## Product Facts
- Plug and Play capability
- Hot pluggable, permits attaching or detaching peripherals without power down or reboot
- Single 4-position connector, polarized for proper orientation
- Complete family of board-mount receptacles, including right-angle, thru-hole, thru-hole type B, side-by-side, and stacked
- Cable mount overmold plug kits for both standard and type B applications
- Consolidates serial parallel, keyboard, mouse and game ports
- Compatible with asynchronous and isochronous data transfer methods

## Connector System for Universal Serial Bus (USB)

The Tyco Electronics Connector System will accommodate the two differentially driven data wires that provide bi-directional, simultaneous signals for full speed 12Mbps or for low speed 1.5Mbps used in Universal Series Bus (USB) Systems. The Tyco Electronics USB System is a complete interconnection technology for I/O devices, including: keyboards, mice, game port, serial port devices, digital audio, printers, scanners, modems, joy sticks, and other telecommunication devices. Designed for outside-of-box, user friendly applications, the Tyco Electronics system consists of a single 4-position boardmount receptacle and mating cable mount overmolded plug. Boardmount receptacles are available in standard, Type B, stacked and side-by-side configurations, adding to the system’s versatility to meet all USB applications.

## Table of Contents
- Standard USB
  - Series A Receptacle Assemblies
  - Series B Receptacle Assemblies
  - Cable Assemblies
- Mini USB
  - Connectors
  - Plugs
  - Cable Assembly
- RJ45 Over USB
- MAG45 Modular Jacks with Integrated Magnetics
- USB/IEEE Combo

## Part Matrix

<table>
<thead>
<tr>
<th>Product</th>
<th>Series</th>
<th>Part Number</th>
<th>RoHS Compliant</th>
<th>Orientation</th>
<th>SMT/Thru-Hole</th>
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<tr>
<td>Header</td>
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<td>787616-1</td>
<td>202303-1</td>
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<td>292336-1</td>
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<td>A</td>
<td>353929-1</td>
<td>535392-1</td>
<td>Panel Mount, RA</td>
<td>SMT</td>
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<td>1734038-1</td>
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<td>440448-1</td>
<td>1-1734181-2</td>
<td>Triple Stack, RA</td>
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<td>1-1734383-2</td>
<td>Quad Stack, RA</td>
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<td>1734366-1</td>
<td>Vertical</td>
<td>Thru-Hole</td>
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<td>Plug</td>
<td>A</td>
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<td>1734080-1</td>
<td>Edge Mount</td>
<td>SMT</td>
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<td>1734346-1</td>
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<td>SMT</td>
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<tr>
<td>Plug Housing</td>
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<td>796006-4</td>
<td>5796006-4</td>
<td>Cable Appl.</td>
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</tbody>
</table>
Right-Angle, Thru-Hole

Part Number
202303-1
Loose Piece

Performance Data

USB Connector System
Voltage Rating — 30VAC (rms)
Current Rating — Signal application only, 1 amp per contact
Temperature Rating — –55 to 85˚C (unless limited by cable or overmold)
Termination Resistance — 30mΩ, max.
Insulation Resistance — 1,000 MΩ, min.
Dielectric Withstanding Voltage — 750VAC
Capacitance — 2pf max.
Durability — 1,500 cycles
Mating Force — 35N per contact, max.
Unmating Force — 10N per contact, max.

Universal Series Bus
Speed — 12 Mb/s
Max. No. of Peripherals — 63
Max. Distance — 5m max.
Data Transfer — Asynchronous

Series A Receptacle Assemblies

Solder Tail Length — 2.84 [.112]
Recommended PCB Thickness — 1.57 [.062]

Product Specification
108-1586

Right-Angle, Thru-Hole, Flag

Part Number
292336-1
Loose Piece

Solder Tail Length — 2.29 [.090]
Recommended PCB Thickness — 1.57 [.062]

Product Specification
108-1586
Panel Mount Right Angle
SMT Type

Part Number
5353929-1
Emboss Tape Mounted, ea. 350
Tape Width — 44.00 [1.732]

Part Number
353583-1
Tray Pack, ea. 55

Product Specification
108-5563

Connector System for Universal Serial Bus (USB)

Series A Receptacle Assemblies (Continued)

Tape (Part Number 5353929-1 only)

Section X-X

Recommended PCB Layout
(Component Side)
Panel Mount Right Angle
SMT Type, Reverse Mating

Part Number
1734038
Emboss Tape Mounted, ea. 350
Tape Width — 44.00 [1.732]

Part Number
353576-1
Tray Pack, ea. 55

Product Specification
108-5563
Connector System for Universal Serial Bus (USB)

Series A Receptacle Assemblies (Continued)

Right Angle Stacked, Thru-Hole

Part Number
5787617-1

Loose Piece

Solder Tail Length — 2.84 [0.112]
Recommended PCB Thickness — 1.57 [0.062]

Material and Finish
Housing — Thermoplastic, UL94V-0
Shell — Copper alloy, plated bright tin
Contacts — Copper alloy, plated 0.076μm min. gold over 0.76μm min. palladium-nickel on the mating end, 3.8μm min. tin lead on solder tails all over 1.27μm min. nickel underplating or 0.076μm min. Gold on the mating end, 3.8μm min. tin lead on solder tails all over 1.27μm min. nickel underplating.

Recommended PCB Layout

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents. Specifications subject to change.
Right-Angle, Triple Stack Thru-Hole with Panel Grounds

Part Number
1-1734181-2

Material and Finish
Housing — Thermoplastic, UL94V-0, white
Contact — Phosphor bronze, plated gold on contact area and tin on solder-tails, nickel underplated
Front Shell — Brass, nickel plated, copper underplated
Back Shell — SPCC, nickel plated, copper underplated

Product Specification
108-57113

Connector System for Universal Serial Bus (USB)
Series A Receptacle Assemblies (Continued)

Right Angle, Quad Stack, Thru-Hole with Panel Grounds

Part Number
1-1734383-2

Material and Finish
Housing (1) — Thermoplastic with 30% G/F, UL94V-0, color black
Housing (2) — High temperature thermoplastic with 30% G/F, UL94V-0, color black
Contact — Phosphor bronze, gold plated in contact area, tin on solder tails, nickel underplated overall
Front Shield — Brass, tin plated on entire, nickel underplated overall
Rear Shield — Brass, nickel plated
Ground Finger — Brass, tin plated on entire, nickel underplated overall

Recommended PCB Thickness — 1.60 [0.063]

Product Specification
108-57391

---

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents. Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-5-729-0425
South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

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www.tycoelectronics.com
Connector System for Universal Serial Bus (USB)

Series A Receptacle Assemblies (Continued)

Vertical, Thru-Hole

Part Number
1734366-1

Product Specification
108-57547

Recommended PCB Layout

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<td>[.517]</td>
<td>[.492]</td>
<td>[.079]</td>
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<td>[.90]</td>
<td>[.280]</td>
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</tbody>
</table>

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents.
**Connector System for Universal Serial Bus (USB)**

**Series A Plug Assemblies**

### Edge Mount, SMT

**Part Number**
1734089-1

**Material and Finish**
- **Housing** — High temperature thermoplastic, UL94V-0, black or white
- **Contact** — Brass, plated gold on contact area and tin-lead on solder tails, nickel underplated
- **Shield** — Steel, nickel plated, copper underplated

**Product Specification**
108-57304

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<td>.199</td>
<td>7-1470697-2</td>
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</tbody>
</table>

---

**Edge Mount, SMT**

**Part Number**
1734028-1

**Material and Finish**
- **Housing** — Thermoplastic, UL94V-0, black or natural
- **Contact** — Brass, plated gold on contact area and tin-lead on solder tails, nickel underplated
- **Shield** — Steel, nickel plated, copper underplated

**Product Specification**
108-57306

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Catalog 7-1773442-0  Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents. Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-5-729-0425

South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

www.tycoelectronics.com
Cable Plug

Kit includes Housing with contacts cover, front and back shells

Part Number
1734372-1

Product Specification
108-57547

Connector System for Universal Serial Bus (USB)

Series A Plug Assemblies (Continued)
Series B Receptacle Assemblies

### Right Angle, Thru-Hole

**Part Number**
292304-1

**Loose Piece**

**Material and Finish**
- **Housing** — Thermoplastic, UL94V-0
- **Shell** — Copper alloy, plated bright tin
- **Contacts** — Copper alloy, plated 0.076µm min. gold over 0.76µm min. palladium-nickel on the mating end, 3.8µm min. tin lead on solder tails all over 1.27µm min. nickel underplating or 0.076µm min. gold on the mating end, 3.8µm min. tin lead on solder tails all over 1.27µm min. nickel underplating.

**Recommended PCB Thickness** — 1.57 [0.062]

**Product Specification**
108-1586

---

### Vertical Thru-Hole

**Part Number**
5787834-1

**Loose Piece**

**Material and Finish**
- **Housing** — Thermoplastic, UL94V-0
- **Shell** — Copper Alloy, plated bright Tin
- **Contacts** — Copper Alloy, plated 0.076µm min. Gold over 0.76µm min. palladium-nickel on the mating end, 3.8µm min. Tin lead on solder tails all over 1.27µm min. nickel underplating or 0.076µm min. Gold on the mating end, 3.8µm min. Tin lead on solder tails all over 1.27µm min. nickel underplating.

**Recommended PCB Thickness** — 1.57 [0.062]

**Product Specification**
108-1586
Connector System for Universal Serial Bus (USB)

Series B Receptacle Assemblies (Continued)

Right-Angle, SMT

Part Number
1734348

Material and Finish
Housing — High temperature thermoplastic, UL94V-0, black
Contact — Phosphor bronze, plated gold on contact area and tin-copper on soldertails, nickel underplated
Front Shell — Phosphor bronze, nickel plated
Back Shell — Stainless steel, nickel plated

Product Specification
108-57538

Cable Plug

Part Numbers
796007-3 796006-4
Plug Housing & Contact Assembly (Loose Piece)

Material and Finish
Housing — Thermoplastic, UL94V-0
Shell — Copper alloy, plated bright tin
Contacts — Copper alloy, plated 0.076µm min. gold over 0.76µm min. palladium-nickel on the mating end, 3.8µm tin lead on solder tails all over 1.27µm min. nickel underplating or 0.076µm min. gold on the mating end, 3.8µm min. tin lead on solder tails all over 1.27µm min. nickel underplating.

Product Specification
108-1586
Connector System for Universal Serial Bus (USB)

USB Cable Plug Cable Assemblies

Product Facts

- Support latest technology for personal computer Plug and Play peripheral connectivity
- Uses Serial Bus technology to connect USB equipped personal computer to keyboards, mice, printers, video camera, etc
- Requires personal computer equipped with an “A” receptacle, Universal Serial Port
- Larger wire sizes are required for longer lengths to meet USB specifications for maximum current load and milivolt drop

Standard Universal Serial Bus (USB) Cable Assemblies Bus Extender Cable Assemblies

<table>
<thead>
<tr>
<th>Cable Construction</th>
<th>Length* m [ft]</th>
<th>Part Number</th>
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</thead>
<tbody>
<tr>
<td>2/AWG28 (0.08mm²), 2/AWG28 (0.08mm²), Shielded</td>
<td>500 [1,640]</td>
<td>1487594-1</td>
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<tr>
<td>2/AWG28 (0.08mm²), 2/AWG26 (0.15mm²), Shielded</td>
<td>250 [820]</td>
<td>1487594-2</td>
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<tr>
<td>2/AWG28 (0.08mm²), 2/AWG24 (0.20mm²), Shielded</td>
<td>162 [531]</td>
<td>1487594-3</td>
</tr>
<tr>
<td>2/AWG28 (0.08mm²), 2/AWG22 (0.40mm²), Shielded</td>
<td>310 [1,017]</td>
<td>1487594-4</td>
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<td>2/AWG28 (0.08mm²), 2/AWG20 (0.60mm²), Shielded</td>
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<td>5.0 [16]</td>
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<table>
<thead>
<tr>
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<th>Length* m [ft]</th>
<th>Part Number</th>
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<td>974538-1</td>
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<tr>
<td>2/AWG28 (0.08mm²), 2/AWG26 (0.15mm²), Shielded</td>
<td>1.0 [3.3]</td>
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<td>2/AWG28 (0.08mm²), 2/AWG24 (0.20mm²), Shielded</td>
<td>2.0 [6.6]</td>
<td>974540-1</td>
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*Indicates preferred lengths.
Mini USB Connector and Cable Assemblies Input/Output

Product Facts

- Designed to meet the USB 2.0 specifications
- Single 5-Position (one ID pin) receptacle connector polarized for proper orientation
- Used in next generation high density computer peripherals, PDA’s, palm tops and cell phones
- Designed for 480MB/s transfer rate

Mini USB Types

- High density design, allows for all the benefits of USB in a smaller package than traditional USB connectors
- **Mini-A** receptacle is keyed to allow a device to act as the host. It has four solder hold downs, which provide stability in mating and unmating by preventing stress on SMT connector leads
- **Mini-B** receptacle is keyed to allow device to act as a peripheral
- **Mini-AB** receptacle is keyed for devices that can act as a host or peripheral

Applications

- Supports latest technology for personal computer Plug and Play peripheral connectivity
- Uses serial bus technology to connect USB personal computers to PDA’s, cell phones, video cameras, scanners, printers, keyboard and mouse

Part Matrix

<table>
<thead>
<tr>
<th>Product</th>
<th>Series</th>
<th>Part Number</th>
<th>RoHS Compliant</th>
<th>Packaging</th>
<th>Page Number</th>
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<td><strong>Header</strong></td>
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</table>
Connector System for Universal Serial Bus (USB)

Mini USB Receptacle Assemblies (Continued)

Part Number 1734327
Mini-A

Product Specification
108-57062

Part Number 440479
Mini-AB

Product Specification
108-57062

Performance Data

Electrical

Dielectric Withstanding Voltage — 100 VAC
Current Rating — 1.5A @ 250VAC min.
Insulation Resistance — 100 megohms min.
Contact Resistance — 50 milliohms max.
Contact Capacitance — 2pf max per contact
Safety Certification — Recognized under the Component Program of Underwriters Laboratories, Inc. File No. E81956

Mechanical

Durability — 5,000 cycles
Mating Force — 3.57 kg. max.
Unmating Force — 0.31 kg. min.
Recommended PCB Board Thickness — 1.57 [0.062] and 0.80 [0.031]

Materials

Housing — High temperature, thermoplastic glass filled, UL-94-V-0 rated; color black
Shell — Copper alloy
Contacts — 76 microns Au mating end, tin or tin/lead on solder tails as needed

Right Angle SMT

Part Numbers

Mini-A 1734327-1 Tray
1734327-2 T/R
Mini-B 440247-1 Tray
440247-2 T/R
Mini-AB 440479-1 Tray
440479-2 T/R

Part Number 440478 and 440479

Recommended PCB Layout
(Mounting Side)
for Part Numbers 440478 and 440479
Thickness 1.57 [0.062]
Connector System for Universal Serial Bus (USB)

Mini USB Receptacle Assemblies (Continued)

Right Angle, SMT
Mini-B
Part Numbers: 440247
RoHS Compliant: 1734035

Product Specification
108-57062

Recommended PCB Layout
(Mounting Side)
Thickness 1.57 [.062]
Mini USB Plug Assemblies

Cable Plug
Mini USB Type A

Part Number: 440315-1
Lower Shell: 440315-2
Upper Shell: 440315-3, & 1-440315-3

Product Specification
108-57062

Cable Plug
Mini USB Type B

Part Number 1734205-1
Lower Shell and Upper Shell

Product Specification
108-57062
Connector System for Universal Serial Bus (USB)

Cable Assembly

We currently offer a number of customer specials, but still only one standard cable assembly.

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Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752  Canada: 1-905-470-4425  Mexico: 01-800-733-8926
Hong Kong: 852-2735-1628  C. America: 52-55-5-729-0425  South America: 55-11-3611-1514
Japan: 81-44-844-8013  UK: 44-141-810-8967

www.tycoelectronics.com
## Specifications

### Electrical
- **Current Rating**: 1.5 amp max. @ 25°C, derated to 0.2 amp max. @ 70°C ambient
- **Voltage Rating**: 150 volts AC max.
- **Dielectric Withstanding Voltage**: 1000 VAC, RMS, 60 Hz, 1 min. Contact to Contact

### Mechanical
- **PC Board Retention**: will not dislodge from pc board when subjected to 1 lb. [4.4N] pull before soldering and 10 lb. [44N] pull after soldering
- **Durability**: 750 mating cycles

### Material and Finish
- **Housing**: Through-hole: Polyester (wave solder compatible), UL 94V-0 rated; Surface Mount: Polyphenylene Sulfide, or High Temp Nylon, UL 94V-0 rated
- **RJ45/2USB Contact**: — 0.36 [.014] thk. Phosphor bronze; plated 0.00127 [.000050] gold in contact area and 0.00381 [.000150] tin-lead on solder tails, over 0.00127 [.000050] nickel underplate
- **RJ45/1USB Contact**: — Gold flash plating on contact area and 0.00254 [.000100] tin on solder tails, over 0.00127 [.000050] nickel underplate

### Technical Documents
- **Application Specifications**: 114-02048, 114-6040

## Stacked, Thru-Hole

### Product Facts
- Meets or exceeds FCC Part 68 rules and regulations; REA PE-76; and UL 1863, Communication Circuit Accessories
- Meets 1000 volt dielectric requirement Contact to Contact
- 20 dB shielding effectiveness from 30 MHz to 400 MHz
- Selectively gold plated contacts for lower cost
- All jacks are UL 94V-0 flame retardant polyester, standard color black, unless specified otherwise
- Listed by Underwriters Laboratories Inc., File No. E81956
- Certified by Canadian Standards Association, File No. LR 7189A
- Produced under a Quality Management System Certified to ISO 9001

A copy of the certificate is available upon request.

### No. of Part Positions/ LEDs Shielded Performance Panel Inverted Ground

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<td>8/8</td>
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<tr>
<td>RJ45/2USB</td>
<td>8/8</td>
<td>With</td>
<td>No</td>
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</table>

**Note**: Consult Tyco Electronics Customer Drawing for additional Part Numbers.
MAG45 Modular Jacks with Integrated Magnetics Over Stacked USB Series A

Stacked, Thru-Hole
USB/RJ45
(10/100 Base-T or Gigabit)

Product Facts
■ USB/RJ45 with integrated magnetics
■ 10/100 or Gigabit applications
■ Stacked USB type A included
■ UL Recognized
■ Available with LEDs
■ IEEE 802.3 & ANSI X3.263 Compliant
■ USB 2.0 Compliant
■ Numerous circuit options available
■ Supports all appropriate and available PHY Chips and applications
■ For assistance in part selection, please refer to the Tyco Electronics E-Catalog
■ Your Tyco Electronics Sales Representative or one of the Product Information Centers listed below are also available to assist

USBRJ45*

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*multiple LED colors with and without resistors available.

PCB Footprint

Ref.
Connector
Envelope

Ref. 16.13
[.635]

Ref. 13.13
[.517]

Ref. 17.32
[.682]

Ref. 16.13
[.635]

Ref. 8.13
[.320]

Ref. 10.62
[.418]

Ref. 14.35
[.565]

Ref. 2.50
[.098]

Ref. 5.30
[.209]

Ref. 10.15
[.400]

Ref. 2.45
[.096]

Ref. 3.56
[.140]

Ref. 1.14
[.045]

Ref. 0.37
[.015]

Ref. 0.97 ± 0.08
[.038 ± 0.003]

8 Plcs.

Ref. 0.89 ± 0.08
[.035 ± 0.003]

15 Plcs.

Ref. 14.46
[.569]

Ref. 2.03
[.080]

Ref. Connector
Envelope

Ref. ± 0.08
[.003]

4 Plcs.

Ref. ± 0.08
[.003]

4 Plcs.

Ref. ± 0.08
[.003]

4 Plcs.

Ref. ± 0.08
[.003]

4 Plcs.

Ref. ± 0.08
[.003]

4 Plcs.

Ref. ± 0.08
[.003]
Connector System for Universal Serial Bus (USB)

IEEE Over Stacked USB Series A

Stacked, DIP Type

Part Number
1775813

Material and Finish

Housing/Cover/Frame — High temperature thermoplastic, UL94V-0, color black

Contacts —

Shield — Brass with 100µ" min. nickel plating overall, tin hot dipped on solder area.

USB Contact — Phosphor bronze with 150µ" min. bright tin plating on solder tail area, 50µ" min. nickel underplating overall.

USB Shell — Phosphor bronze with 150µ" min. bright tin plating on solder tail area, 50µ" min. nickel underplating overall.

Recommended PCB Thickness —
1.57 [0.062]

Disclaimer

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# Global Contacts

## Americas

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<th>Country</th>
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<td>Argentina</td>
<td>Buenos Aires</td>
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<td>+55-11-3611-0997</td>
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<td>Canada</td>
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## Asia/Pacific

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<td>Bucharest</td>
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<td>St. Petersburg</td>
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<td>South Africa</td>
<td>Port Elizabeth</td>
<td>+2741-513-5007</td>
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<td>Spain</td>
<td>Barcelona</td>
<td>+34-93-291-0300</td>
<td>+34-93-201-7879</td>
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<td>Sweden</td>
<td>Upplands Väby</td>
<td>+46-8-50-72-50-00</td>
<td>+46-8-50-72-50-01</td>
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## Need more information?
Call Technical Support at the numbers listed below.
Technical Support is staffed with specialists well versed in Tyco Electronics products. They can provide you with:
- **Technical support**
- **Catalogs**
- **Technical Documents**
- **Product Samples**
- **Authorized Distributor Locations**