RoHS compliant.



3.0mm Pitch Receptacle Assembly 8 Position



Mount	Part No	umbers
Туре	Key A	Key B
Wire	1-316163-1	2-316163-1
SMT	3-316163-1	4-316163-1
DIP	5-316163-1	6-316163-1



Note: All part numbers are RoHS compliant.



2.5mm Pitch Receptacle Assembly

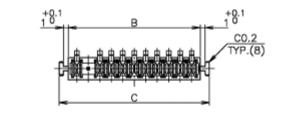
Part Number 1123688-3●, 6 Position

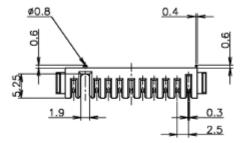
Part Number 1123688-7●, 10 Position

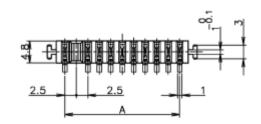
Material and Finish

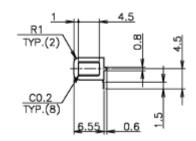
Housing — Thermoplastic Molding Compound, UL94V-0 rated, black Contact — Copper Alloy, nickel-underplated all over, palladium nickel plated

and gold-flash plated at contact area, tin-lead plated on soldering area.









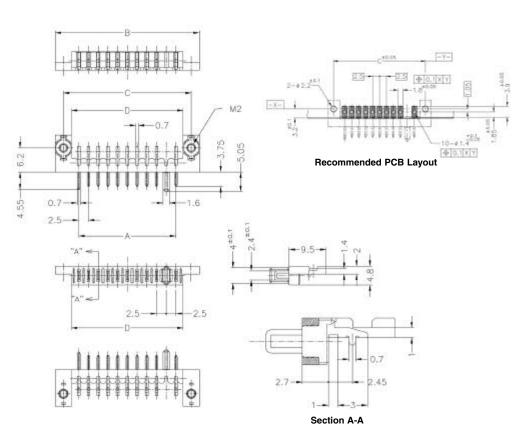
2.5mm Pitch, Plug Assembly 10 Position, Off Set Type

Part Number 1123738-7●

Material and Finish

Housing — Thermoplastic Molding Compound, UL94V-0 rated, black

Contact — Copper Alloy, nickel-underplated all over, palladium nickel plated and gold-flash plated at contact area, tin-lead plated on soldering area.



Note: Part Numbers are RoHS compliant except: Indicates "5 of 6 compliant" (lead in solderable interface only).



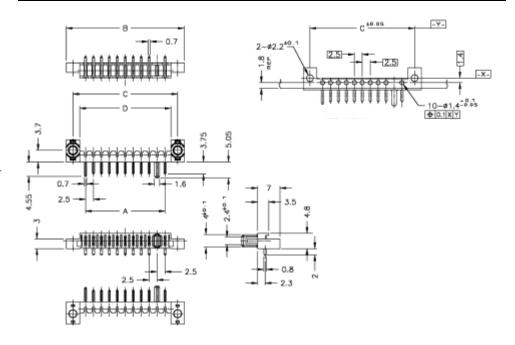
2.5mm Pitch, Plug Assembly 10 Position, Without Nut Plate

Part Number 1123822-7●

Material and Finish

Housing — Thermoplastic Molding Compound, UL94V-0 rated, black

Contact — Copper Alloy, nickel-underplated all over, palladium nickel plated and gold-flash plated at contact area, tin-lead plated on soldering area.



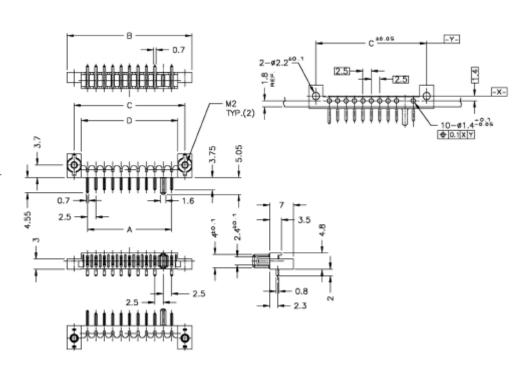
2.5mm Pitch, Plug Assembly 10 Position

Part Number 1123684-7●

Material and Finish

Housing — Thermoplastic Molding Compound, UL94V-0 rated, black

Contact — Copper Alloy, nickel-underplated all over, palladium nickel plated and gold-flash plated at contact area, tin-lead plated on soldering area.

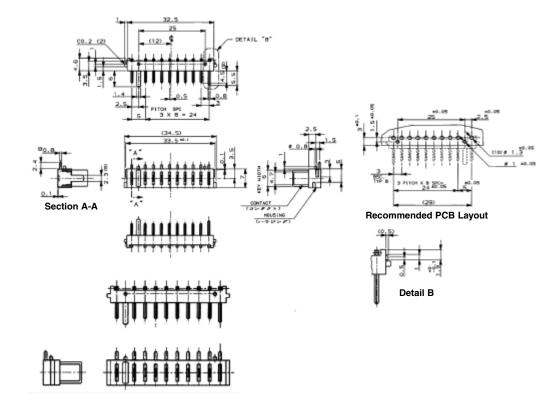


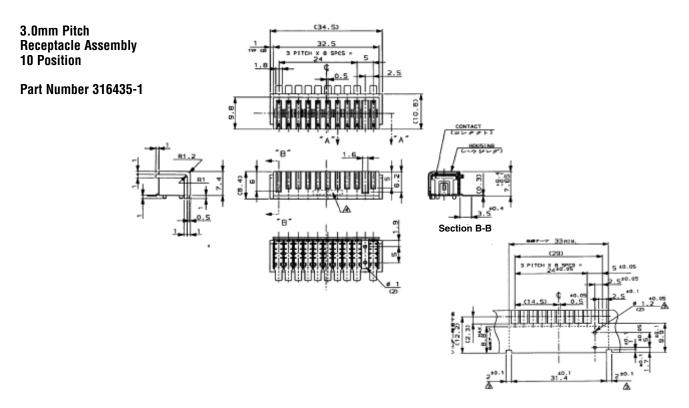
Note: Part Numbers are RoHS compliant except: Indicates "5 of 6 compliant" (lead in solderable interface only).



3.0mm Pitch Plug Assembly 10 Position

Part Number 316433-1





Note: All part numbers are RoHS compliant.

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Coin-Cell Battery Holders

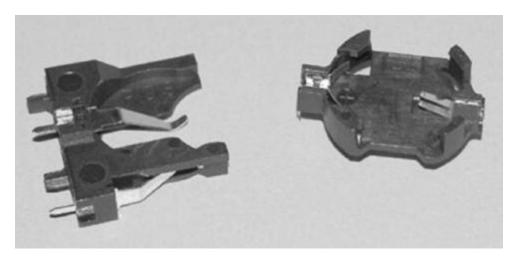
Product Facts

- Accepts BR2032 and CR2032 Lithium Ion Battery Cells
 - Vertical orientation available with solder tails
 - Low profile horizontal orientation with solder tail or SMT terminations
- Designed for reliable (twin-beam) connection for the back-up battery on motherboards for desktop and notebook PC's.
- Designed for plated through hole (PTH) soldering and surface mount soldering
- Self-ejecting design allows battery to be removed without tools
- Accepts ML 616 and ML 614 batteries

Typical Application

- **■** Internet routers
- Handhelds
- **■** Vending machines

Technical Document Product Specification108-1691



Tyco Electronics Top Load Battery is a high reliable receptacle for coin-cell (BR 2032 and CR2032) batteries. These batteries are used as battery back-ups in computers to store the RTC (real time clock) and other CMOS RAM data when the computer is not turned on. It can also be used in a variety of other electronic equipment needing a compact low wattage (typically less than 2Watts) battery source.

The polarized pcb layout and tin plated twin-beam contact design of the horizontal battery holders ensure easy printed circuit board (pcb) assembly and long term connection reliability, along with easy battery removal. The vertical mount battery holders reduce both the required pcb space and the overall height required for an optimum high-density pcb design.

Surface Mount and re-flow compatible options are also ready to meet the newer pcb assembly requirements. Top Load battery connectors can be supplied in tube, tray or reel packaging methods or tray.

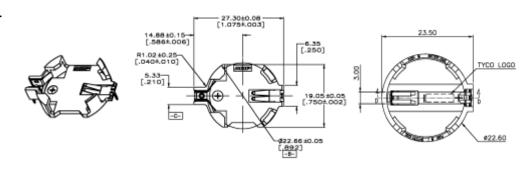


Coin-Cell Battery Holders (Continued)

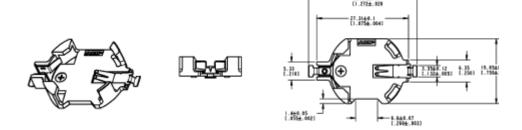
Horizontal Mount Through-Hole Solder Tails

Part Number 120591-1 Tray Packaging (shown) Part Number 120591-2 Tube Packaging Part Number 1734178-1 Tray Packaging (shown)

Housing flexes for easy removal.

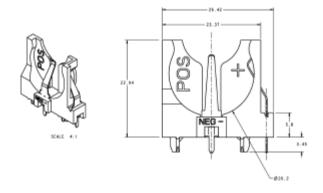


Surface Mountable Part Number 796136-1



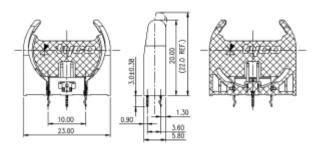
Vertical Mount Standard Product Part Number 1339488-1

Color — black



Low Profile Part Number 1775118-2

Color — Blue



Note: All part numbers are RoHS compliant.



Multi-Directional Interconnection (MDI) System

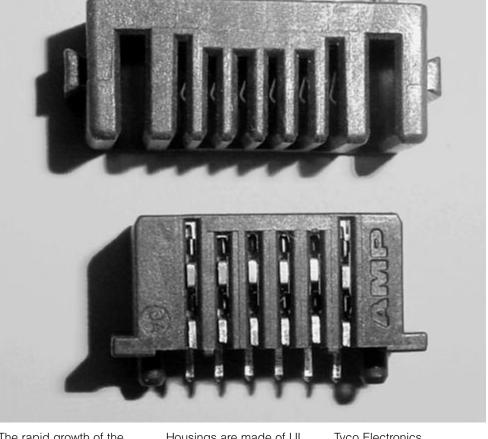
Product Facts

- 6-position, 2mm interface shrouded on both sides
- Offers blind mating from 0 to 90 mating angle
- Solder tail and SMT pcb termination
- 6-position receptacle and header interconnection on 2.0mm
- Ideal for high density application
- Connectors can be mated at any angle between 0° and on°
- Durable 2500 cycles, contacts with 0.00076 min. AMP-DURAGOLD plating over 0.00127 min. nickel underplating
- High reliability for docking applications — portable hand held devices, measurement equipment, documentation control and interconnections for rechargeable batteries for lap-top and notebook computers
- 0.00380 min. tin on solder tails
- Versatile solder operation for board-to-board applications
- Produced under a Quality Management System certified to ISO 9001
 A copy of the certificate is available upon request.
- Recognized under the Component Program of Underwriters
 Laboratories, Inc.
 File No. E28476
- Certified Pending by Canadian Standards Association, File No. LR 16455



Technical Documents Product Specifications

108-1503 108-1503-1



The rapid growth of the portable equipment market has fostered a need for a high density and versatile interconnection system. Tyco Electronics Multi-Directional Interconnection System answers this need. The system consists of 6-position receptacles and headers featuring contacts on 2.0mm centerlines. This multi-directional interconnection system is designed to permit mating/unmating at any angle between 0° and 90°. This durable system features AMP-DURAGOLD plated contacts for positive mating/unmating up to 2500 cycles.

Housings are made of UL 94V-0 rated, high temperature thermoplastic, compatible with IR and reflow solder techniques.

The multi-directional aspect and durability of this system make it ideal for docking connector applications in a variety of portable hand held devices, measurement equipment, documentation control, and interconnections for rechargeable batteries used in laptop and notebook type computers.

Tyco Electronics
Multi-Directional
Interconnection System is
your total interface problem
solver. It reduces your
design cycle time, time-tomarket, and provides an
overall reduced cost of
manufacturing.



Multi-Directional Interconnection (MDI) System (Continued)

Multi-Directional Headers

6-Position Header, with Below the Board Retention Tails

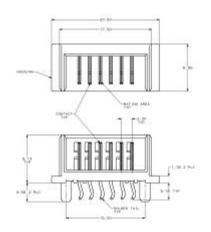
Part Number 5787252-1

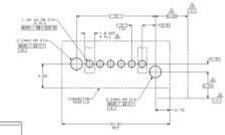
Material and Finish

Housing — LCP, 94V-0 rated, black Contacts — Brass, plated 0.00076 min. AMP-DURAGOLD on mating area, 0.00380 min. tin on solder tail, all over 0.00127 min. nickel

Notes:

- 1. Datum and dimensions established by customer.
- Recommended minimum trace width for end positions when carrying 3 amps 0.00180 wide x 0.00055 thick, both sides.





PC Board Mounting Dimensions

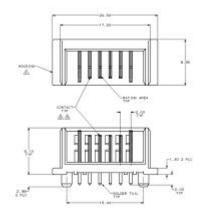
6 Position Header Assembly with Straight Solder Tails Part Number 5787531-1

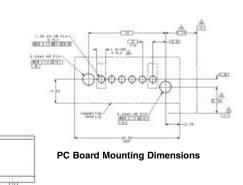
Material and Finish

Housing — LCP, 94V-0 rated, black Contacts — Brass, plated 0.00076 min. AMP-DURAGOLD on mating area, 0.00380 min. tin on solder tail, all over 0.00127 min. nickel

Notes:

- 1. Datum and dimensions established by customer.
- 2. Recommended minimum trace width for end positions when carrying 3 amps 0.00180 wide x 0.00055 thick, both sides.





Note: All part numbers are RoHS compliant.

www.tycoelectronics.com



Multi-Directional Interconnection (MDI) System (Continued)

Multi-Directional Receptacles

6-Position Receptacle Assembly with Straight Solder Tails

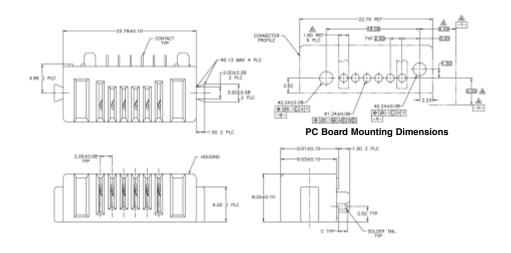
Part Number 5787253-1

Material and Finish

Housing — LCP, 94V-0 rated, black **Contacts** — Phosphor bronze, plated 0.00076 min. AMP-DURAGOLD on mating area, 0.00380 min. tin on solder tail, all over 0.00127 min. nickel

Notes:

- 1. Datum and dimensions established by customer.
- Recommended minimum trace width for end positions when carrying 3 amps 0.00180 wide x 0.00055 thick, both sides.



6-Position Receptacle Assembly with Surface Mount Tails

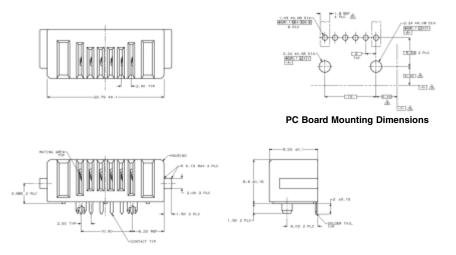
Part Number 5787526-1

Material and Finish

Housing — LCP, 94V-0 rated, black **Contacts** — Phosphor bronze, plated
0.00076 min. AMP-DURAGOLD on mating area, 0.00380 min. tin on solder tail, all over 0.00127 min. nickel

Notes:

- 1. Datum and dimensions established by customer.
- Recommended minimum trace width for end positions when carrying 3 amps — 0.00180 wide x 0.00055 thick, both sides.
- 3. Recommended PC Board thickness of 1.57.



Note: All part numbers are RoHS compliant.

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DC Power Jacks

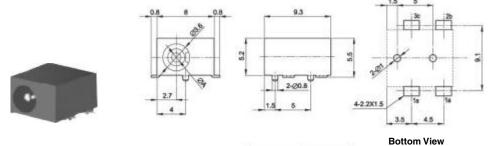
Product Facts

- **■** Low Profile Design
- Accepts industry standard DC power plugs
- Available with:
 - Solder tabs
 - Through-hole solder tails
 - SMT leads
- Available to accept these plug sizes:
 - 0.65mm
 - 1.0mm
 - 1.3mm
 - 1.47mm
 - 1.87mm
 - 2.0mm
 - 2.35mm
 - 2.5mm
- Ideal for portable electric devices

Surface Mount Power Jacks Pin Diameters — 0.65mm and 1.3mm

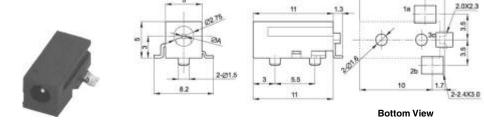
Part Number 1775638-1





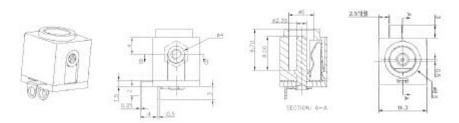
CENTER PIN DIAMETERØA	1.3 DIA
SCHEMATIC	16 22 15 30

Part Number 1775639-1



CENTER PIN DIAMETER®A	0.65 D(A
SCHEMATIC	1a 130 100 2b

Vertical DC Jack Part Number 1470390-1



Note: All part numbers are RoHS compliant.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803

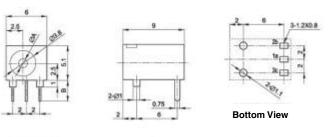


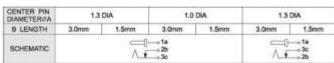
DC Power Jacks (Continued)

Right Angle DC Jacks Miniature Jacks

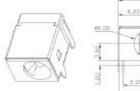
For specific part numbers, contact Tyco Electronics

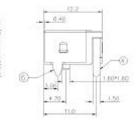
Center Dia.	Tail Length	Part Number
1.30	3.00	1775529-1
1.30	1.50	1775529-2
1.00	3.00	1-1775529-1
1.00	1.50	1-1775529-1

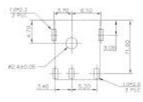




Shielded Jack





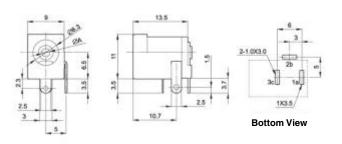


PCB Layout (Tolerance ± 0.05)

Dia. A	N.W. (q)	Part Number
2.0	1.8	1734894-1
2.5	2.0	173/80/-2

Standard Jacks

Center Diameter	Part Number
2.00	1775069-1
2.35	1775069-2
2.50	1775069-3



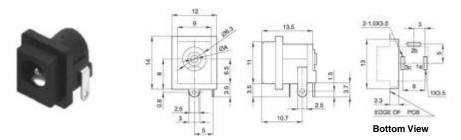
CENTER PIN DIAMETER®A	1.35 DIA	1.47 DIA	1.7 DIA	1.87 DIA	2.0 DIA	2.2 DIA	2.35 DIA	2.5 D(A
SCHEMATIC				<u></u>				

0

Standard Jack — Recessed Flange

For specific part numbers, contact Tyco Electronics

Center Diameter	Part Number		
1.47	1775637-1		
1.87	1775637-2		
2.00	1775637-3		
2.35	1775637-4		
2.45	1775637-5		



CENTER PIN DIAMETER®A	1.47 DIA	1.87 DIA	2.0 DIA	2.35 DIA	2.45 DIA
SCHEMATIC	□□□→ 10 ∧ 1 → 2b				

Note: All part numbers are RoHS compliant.