Board to Board Connector Solutions
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# Board to Board Connector Solutions

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Two Piece
The 9159 series of Board-to-Board interconnect system allows two PCB’s to be mated end-to-end creating strips of LED lighting. Designed specifically for the unique Solid State Lighting (SSL) market requiring coplanar (horizontal-to-horizontal) PCB mating with a 5 Amp current rating in the smallest package available. These single sided SMT connectors are perfect for both FR4 and metal boards where you need to butt the boards up together to minimize separation. Availability of both white and black insulation colors make them perfect for lighting as well as industrial applications. With sizes from 2p-6p, these high reliability connectors boast gold plated beryllium copper receptacle contacts for harsh environments.

**APPLICATIONS**
- Coplanar PCB mating in SSL products
- LED linear lighting strips
- Application Notes: refer to 201-01-123

**FEATURES AND BENEFITS**
- Single sided SMT: supports FR4 and metal PCB’s
- 5 Amp current rating: exceeds general market needs
- 5.5mm mated width: minimizes PCB space to decrease LED pitch
- Gold plated BeCu spring contacts: reliability for harsh environments
- Optional retaining clip: provides positive connector mating during vibration
- Available in white: supports SSL market preferences

**ELECTRICAL**
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40°C to +125°C

**MECHANICAL**
- Insulator Material: Nylon: VL94VO
- Contact Material: BeCu / Phos Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

**HOW TO ORDER**

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Certification: UL File #E90723
Horizontal Plug: 10-9159-BTB
2 Position

PLUG
2 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.
8. OPTIONAL RETAINING CLIP, SEE PAGE 8.

2 WAY PCB BOARD LAYOUT

PACKING DETAILS

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
PLUG
3 WAY 2 PART PCB STRIP CONNECTOR

MARKER IN LINE WITH POSITION 1

3 WAY PCB BOARD LAYOUT

PACKING DETAILS

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.
8. OPTIONAL RETAINING CLIP, SEE PAGE 8.

3 WAY PCB BOARD LAYOUT

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
Horizontal Plug: 10-9159-BTB
4 Position

PLUG
4 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.
8. OPTIONAL RETAINING CLIP, SEE PAGE 8.

4 WAY PCB BOARD LAYOUT

PACKING DETAILS

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Horizontal Plug: 10-9159-BTB
5 Position

PLUG
5 WAY 2 PART PCB STRIP CONNECTOR

MARKER IN LINE WITH POSITION 1

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.
8. OPTIONAL RETAINING CLIP, SEE PAGE 8.

5 WAY PCB BOARD LAYOUT

PACKING DETAILS

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
PLUG
6 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.
8. OPTIONAL RETAINING CLIP, SEE PAGE 8.

PACKING DETAILS

6 WAY PCB BOARD LAYOUT

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
**Horizontal Plug: 10-9159-BTB**

Accessory Retaining Clip/Plug Assembly/Mated Assembly/Hand Insertion Tool

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**80-9159-4200-00-000**

ACCESSORY RETAINING CLIP

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**PLUG ASSEMBLY FOR REFERENCE ONLY**

CLIP INSERTED INTO

10-9159-00X-101-X06

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**MATED ASSEMBLY – FOR REFERENCE ONLY**

10-9159-00X-101-X06 MATED WITH 20-9159-00X-X06

---

**NOTES:**

1. CLIP TO RETAIN MATED PAIR PLUG AND SOCKET.
2. MATERIAL: STAINLESS STEEL.
3. TAIL INSERTED INTO SLOT OF 9159 2 PART PLUG (10-9159-00X-101-006). LEADING EDGE CLIPS OVER SOCKET.
4. ALL DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
5. RECOMMENDED 1 CLIP IN 2, 3 AND 4 WAY. 2 CLIPS IN 5 AND 6 WAY. POSITIONS AT CUSTOMER DISCRETION.

---

**Description** | # of Positions | Part Number | UL File #
---|---|---|---
Horizontal Plug w/pre-installed locking clip | 2 | 58 9159 000 000 015 | E90723
Horizontal Plug w/pre-installed locking clip | 3 | 58 9159 003 000 015 | E90723
Horizontal Plug w/pre-installed locking clip | 4 | 58 9159 004 000 015 | E90723
Horizontal Plug w/pre-installed locking clips | 5 | 58 9159 005 000 015 | E90723
Horizontal Plug w/pre-installed locking clips | 6 | 58 9159 006 000 015 | E90723

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The 9159 series of Board-to-Board interconnect system allows two PCB’s to be mated end-to-end creating strips of LED lighting. Designed specifically for the unique Solid State Lighting (SSL) market requiring coplanar (horizontal-to-horizontal) PCB mating with a 5 Amp current rating in the smallest package available. The cabled plug was developed to bring power and signals onto the PCB’s while keeping the same board level interface. This allows the designer to build a single PCB with a receptacle on one end and a plug on the other end to minimize cost and inventory. Regardless of where the PCB is used in the system, the cabled plug connector will then create the connection to the outside world. The optional latch can be inserted into the plug housing to assure positive attachment to the PCB in harsh environments without having to change the PCB connector.

**APPLICATIONS**
- Provided Wire-to-Board capabilities to standard 9159 2-Piece connector system
- Application Notes: refer to 201-01-123

**FEATURES AND BENEFITS**
- Mates with standard horizontal socket: no need to change any connectors
- 5 Amp current rating: exceeds general market needs
- Wires are soldered into connector with tie wrap strain relief: simplicity
- Optional latch: provides positive attachment to PCB connector

**ELECTRICAL**
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40°C to +125°C

**MECHANICAL**
- Insulator Material: Nylon: VL94VO
- Contact Material: BeCu / Phos Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

**HOW TO ORDER**

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**Optional Cover**
See page 15 for ordering code

**Optional Latch**
See page 16 for ordering code

NOTES: Connectors are supplied with cable ties (see page 17).
Covers/Latches are sold separately (see pages 15-16 for ordering codes).

Certification: UL File #E90723
**Solder Cup Plug: 11-9159-WTB**

**2 Position**

---

**PLUG WIRED**

**2 WAY 2 PART 9159 LIGHTING CONNECTOR**

---

**NOTES:**

1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. CABLE TIE SUPPLIED FOR WIRE RETENTION, ATTACHED TO EACH REEL. SPARES CAN BE ORDERED, REFER TO PAGE 17.
3. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
4. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 9.
5. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
6. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
7. FOR ACCESSORY COVERS AND LATCHES REFER TO PAGES 15 AND 16.

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**PACKING DETAILS**

**CABLE TIES SUPPLIED WITH EACH REEL**

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Solder Cup Plug: 11-9159-WTB
3 Position

**PLUG WIRED**

**3 WAY 2 PART 9159 LIGHTING CONNECTOR**

---

**NOTES:**
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. CABLE TIE SUPPLIED FOR WIRE RETENTION, ATTACHED TO EACH REEL. SPARES CAN BE ORDERED, REFER TO PAGE 17.
3. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
4. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 9.
5. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
6. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
7. FOR ACCESSORY COVERS AND LATCHES REFER TO PAGES 15 AND 16.

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**PACKING DETAILS**
CABLE TIES SUPPLIED WITH EACH REEL
Solder Cup Plug: 11-9159-WTB

4 Position

PLUG WIRED
4 WAY 2 PART 9159 LIGHTING CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. CABLE TIE SUPPLIED FOR WIRE RETENTION, ATTACHED TO EACH REEL. SPARES CAN BE ORDERED, REFER TO PAGE 17.
3. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
4. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 9.
5. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN PLATED ON TAILS.
6. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
7. FOR ACCESSORY COVERS AND LATCHES REFER TO PAGES 15 AND 16.

PACKING DETAILS
CABLE TIES SUPPLIED WITH EACH REEL

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Solder Cup Plug: 11-9159-WTB
5 Position

PLUG WIRED
5 WAY 2 PART 9159 LIGHTING CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. CABLE TIE SUPPLIED FOR WIRE RETENTION, ATTACHED TO EACH REEL.
   SPARES CAN BE ORDERED, REFER TO PAGE 17.
3. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
4. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 9.
5. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL TIN
   PLATED ON TAILS.
6. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
7. FOR ACCESSORY COVERS AND LATCHES REFER TO PAGES 15 AND 16.

PACKING DETAILS
CABLE TIES SUPPLIED WITH EACH REEL

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Solder Cup Plug: 11-9159-WTB
6 Position

PLUG WIRED
6 WAY 2 PART 9159 LIGHTING CONNECTOR

CABLE TIES SUPPLIED WITH EACH REEL

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. CABLE TIE SUPPLIED FOR WIRE RETENTION, ATTACHED TO EACH REEL.
   SPARES CAN BE ORDERED, REFER TO PAGE 17.
3. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
4. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 9.
5. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL
   TIN PLATED ON TAILS.
6. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
7. FOR ACCESSORY COVERS AND LATCHES REFER TO PAGES 15 AND 16.

PACKING DETAILS
CABLE TIES SUPPLIED WITH EACH REEL

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Solder Cup Plug: 11-9159-WTB
Cover Accessory

PLUG WIRED COVERS
ACCESSORY NOT SUPPLIED WITH CONNECTOR ASSEMBLY

2 WAY COVER 60-9159-3302-0X-000

3 WAY COVER 60-9159-3303-0X-000

4 WAY COVER 60-9159-3304-0X-000

5 WAY COVER 60-9159-3305-0X-000

6 WAY COVER 60-9159-3306-0X-000

NOTES:
1. COVER (SLIDE ON) AVAILABLE TO PROTECT CABLE ENTRY.
2. OPTION COMPONENT. ORDER SEPARATELY.
3. PACKED IN BAGS, 1400 PIECES PER BAG.
4. MAXIMUM OUTER WIRE SIZE, 1.6MM DIAMETER INSULATION.
5. MATERIAL: GLASS FILLED NYLON 46. COLOR REFER TO PAGE 9.
6. COLOR OPTIONS SEE PAGE 9.
7. ALL DIMENSIONS ARE REFERENCED DIMENSIONS.
8. TO BE ASSEMBLED BEFORE CABLE TIE.

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Solder Cup Plug: 11-9159-WTB
Latch Accessory

PLUG WIRED LATCHES
ACCESSORY NOT SUPPLIED WITH CONNECTOR ASSEMBLY

LATCH 60-9159-3402-0X-000
USED ON 2, 4 AND 6 WAY ASSEMBLIES

LATCH 60-9159-3403-0X-000
USED ON 3 AND 5 WAY ASSEMBLIES

NOTES:
1. LATCH AVAILABLE TO RETAIN MATED PLUG.
2. OPTIONAL COMPONENT, ORDER SEPARATELY. SEE PAGE 17.
3. PACKAGED IN BAGS, 1400 PIECES PER BAG.
4. MATERIAL: GLASS FILLED NYLON 46. COLOR REFER TO PAGE 9.
5. ALL DIMENSIONS ARE REFERENCED DIMENSIONS.
6. TO BE ASSEMBLED BEFORE COVER.
Solder Cup Plug: 11-9159-WTB
Accessory Ordering Codes / 3 Assembled Options

PLUG WIRED ACCESSORY ORDERING CODES

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</table>

CABLE TIE
Supplied in bags with each reel of connector assemblies. Color White. For additional ties order code 90-2211-7092-00-000. Packed in bags, 700 pieces per bag.

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This vertical plug connector opens up the spectrum to include all commercial, industrial and transportation applications requiring perpendicular PCB mating and latching Wire-to-Board cabled sockets with an already proven connector system. With sizes from 2p-6p, these gold plated contacts mate with high spring force beryllium copper receptacle connectors.

**APPLICATIONS**
- Allows assembly of PCB’s at right angles
- Accepts 24-9159 IDC wired/cabled socket
- Reference application notes 201-01-123
- Reference Product Specification 201-01-119

**FEATURES AND BENEFITS**
- Single sided SMT RoHS solder attachment
- Centrally located pick & place cap for easy placement
- Gold plated BeCu contact system for high reliability in harsh environments
- Available in white: supports SSL market preferences

**ELECTRICAL**
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40°C to +125°C

**MECHANICAL**
- Insulator Material: Nylon: UL94VO
- Contact Material: BeCu / Phos Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

**HOW TO ORDER**

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Certification: UL File #E90723
Vertical Plug: 13-9159-BTB
2 Position

PLUG – VERTICAL MOUNT
2 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR FULL PRODUCT SPECIFICATION STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-119, UL COMPONENTS REFER TO ELCO SPEC 201-01-119UL. FOR APPLICATION NOTES REFER TO 201-01-123.
2. GENERAL TOLERANCE ±0.20 UNLESS TOLERANCED.
3. INSULATOR MATERIAL: NYLON 46, UL94 V-0, COLOR REFER TO PAGE 18.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL, TIN PLATE ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
8. PICK AND PLACE CAP TO BE REMOVED AFTER USE.
9. OPTIONAL SLOT: ONLY REQUIRED WHEN SOCKET HAS A LATCH, RADIUS ON ENDS OPTIONAL.

2 WAY PCB BOARD LAYOUT

PACKING DETAILS

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Vertical Plug: 13-9159-BTB
3 Position

PLUG – VERTICAL MOUNT
3 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR FULL PRODUCT SPECIFICATION STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-119, UL COMPONENTS REFER TO ELCO SPEC 201-01-119UL. FOR APPLICATION NOTES REFER TO 201-01-123.
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3 WAY PCB BOARD LAYOUT

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PLUG – VERTICAL MOUNT
4 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
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2. GENERAL TOLERANCE ±0.20 UNLESS TOLERANCED.
3. INSULATOR MATERIAL: NYLON 46, UL94 V-0, COLOR REFER TO PAGE 18.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL, TIN PLATE ON TAILS.
5. BRACKETS: COPPER ALLOY TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
8. PICK AND PLACE CAP TO BE REMOVED AFTER USE.
9. OPTIONAL SLOT: ONLY REQUIRED WHEN SOCKET HAS A LATCH, RADIUS ON ENDS OPTIONAL.

PACKING DETAILS

4 WAY PCB BOARD LAYOUT

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PLUG – VERTICAL MOUNT
5 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR FULL PRODUCT SPECIFICATION STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-119, UL COMPONENTS REFER TO ELCO SPEC 201-01-119UL. FOR APPLICATION NOTES REFER TO 201-01-123.
2. GENERAL TOLERANCE ±0.20 UNLESS TOLERANCED.
3. INSULATOR MATERIAL: NYLON 46, UL94 V-0, COLOR REFER TO PAGE 18.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL, TIN PLATE ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
8. PICK AND PLACE CAP TO BE REMOVED AFTER USE.
9. OPTIONAL SLOT: ONLY REQUIRED WHEN SOCKET HAS A LATCH, RADIUS ON ENDS OPTIONAL.

5 WAY PCB BOARD LAYOUT

PACKING DETAILS

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Vertical Plug: 13-9159 BTB
6 Position

PLUG – VERTICAL MOUNT
6 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR FULL PRODUCT SPECIFICATION STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-119, UL COMPONENTS REFER TO ELCO SPEC 201-01-119UL. FOR APPLICATION NOTES REFER TO 201-01-123.
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3. INSULATOR MATERIAL: NYLON 46, UL94 V-0, COLOR REFER TO PAGE 18.
4. CONTACT MATERIAL: COPPER ALLOY, SELECTIVE GOLD OVER NICKEL, TIN PLATE ON TAILS.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
8. PICK AND PLACE CAP TO BE REMOVED AFTER USE.
9. OPTIONAL SLOT: ONLY REQUIRED WHEN SOCKET HAS A LATCH, RADIUS ON ENDS OPTIONAL.

6 WAY PCB BOARD LAYOUT

Packing Details

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The IDC cable plug connector allows for 22-24AWG discrete or cabled wires to be easily and reliably terminated into a 9159 standard interface socket connector. This will allow power and signals to be connectors onto a PCB socket connector while providing positive latching. The wire assembly support block allows for 2 through 6 wires to be terminated all in one step with any standard bench top press. IDC covers provide both through (daisy chain applications) and wire stop termination options.

### APPLICATIONS
- Provides Wire-to-Board capabilities to standard 9159 2-Piece connector system
- In conjunction with the IDC socket WTB connector (24-9159), these connectors provide maximum flexibility to bring power and signal wires onto or off of any board level 9159 connector
- Reference application notes 201-01-123
- Reference Product Specification 201-01-119

### ELECTRICAL
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

### ENVIRONMENTAL
- Operating Temperature: -40°C to +125°C

### MECHANICAL
- Insulator Material: Nylon: UL94VO
- Contact Material: Phosphor Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

### HOW TO ORDER

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<th>Cap Options</th>
<th>Description</th>
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<td>0</td>
<td>Through Wire</td>
<td>Allows wires to be terminated at any point</td>
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<tr>
<td>9</td>
<td>Wire Stop</td>
<td>Terminates end of wire. End protected with Stop Face</td>
</tr>
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- Reference application notes 201-01-123
- Reference Product Specification 201-01-119
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC
- Operating Temperature: -40°C to +125°C
- Insulator Material: Nylon: UL94VO
- Contact Material: Phosphor Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

Certification: UL File #E90723
IDC Plug: 14-9159-WTB
2 Position Through Wire Cap

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119. FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. THROUGH WIRE CAP FOR TERMINATION OF WIRE IN ANY POSITION.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE, PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 24.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT, TIN ON IDC.
7. PACKING IN TAPE AND REEL. QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
9. ASSEMBLY AIDS, REFER TO PAGE 35.

Wire Gauge Code (Page 24) Diameter Dimension A Wire Insulation Diameter
22AWG (Stranded Wire) 122 0.47 1.10 to 1.60
24AWG (Stranded Wire) 132 0.37 1.10 to 1.60

PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)
NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119. FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
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### PACKING DETAILS

CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)

**Quantity per Reel 700**

**330mm Dia Reel**
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PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)
IDC Plug: 14-9159-WTB
3 Position Wire Stop Cap

PLUG-WIRED – 3 WAY WIRE STOP CAP

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP; NARROW SLOT TO GRIP WIRE,
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<td>132</td>
<td>0.37</td>
<td>1.10 to 1.60</td>
</tr>
</tbody>
</table>

PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)
NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. WIRE STOP CAP, WITH STOP FACE O ONE SIDE TO PROTECT END OF WIRE.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE, PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 24.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT, TIN ON IDC.
7. PACKING IN TAPE AND REEL, QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
9. SHOWN WITH WIRE ENTRY FROM UNDERSIDE, CAP CAN BE ASSEMBLED FOR EITHER TOP OR UNDERSIDE WIRE ENTRY.
10. ASSEMBLY AIDS, REFER TO PAGE 35.

PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
PLUG-WIRED – ASSEMBLY SUPPORT BLOCK

NOTES:
1. BLOCK TO SUPPORT 9159 IDC WIRED CONNECTORS DURING ASSEMBLY OF CAP/WIRE.
2. PART NUMBER 06-9159-7026-01-000, MATERIAL ALUMINUM. PART NUMBER 06-9159-7026-02-000, MATERIAL NYLON 46.
3. CAN BE USED WITH EITHER THE PLUG OR SOCKET CONNECTORS, USE THE CORRECT SLOT AS IDENTIFIED.
4. FOR FULL WIRE ASSEMBLY DETAILS REFER TO APPLICATION NOTES 201-01-123.
5. ONLY A SIMPLE FLAT BOTTOMED TOOL REQUIRED TO PUSH THE CAP DOWN (NOT SUPPLIED.)
6. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
7. 06-9159-7026-02-000 HAS RIBS TO HELP LOCATE CONTACT/INSULATOR SUB-ASSEMBLY.

PLUG-WIRED – WIRE INSERTION TOOL

NOTES:
1. TOOL 06-9159-7027-01-000 TO INSERT WIRES INTO CAP.
2. FOR USE WITH UNIVERSAL HANDLE 06-7000-7720-01-000.
3. CAN BE USED WITH BOTH THROUGH WIRE AND WIRE STOP CAPS.
4. REFER TO APPLICATION NOTES 201-01-123 FOR FURTHER DETAILS.
The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
The 9159 series of Board-to-Board interconnect system allows two PCB’s to be mated end-to-end creating strips of LED lighting. Designed specifically for the unique Solid State Lighting (SSL) market requiring coplanar (horizontal-to-horizontal) PCB mating with a 5 Amp current rating in the smallest package available. These single sided SMT connectors are perfect for both FR4 and metal boards where you need to butt the boards up together to minimize separation. Availability of both white and black insulation colors make them perfect for lighting as well as industrial applications. With sizes from 2p-6p, these high reliability connectors boast gold plated beryllium copper receptacle contacts for harsh environments.

### APPLICATIONS
- Coplanar PCB mating in SSL products
- LED linear lighting strips
- Application Notes: refer to 201-01-123

### FEATURES AND BENEFITS
- Single sided SMT: supports FR4 and metal PCB’s
- 5 Amp current rating: exceeds general market needs
- 5.5mm mated width: minimizes PCB space to decrease LED pitch
- Gold plated BeCu spring contacts: reliability for harsh environments
- Optional retaining clip: provides positive connector mating during vibration
- Available in white: supports SSL market preferences

### ELECTRICAL
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

### ENVIRONMENTAL
- Operating Temperature: 
  -40°C to +125°C

### MECHANICAL
- Insulator Material: Nylon: VL94VO
- Contact Material: BeCu / Phos Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

### HOW TO ORDER
- Prefix: 20
- Series: 9159
- Code: 00X
- Number of Ways: 2 Part PCB Strip Connector
- Pitch: 01 = 3mm
- Color/Approval: 9 White UL Approved
- Plating Option: 16 Gold in Contact Area Gold on Solder Tail Tin all over

Certification: UL File #E90723
2 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 37.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

2 WAY PCB BOARD LAYOUT

PACKING DETAILS

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3 Way 2 Part PCB Strip Connector

**NOTES:**
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 37.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

---

3 Way PCB Board Layout

Packing Details
SOCKET
4 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46.
   COLOR REFER TO PAGE 37.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

4 WAY PCB BOARD LAYOUT

PACKING DETAILS

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5 Position

**SOCKET**

**5 WAY 2 PART PCB STRIP CONNECTOR**

**NOTES:**
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 37.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

**5 WAY PCB BOARD LAYOUT**

**PACKING DETAILS**

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SOCKET
6 WAY 2 PART PCB STRIP CONNECTOR

MARKER IN LINE WITH POSITION 1

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 37.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

6 WAY PCB BOARD LAYOUT

PACKING DETAILS
The 9159 series of Board-to-Board interconnect system allows two PCB's to be mated end-to-end creating strips of LED lighting. Designed specifically for the unique Solid State Lighting (SSL) market requiring coplanar (horizontal-to-horizontal) PCB mating with a 5 Amp current rating in the smallest package available. The top loading socket allows complete PCB's to be replaced in the field without having to disassemble the entire strip of boards. The connector has a two part insulator whereby the top of the connector will slide open allowing the plug connector to be pulled out either vertically or at a slight angle. Once the PCB is replaced, the cover is slid back like a Zero Insertion Force (ZIF) connector to the closed position. The PCB layout is identical to the standard horizontal socket to maintain family commonality at the PCB level.

**APPLICATIONS**
- Coplanar PCB mating in SSL products
- LED linear lighting strips
- Application Notes: refer to 201-01-123

**FEATURES AND BENEFITS**
- Slide open top: allows field reparability at the light fixture level
- Mates with standard horizontal or cabled plug: no need to change any connectors
- 5 Amp current rating: exceeds general market needs
- Gold plated BeCu spring contacts: reliability for harsh environments
- Available in white: supports SSL market preferences

**ELECTRICAL**
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon: VL94VO
- Contact Material: BeCu / Phos Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

**HOW TO ORDER**
- Prefix: 22
- Series: 9159
- Code No of Ways Details
  - 002 2 Page 44
  - 003 3 Page 45
  - 004 4 Page 46
  - 005 5 Page 47
  - 006 6 Page 48
- Number of Ways:
  - 2 Part PCB Strip Connector
  - Connector Pitch: 01 x 3mm
- Color/Approval Plating Option
  - Code Contact Bracket
  - 9 White UL Approved
  - 16 Gold in Contact Area Gold on Solder Tail Tin all over

Certification: UL File #E90723
SOCKET TOP LOADING
2 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 43.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 2.20MM MAXIMUM.
8. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 0.40MM MAXIMUM.
9. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

2 WAY PCB BOARD LAYOUT

PACKING DETAILS
NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 43.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 2.20MM MAXIMUM.
8. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 0.40MM MAXIMUM.
9. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

3 WAY PCB BOARD LAYOUT

PACKING DETAILS
SOCKET TOP LOADING
4 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 43.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 2.20MM MAXIMUM.
8. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 0.40MM MAXIMUM.
9. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

4 WAY PCB BOARD LAYOUT

PACKING DETAILS
**Top Load Socket: 22-9159-BTB**

5 Position

**SOCKET TOP LOADING**

**5 WAY 2 PART PCB STRIP CONNECTOR**

**NOTES:**

1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 43.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 2.20MM MAXIMUM.
8. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 0.40MM MAXIMUM.
9. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

**5 WAY PCB BOARD LAYOUT**

**PACKING DETAILS**

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Top Load Socket: 22-9159-BTB

6 Position

SOCKET TOP LOADING
6 WAY 2 PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCES.
3. INSULATOR MATERIAL: NYLON 46. COLOR REFER TO PAGE 43.
4. CONTACT MATERIAL: COPPER ALLOY, GOLD OVER NICKEL.
5. BRACKETS: COPPER ALLOY, TIN PLATED.
6. OUTLINE OF CONNECTOR.
7. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 2.20MM MAXIMUM.
8. RESTRICTED COMPONENT HEIGHT UNDER CATCH, 0.40MM MAXIMUM.
9. PACKING TAPE AND REEL, QUANTITY 1400 PER REEL.

6 WAY PCB BOARD LAYOUT

PACKING DETAILS

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KYOCERA AVX developed the 9159 Series of SMT connectors for co-planar PCB mating for the challenging Solid State Lighting (SSL) market. These connectors needed to be small, low in height, carry up to 5 Amps/contact and then function up to 125C for extended periods. This application has been very unique to the SSL market where PCB's are stacked end-to-end to create linear strip lighting in everything from office to transportation applications where products are exposed to harsh mechanical and environmental environments.

The IDC cable socket connector allows for 22-24AWG discrete or cabled wires to be easily and reliability terminated into a 9159 standard interface plug connector. This will allow power and signals to be connectors onto a PCB socket connector while providing positive latching. The wire assembly support block allows for 2 through 6 wires to be terminated all in one step with any standard bench top press. IDC covers provide both through (daisy chain applications) and wire stop termination options.

### APPLICATIONS
- Provides Wire-to-Board capabilities to standard 9159 2-Piece connector system
- In conjunction with the IDC plug WTB connector (14-9159), these connectors provide maximum flexibility to bring power and signal wires onto or off of any board level 9159 connector
- Reference application notes 201-01-123
- Reference Product Specification 201-01-119

### ELECTRICAL
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

### ENVIRONMENTAL
- Operating Temperature: -40°C to +125°C

### MECHANICAL
- Insulator Material: Nylon: VL94VO
- Contact Material: BeCu / Phos Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

### HOW TO ORDER

<table>
<thead>
<tr>
<th>Code</th>
<th>No of Ways</th>
<th>Details</th>
</tr>
</thead>
<tbody>
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<td>2</td>
<td>Page 51</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Page 52</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Page 53</td>
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<tr>
<td>5</td>
<td>5</td>
<td>Page 54</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Page 55</td>
</tr>
</tbody>
</table>

**Wire Stop Cap**

<table>
<thead>
<tr>
<th>Code</th>
<th>No of Ways</th>
<th>Details</th>
</tr>
</thead>
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<tr>
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<td>4</td>
<td>4</td>
<td>Page 58</td>
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<tr>
<td>5</td>
<td>5</td>
<td>Page 59</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Page 60</td>
</tr>
</tbody>
</table>

**Color Options**

- 9 = UL

**Cap Options**

- 0 = Through Wire
- 9 = Wire Stop

**Plating Option**

- 6 = Gold on Contact Tin on IDC

Certification: UL File #E90723
NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. THROUGH WIRE CAP, FOR TERMINATION OF WIRE IN ANY POSITION.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE,
   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON
   CONTACT, TIN ON IDC.
7. PACKING IN TAPE AND REEL. QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND
   1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
9. ASSEMBLY AIDS, REFER TO PAGE 61.

<table>
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<th>Wire Insulation Diameter</th>
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<td>22AWG (Stranded Wire)</td>
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<td>1.10 to 1.60</td>
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<td>132</td>
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PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)
SOCKET WIRED – 3 WAY THROUGH WIRE CAP

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. THROUGH WIRE CAP FOR TERMINATION OF WIRE IN ANY POSITION.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE,
   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT,
   TIN ON IDC.
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NOTES:
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   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. THROUGH WIRE CAP; FOR TERMINATION OF WIRE IN ANY POSITION.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE, PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT, TIN ON IDC.
7. PACKING IN TAPE AND REEL. QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
9. ASSEMBLY AIDS, REFER TO PAGE 61.

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   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT,
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8. WIRE GAUGE OPTIONS, SEE TABLE.
9. ASSEMBLY AIDS, REFER TO PAGE 61.

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PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)
IDC Socket: 24-9159-WTB
6 Position Through Wire Cap

SOCKET WIRED – 6 WAY THROUGH WIRE CAP

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. THROUGH WIRE CAP; FOR TERMINATION OF WIRE IN ANY POSITION.
3. CAP ACTS AS WIRE ASSEMBLY TOOL; WIRE PREFIT TO CAP; NARROW SLOT TO GRIP WIRE,
   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT,
   TIN ON IDC.
7. PACKING IN TAPE AND REEL, QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
9. ASSEMBLY AIDS, REFER TO PAGE 61.

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PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)

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SOCKET-WIRED – 2 WAY WIRE STOP CAP

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. WIRE STOP CAP WITH STOP FACE ON ONE SIDE TO PROTECT END OF WIRE.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE,
   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT,
   TIN ON IDC.
7. PACKING IN TAPE AND REEL, QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
9. SHOWN WITH WIRE ENTRY FROM UNDERSIDE, CAP CAN BE ASSEMBLED FOR EITHER TOP OR
   UNDERSIDE WIRE ENTRY.
10. ASSEMBLY AIDS, REFER TO PAGE 61.

<table>
<thead>
<tr>
<th>Wire Gauge</th>
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<th>Dimension A</th>
<th>Wire Insulation Diameter</th>
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<td>122</td>
<td>0.47</td>
<td>1.10 to 1.60</td>
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<tr>
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<td>132</td>
<td>0.37</td>
<td>1.10 to 1.60</td>
</tr>
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</table>

PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)
NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. WIRE STOP CAP, WITH STOP FACE ON ONE SIDE TO PROTECT END OF WIRE.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE,
   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT,
   TIN ON IDC.
7. PACKING IN TAPE AND REEL. QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
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Packing Details
Cap and Connector Supplied Together (2 Parts)

---

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NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. WIRE STOP CAP WITH STOP FACE ON ONE SIDE TO PROTECT END OF WIRE.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE,
   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT,
   TIN ON IDC.
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8. WIRE GAUGE OPTIONS, SEE TABLE.
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SOCKET-WIRED – 5 WAY WIRE STOP CAP

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119. FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. WIRE STOP CAP, WITH STOP FACE ON ONE SIDE TO PROTECT END OF WIRE.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE, PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT, TIN ON IDC.
7. PACKING IN TAPE AND REEL. QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
8. WIRE GAUGE OPTIONS, SEE TABLE.
9. SHOWN WITH WIRE ENTRY FROM UNDERSIDE, CAP CAN BE ASSEMBLED FOR EITHER TOP OR UNDERSIDE WIRE ENTRY.
10. ASSEMBLY AIDS, REFER TO PAGE 61.

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NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-119.
   FOR WIRE ASSEMBLY REFER TO APPLICATION NOTES 201-01-123.
2. WIRE STOP CAP WITH STOP FACE ON ONE SIDE TO PROTECT END OF WIRE.
3. CAP ACTS AS WIRE ASSEMBLY TOOL. WIRE PREFIT TO CAP, NARROW SLOT TO GRIP WIRE,
   PERMANENT ASSEMBLY.
4. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
5. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 50.
6. CONTACT MATERIAL: COPPER ALLOY, PLATING NICKEL BASE ALL OVER, GOLD ON CONTACT,
   TIN ON IDC.
7. PACKING IN TAPE AND REEL. QTY PER REEL 700, POCKET CONTAINS 1 CONNECTOR AND 1 CAP.
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10. ASSEMBLY AIDS, REFER TO PAGE 61.

Wire Gauge Code (Page 50) Dimension A Wire Insulation Diameter
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PACKING DETAILS
CAP AND CONNECTOR SUPPLIED TOGETHER (2 PARTS)

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**SECTION ON A-A**

**NOTES:**
1. BLOCK TO SUPPORT 9159 IDC WIRED CONNECTORS DURING ASSEMBLY OF CAP/WIRE.
2. PART NUMBER 06-9159-7026-01-000, MATERIAL ALUMINUM. PART NUMBER 06-9159-7026-02-000, MATERIAL NYLON 46.
3. CAN BE USED WITH EITHER THE PLUG OR SOCKET CONNECTORS, USE THE CORRECT SLOT AS IDENTIFIED.
4. FOR FULL WIRE ASSEMBLY DETAILS REFER TO APPLICATION NOTES 201-01-123.
5. ONLY A SIMPLE FLAT BOTTOMED TOOL REQUIRED TO PUSH THE CAP DOWN (NOT SUPPLIED.)
6. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
7. 06-9159-7026-02-000 HAS RIBS TO HELP LOCATE CONTACT/INSULATOR SUB-ASSEMBLY.

---

**SOCKET-WIRED – WIRE INSERTION TOOL**

**NOTES:**
1. TOOL 06-9159-7027-01-000 TO INSERT WIRES INTO CAP.
2. FOR USE WITH UNIVERSAL HANDLE 06-7000-7720-01-000.
3. CAN BE USED WITH BOTH THROUGH WIRE AND WIRE STOP CAPS.
4. REFER TO APPLICATION NOTES 201-01-123 FOR FURTHER DETAILS.
IDC Socket: 24-9159-WTB
Assembly

SOCKET-WIRED – ASSEMBLY

THROUGH WIRE

WIRED STOP
WIRE ENTRY UNDERSIDE

WIRED STOP
WIRE ENTRY TOP

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
Shorting Socket: 58-9159-BTB

General Description

The 9159 series of Board-to-Board interconnect system allows two PCB’s to be mated end-to-end creating strips of LED lighting. Designed specifically for the unique Solid State Lighting (SSL) market requiring coplanar (horizontal-to-horizontal) PCB mating with a 5 Amp current rating in the smallest package available. The top loading socket allows complete PCB’s to be replaced in the field without having to disassemble the entire strip of boards. The connector has a two part insulator whereby the top of the connector will slide open allowing the plug connector to be pulled out either vertically or at a slight angle. Once the PCB is replaced, the cover is slid back like a Zero Insertion Force (ZIF) connector to the closed position. The PCB layout is identical to the standard horizontal socket to maintain family commonality at the PCB level.

APPLICATIONS
- Coplanar PCB mating in SSL products
- LED linear lighting strips
- Application Notes: refer to 201-01-123

FEATURES AND BENEFITS
- Mates to the standard plug connector: does not require a new connector
- Integral latching mechanism: Provides positive attachment to the plug
- Gold plated BeCu spring contacts: reliability for harsh environments
- Available in white: supports SSL market preferences

ELECTRICAL
- Current Rating: 5 Amps / Contact
- Voltage Rating: 125 VAC

ENVIRONMENTAL
- Operating Temperature: -40°C to +125°C

MECHANICAL
- Insulator Material: Nylon: VL94VO
- Contact Material: BeCu / Phos Bronze
- Plating: Gold / Tin over Nickel
- Durability: 10 Cycles

HOW TO ORDER
58 9159 002 000 006

Certification: UL File #E90723
Shorting Socket: 58-9159-BTB

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
GENERAL DESCRIPTION
Dissecting linear LED lighting from a connector standpoint looks very simple from far away, but up close there is no magical solution. Even though there have been new connectors developed in recent years specifically for this application, the specific requirements in challenging new designs continue to push for something better, different and more cost competitive. KYOCERA AVX has been one of the companies developing new connector systems for this specific application. The 2-Piece 9159 series offers the smallest profile while still supporting full 5 Amp capability.

KYOCERA AVX’s latest approach is to not even have a connector! LED’s run down the center of the board looking to minimize pitch densities to maximize light output. Connectors interrupt this requirement at each Board-to-Board interface. By design and construction, providing a single contact connector is not economical. However, removing the cost of the connector without removing the functionality provides both a technical and cost effective solution. By removing the insulator and allowing contacts to be placed individually, the PCB can be designed with the LED’s in the center of the PCB and the contacts on the outer edges. This optimizes the design for functionality and assembly at the best cost possible. More specifically, the contacts are packaged in T&R for automatic placement, absorb significant x and y assembly tolerances and provide a reliable gold-to-gold active contact interface. Application notes are available to outline all of the contact configurations to support both BTB and WTB applications.

APPLICATIONS
• Linear LED strip lighting
• Commercial/Industrial co-planar or extended card applications
• Reference Product Specification 201-01-149

FEATURES AND BENEFITS
• Gold plated horizontal contact system maximizes lateral PCB alignment and mating tolerances with a proven 2-pc connector solution
• Contact height has been minimized to 1.2mm above the PCB to prevent any shadowing effect
• Contacts can be individually spaced to support any voltage rating with a full 5 Amp current rating
• Individual contacts can support BTB and WTB applications

ELECTRICAL
• Current Rating: 5.0 Amps
• Voltage Rating: UL 300V
  Based on placement distance

ENVIRONMENTAL
• Operating Temperature: -40°C to +125°C

MECHANICAL
• Contact Material: Copper Alloy
• Plug Plating: Gold in mating area, tin on tails
• Socket Contact; Gold all over
• Durability 5 Cycles

HOW TO ORDER
Prefix
70 = Contact
Series
9159 = 9159 Series
Number of Ways
001 = 1

4XX = Contact Description
401 = PLUG - SMT
402 = Socket - SMT
411 = Plug - SMT - Locking

006 = Gold in Contact Area

Certification: UL File #E90723
Single 2 Piece Contacts: 70-9159-BTB
401 Plug

70-9159-001-401-006

**SUGGESTED PCB LAYOUT**

**NOTES:**
1. 9159 SINGLE CONTACT, SMT MOUNT, PLUG CONTACT.
2. TO MATE WITH 70-9159-001-402-006 SOCKET CONTACT, REFER TO PAGE 67.
3. TYPICAL APPLICATIONS SEE PAGES 69 AND 70.
4. FOR FURTHER INFORMATION REFER TO SPECIFICATION 201-01-148 AND APPLICATION NOTES 201-01-149.
5. COPPER ALLOY, NICKEL UNDERCOAT, GOLD IN CONTACT AREA. TIN ON SOLDER TAIL.
6. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
7. PACKAGING IN TAPE AND REEL, QUANTITY PER REEL 4500.
8. UL REFERENCE E90723 (US AND CANADA).
9. AREA AVAILABLE FOR PICK AND PLACE.

**PACKING DETAILS**

**NOTE 9**

UNREELED DIRECTION

330mm REEL

QUANTITY PER REEL 4500
Single 2 Piece Contacts: 70-9159-BTB

402 Socket

70-9159-001-402-006

SUGGESTED PCB LAYOUT

NOTES:
1. 9159 SINGLE CONTACT, SMT MOUNT, SOCKET CONTACT.
2. TO MATE WITH 70-9159-001-401-006 PLUG CONTACT, REFER TO PAGE 66 AND LOCATING PLUG CONTACT 70-9159-001-411-006 PAGE 68.
3. TYPICAL APPLICATIONS SEE PAGES 69 AND 70.
4. FOR FURTHER INFORMATION REFER TO SPECIFICATION 201-01-148 AND APPLICATION NOTES 201-01-149.
5. COPPER ALLOY, NICKEL UNDERCOAT, GOLD PLATED.
6. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
7. PACKAGING IN TAPE AND REEL, QUANTITY PER REEL 4500.
8. UL REFERENCE E90723 (US AND CANADA).
9. AREA AVAILABLE FOR PICK AND PLACE.
**Single 2 Piece Contacts: 70-9159-BTB**

411 Locking Plug Contact

**70-9159-001-411-006**

LOCKING PLUG CONTACT

---

**NOTES:**
1. 9159 SINGLE CONTACT, SMT MOUNT, PLUG CONTACT. LOCKING FEATURE WILL ASSIST IN MAINTAINING THE POSITION.
2. TO MATE WITH 70-9159-001-402-006 SOCKET CONTACT, REFER TO PAGE 67.
3. TYPICAL APPLICATIONS SEE PAGES 69 AND 70.
4. FOR FURTHER INFORMATION REFER TO SPECIFICATION 201-01-148 AND APPLICATION NOTES 201-01-149.
5. COPPER ALLOY, NICKEL UNDERCOAT, GOLD IN CONTACT AREA. TIN ON SOLDER TAIL.
6. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
7. PACKAGING IN TAPE AND REEL, QUANTITY PER REEL 4500.
8. UL REFERENCE E90723 (US AND CANADA).
9. AREA AVAILABLE FOR PICK AND PLACE.
Single 2 Piece Contacts: 70-9159-BTB
Contact Solder Tolerance

70-9159-001-4XX-006 – CONTACT SOLDER TOLERANCE

STANDARD CONTACT
70-9159-001-401-006 PLUS 70-9159-001-402-006

NOTES:
1. SIMPLE BOARD TO BOARD ASSEMBLY.
2. CONTACTS (70-9159-001-401-006) WILL COPE WITH A GAP BETWEEN BOARDS UP TO 1.00MM AND/OR A SIDEWAY MISALIGNMENT OF UP TO 1.00MM WITHOUT LOSS OF PERFORMANCE. VERTICAL MISALIGNMENT MUST HOWEVER BE KEPT TO WITHIN ±0.05.

LOCKING CONTACT
70-9159-001-411-006 PLUS 70-9159-001-402-006

NOTES:
1. LOCKING BOARD TO BOARD ASSEMBLY.
2. CONTACT LOCKING (70-9159-001-411-006) WILL COPE WITH A GAP BETWEEN BOARDS UP TO 0.30MM WITH THE CONTACTS SOLDERED IN POSITIONS SHOWN THE SIDEWAYS MISALIGNMENT CAN BE UP TO 0.50MM WITHOUT LOSS OF PERFORMANCE. VERTICAL MISALIGNMENT MUST HOWEVER BE KEPT TO WITHIN ±0.05.
3. IF FOR EXAMPLE THE CONTACT PORTIONS ARE CHANGED TO 3.60MM AND 0.90MM RESPECTIVELY.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
NOTES:
1. SIMPLE BOARD TO BOARD LINK.
2. ALL MATING COMBINATIONS PERMISSIBLE. FOR EXAMPLE BY USING ONE PLUG AND ONE SOCKET CONTACT THE BOARD ENDS ARE REVEALABLE.
3. FEATURES CAN BE ADDED TO BOARD ENDS TO RESIST SIDEWAYS MOVEMENT.
NOTES:
1. SIMPLE BUILT UP ASSEMBLY
2. CONTACTS CAN BE USED WITH A SUITABLE PCB DESIGN FOR CUSTOMER BUILT SMALL CABLE ASSEMBLIES.
3. TWO WAY PLUG CONNECTIONS SHOWN BUT ANY COMBINATION POSSIBLE.
One Piece Card Edge
Standard Card Edge: 00-9159-BTB

General Description

The 9159 series of Board-to-Board interconnect system allows two PCB’s to be mated end-to-end creating strips of LED lighting. Designed specifically for the unique Solid State Lighting (SSL) market requiring coplanar (horizontal-to-horizontal) PCB mating. The 1-Piece Card Edge connector was developed to provide a reliable, low cost and simple means of connecting multiple PCB’s together. The single stamped contact has dual contact beams to guarantee a high contact force on standard 1.6mm PCB’s. These connectors are available in 2 through 5 positions and are on 2.0mm pitch centers to provide a 3 amp continuous rating.

APPLICATIONS
- Coplanar PCB mating in SSL products
- LED linear lighting strips

FEATURES AND BENEFITS
- Dual contacts provide positive contact force for enhanced reliability
- Mates with standard 1.6 ± 0.15mm PCB on 2.0mm pad pitch
- 3 amp current rating for high current applications
- Available in white: supports SSL market preferences

ELECTRICAL
- Current Rating: 3 Amps / Contact
- Voltage Rating: 300 VAC

ENVIRONMENTAL
- Operating Temperature: -40°C to +125°C

MECHANICAL
- Insulator Material: Nylon 46: UL94HB
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 5 Cycles

HOW TO ORDER

Prefix  | Series  | No of Ways | Number of Ways | PCB Thickness | Color Options | Packaging Options | Plating Option |
--- | --- | --- | --- | --- | --- | --- | --- |
00 | 9159 | 00X | 0 | 01 | 9 | 1 | X

- Single Part PCB Strip Connector
- 01 = 1.60 ± 0.15
- Color Options: 9 = UL
- Packaging Options: 1 = Bag (std)
- Plating Option: 6 = Pure Tin all over
- 1 = Gold Flash

Certification: UL File #E90723

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2 WAY SINGLE PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-118.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
3. ARROW TO INDICATE CONTACT POSITION 1.
4. INSULATOR MATERIAL: NYLON 46, UL94 HB, COLOR SEE PAGE 72.
5. CONTACT MATERIAL: COPPER ALLOY, TIN PLATED ALL OVER, OR GOLD FLASH OVER TIN.
6. PCB PAD, TIN PLATED.

PACKING DETAILS

| REEL QTY | 750  |
| LEADER   | 500MM |
| TRAILER  | 500MM |
| REEL PER BOX | TBC |

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3 WAY SINGLE PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-118.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
3. ARROW TO INDICATE CONTACT POSITION 1.
4. INSULATOR MATERIAL: NYLON 46, UL94 HB, COLOR SEE PAGE 72.
5. CONTACT MATERIAL: COPPER ALLOY, TIN PLATED ALL OVER, OR GOLD FLASH OVER TIN.
6. PCB PAD, TIN PLATED.

PACKING DETAILS

| REEL QTY | 750 |
| LEADER  | 500MM |
| TRAILER | 500MM |
| REEL PER BOX | TBC |

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NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-118.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
3. ARROW TO INDICATE CONTACT POSITION 1.
4. INSULATOR MATERIAL: NYLON 46, UL94 HB, COLOR SEE PAGE 72.
5. CONTACT MATERIAL: COPPER ALLOY, TIN PLATED ALL OVER, OR GOLD FLASH OVER TIN.
6. PCB PAD, TIN PLATED.

PACKING DETAILS

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<th>750</th>
</tr>
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<tbody>
<tr>
<td>LEADER</td>
<td>500MM</td>
</tr>
<tr>
<td>TRAILER</td>
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<td>REEL PER BOX</td>
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Standard Card Edge: 00-9159-BTB

5 Position

5 WAY SINGLE PART PCB STRIP CONNECTOR

NOTES:
1. FOR MORE INFORMATION REFER TO PRODUCT SPEC 201-01-118.
2. DIMENSIONS ARE REFERENCE DIMENSIONS UNLESS TOLERANCED.
3. ARROW TO INDICATE CONTACT POSITION 1.
4. INSULATOR MATERIAL: NYLON 46, UL94 HB, COLOR SEE PAGE 72.
5. CONTACT MATERIAL: COPPER ALLOY, TIN PLATED ALL OVER, OR GOLD FLASH OVER TIN.
6. PCB PAD, TIN PLATED.

5 WAY PCB BOARD LAYOUT

PACKING DETAILS

REEL QTY 750
LEADER 500MM
TRAILER 500MM
REEL PER BOX TBC

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Open Ended Card Edge: 00-9159-BTB

General Description

KYOCERA AVX was challenged with increasing the pin count density as well as minimizing the size of the existing coplanar BTB card edge connector for linear strip lighting. The current product is a 2.0mm with single contacts that straddle the PCB to make electrical connection on both the top and bottom side of the board. By simply changing the contacts to a double sided configuration (separate contacts for both the top and bottom of the PCB), KYOCERA AVX was able to double the pin count in the same 2.0mm pitch with minimal to no impact on the electrical performance of the connector. Reducing the size of the connector required a complete new design as the target was a 4p connector with a total length of 4.0mm. To achieve this, KYOCERA AVX removed the end walls and then added a center support/keying rib to pre-align the PCB during mating. This rib then holds the PCB in the proper functional location.

The new family of connectors is available with contact sizes of 4, 6, 8 and 10 positions, doubling the current products range. The current rating will be 3A for the 4p and 6p, and then drop to 2.5A for the 8p and 10p connector. The connector supports the standard 1.6mm PCB thickness.

This new connector provides the highest density to reliably connect two in-line PCB's together in the most cost effective assembled solution. More importantly, the increased pin count allows for more flexibility in mixing and matching power and signal lines.

APPLICATIONS

- Linear LED strip lighting
- Commercial/Industrial co-planar or extended card applications
- Reference Product Specification 201-01-144

FEATURES AND BENEFITS

- Miniaturized size, achieves 1.0mm in length for each number of contacts (4p = 4.0mm)
- Double Ended/Double Sided contacts for increased pin count density on standard 1.6mm thick PCB's
- Central polarizing/location rib assures proper mating and PCB location
- High current capabilities: 3A; 4p/6p and 2.5A; 8p/10p
- Economical high force Tin-to-Tin contact interface

ELECTRICAL

- Current Rating: 3.0 amps 4p/6p and 2.5 amps 8p/10p
- Voltage Rating: 300 VAC

ENVIRONMENTAL

- Operating Temperature: -40ºC to +125ºC

MECHANICAL

- Insulator Material: Nylon 46: UL94VO
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 5 Cycles

HOW TO ORDER

00 9159 00X 0 X 61 X

- Prefix
- Series
- Number of Ways
- Single Part PCB Strip Connector
- PCB Thickness 1.6-±0.10
- Color Options
- Packaging Options
- Plating Option

Certification: UL File #E90723
**Open Ended Card Edge: 00-9159-BTB**

**4 Position**

**4 WAY SINGLE PART PCB STRIP CONNECTOR – OPEN ENDED**

**NOTES:**
1. INSULATOR MATERIAL NYLON 46, UL94 V-0. COLOR REFER TO PAGE 77.
2. CONTACT MATERIAL COPPER ALLOY, TIN PLATED
3. PARTS TO BE SUPPLIED IN BAGS, 1000 PIECES PER BAG.
4. GENERAL TOLERANCE ±0.20MM UNLESS STATED.
5. ARROW ADJACENT TO CONTACT POSITION 1.
6. PCB PAD, TIN PLATED OR TIN PLATED WITH GOLD FLASH.
7. FURTHER DETAILS REFER TO ELCO SPECIFICATION 20T-01-144.

**SUGGESTED PCB LAYOUT**

PADS THE SAME UPPER AND LOWER FACES

PCB THICKNESS 1.60±0.10MM (OVER PADS)
Open Ended Card Edge: 00-9159-BTB

6 Position

6 WAY SINGLE PART PCB STRIP CONNECTOR – OPEN ENDED

NOTES:
1. INSULATOR MATERIAL NYLON 46, UL94 V-0.
   COLOR REFER TO PAGE 77.
2. CONTACT MATERIAL COPPER ALLOY, TIN PLATED
3. PARTS TO BE SUPPLIED IN BAGS, 1000 PIECES PER BAG.
4. GENERAL TOLERANCE ±0.20MM UNLESS STATED.
5. ARROW ADJACENT TO CONTACT POSITION 1.
6. PCB PAD, TIN PLATED OR TIN PLATED WITH GOLD FLASH.
7. FURTHER DETAILS REFER TO ELCO SPECIFICATION 201-01-144.

SUGGESTED PCB LAYOUT
PADS THE SAME UPPER AND LOWER FACES
PCB THICKNESS 1.60±0.10MM (OVER PADS)

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
Open Ended Card Edge: 00-9159-BTB

8 Position

8 WAY SINGLE PART PCB STRIP CONNECTOR – OPEN ENDED

NOTES:
1. INSULATOR MATERIAL NYLON 46, UL94 V-0. COLOR REFER TO PAGE 77.
2. CONTACT MATERIAL COPPER ALLOY, TIN PLATED
3. PARTS TO BE SUPPLIED IN BAGS, 1000 PIECES PER BAG.
4. GENERAL TOLERANCE ±0.20MM UNLESS STATED.
5. ARROW ADJACENT TO CONTACT POSITION 1.
6. PCB PAD, TIN PLATED OR TIN PLATED WITH GOLD FLASH.
7. FURTHER DETAILS REFER TO ELCO SPECIFICATION 201-01-144.

SUGGESTED PCB LAYOUT
PADS THE SAME UPPER AND LOWER FACES
PCB THICKNESS 1.60±0.10MM (OVER PADS)
Open Ended Card Edge: 00-9159-BTB
10 Position

10 WAY SINGLE PART PCB STRIP CONNECTOR – OPEN ENDED

NOTES:
1. INSULATOR MATERIAL NYLON 46, UL94 V-0.
   COLOR REFER TO PAGE 77.
2. CONTACT MATERIAL COPPER ALLOY, TIN PLATED.
3. PARTS TO BE SUPPLIED IN BAGS, 1000 PIECES PER BAG.
4. GENERAL TOLERANCE ±0.20MM UNLESS STATED.
5. ARROW ADJACENT TO CONTACT POSITION 1.
6. PCB PAD, TIN PLATED OR TIN PLATED WITH GOLD FLASH.
7. FURTHER DETAILS REFER TO ELCO SPECIFICATION 201-01-144.

SUGGESTED PCB LAYOUT
PADS THE SAME UPPER AND LOWER FACES
PCB THICKNESS 1.60±0.10MM (OVER PADS)
Inverted Thru Board Card Edge: 00-9159-BTB

General Description

KYOCERA AVX has developed the 1-Piece bottom entry card edge connector to allow a perpendicular PCB to be mated to a top mounted main FR4 or metal core PCB from the bottom side. The most popular application on the market is in the LED bulb market where the FR4 driver card needs to mate to the top pads on a metal core LED board. A unique design feature of the KYOCERA AVX connector is that it allows for both a 1.6mm and 0.8mm mating PCB thickness, giving designers flexibility in their PCB layout and selection. The additional “Anti-Touch” cap can be ordered pre-assembled onto the connector or separately. This component protects an individual for electrical contact if the lens comes off or the bulb is broken. This is a UL mandated safety requirement.

The connectors offer a range of 2 positions to 6 positions in order to add additional functionality in the application design such as color control or specific control lines. The connector is UL rated with halogen free material and capable of operating temperatures up to 120ºC.

APPLICATIONS

- Provides perpendicular, bottom entry PCB mating to a top mounted card edge contact based connector
- Reference application notes 201-01-137
- Reference Product Specification 201-01-132UL

FEATURES AND BENEFITS

- Available 2p-6p for added design functionality and color control in bulb applications
- Low profile top mounted design does not interfere with LED's
- Gold plated BeCu contact system for high reliability in harsh environments
- Accepts both 0.8mm and 1.6mm PCB’s for added design options

ELECTRICAL

- Current Rating: 2 Amps / Contact
- Voltage Rating: 300 VAC

ENVIRONMENTAL

- Operating Temperature: -40ºC to +125ºC

MECHANICAL

- Insulator Material: Halogen Free Nylon UL94VO
- Contact Material: Beryllium Copper
- Plating: Gold / Tin over Nickel
- Durability 10 Cycles

HOW TO ORDER

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Certification: UL File #E90723
Inverted Thru Board Card Edge: 00-9159-BTB

2 Position

2 WAY THROUGH THE BOARD MATING EDGE CARD CONNECTOR

NOTES:
1. THROUGH THE BOARD 2 WAY EDGE CARD CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK. REFER TO PAGE 88 FOR MATING PCB DETAILS.
3. CONNECTOR TOP MOUNTING ON PCB.
4. UP TO 0.5MM RAD TO MATCH CONNECTOR PROFILE.
5. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
6. INSULATOR: PAR4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR SEE PAGE 82.
7. CONTACT: COPPER ALLOW, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
8. BRACKET: COPPER ALLOY, PLATING TIN OVER NICKEL.
9. PACKING IN TAPE AND REEL, 1000 PIECES PER REEL.
10. CONTACT TAILS COPLINAIRTY WITHIN 0.10.
11. REFER TO PAGE 91 FOR MATCHING PROTECTING CAP.
12. UL REFERENCE E90723.
Inverted Thru Board Card Edge: 00-9159-BTB
3 Position

3 WAY THROUGH THE BOARD MATING EDGE CARD CONNECTOR

NOTES:
1. THROUGH THE BOARD 3 WAY EDGE CARD CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK. REFER TO PAGE 88 FOR MATING PCB DETAILS.
3. CONNECTOR TOP MOUNTING ON PCB.
4. UP TO 0.5MM RAD TO MATCH CONNECTOR PROFILE.
5. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
6. INSULATOR: PAR4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR SEE PAGE 82.
7. CONTACT: COPPER ALLOW, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
8. BRACKET: COPPER ALLOY, PLATING TIN OVER NICKEL.
9. PACKING IN TAPE AND REEL, 1000 PIECES PER REEL.
10. CONTACT TAILS COPLANARITY WITHIN 0.10.
11. REFER TO PAGE 91 FOR MATCHING PROTECTING CAP.
12. UL REFERENCE E90723.

PACKING DETAILS

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
NOTES:
1. THROUGH THE BOARD 4 WAY EDGE CARD CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK. REFER TO PAGE 88 FOR MATING PCB DETAILS.
3. CONNECTOR TOP MOUNTING ON PCB.
4. UP TO 0.5MM RAD TO MATCH CONNECTOR PROFILE.
5. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
6. INSULATOR: PAR4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR SEE PAGE 82.
7. CONTACT: COPPER ALLOW, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
8. BRACKET: COPPER ALLOY, PLATING TIN OVER NICKEL.
9. PACKING IN TAPE AND REEL, 1000 PIECES PER REEL.
10. CONTACT TAILS COPLANARITY WITHIN 0.10.
11. REFER TO PAGE 91 FOR MATCHING PROTECTING CAP.
12. UL REFERENCE E90723.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
**Inverted Thru Board Card Edge: 00-9159-BTB**

5 Position

---

**5 WAY THROUGH THE BOARD MATING EDGE CARD CONNECTOR**

---

**MOUNTING PCB (TOP SIDE)**

---

**PACKING DETAILS**

---

NOTES:
1. THROUGH THE BOARD 5 WAY EDGE CARD CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK. REFER TO PAGE 88 FOR MATING PCB DETAILS.
3. CONNECTOR TOP MOUNTING ON PCB.
4. UP TO 0.5MM RAD TO MATCH CONNECTOR PROFILE.
5. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
6. INSULATOR: PAR4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR SEE PAGE 82.
7. CONTACT: COPPER ALLOW, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
8. BRACKET: COPPER ALLOY, PLATING TIN OVER NICKEL.
9. PACKING IN TAPE AND REEL, 1000 PIECES PER REEL.
10. CONTACT TAILS COPLINARITY WITHIN 0.10.
11. REFER TO PAGE 91 FOR MATCHING PROTECTING CAP.
12. UL REFERENCE E90723.

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Kyocera AVX
Inverted Thru Board Card Edge: 00-9159-BTB

6 Position

6 WAY THROUGH THE BOARD MATING EDGE CARD CONNECTOR

MOUNTING PCB
(TOP SIDE)

PACKING DETAILS

NOTES:
1. THROUGH THE BOARD 6 WAY EDGE CARD CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK. REFER TO PAGE 88 FOR MATING PCB DETAILS.
3. CONNECTOR TOP MOUNTING ON PCB.
4. UP TO 0.5MM RAD TO MATCH CONNECTOR PROFILE.
5. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
6. INSULATOR: PAR4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR SEE PAGE 82.
7. CONTACT: COPPER ALLOW, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
8. BRACKET: COPPER ALLOY, PLATING TIN OVER NICKEL.
9. PACKING IN TAPE AND REEL, 1000 PIECES PER REEL.
10. CONTACT TAILS COPLINARITY WITHIN 0.10.
11. REFER TO PAGE 91 FOR MATCHING PROTECTING CAP.
12. UL REFERENCE E90723.

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Inverted Thru Board Card Edge: 00-9159-BTB
Thru Board Mating Edge Card Connector – With Cap

THROUGH THE BOARD MATING EDGE CARD CONNECTOR – WITH CAP
00-9159-00X-502-X06

NOTES:
1. 00-9159-00X-501-X06 WITH CAP SUPPLIED FITTED.
2. DRAWINGS SHOW OUTLINE DIMENSIONS OF THE 00-9159-00X-502-X06 ASSEMBLIES. ALL OTHER DETAILS ARE AS 00-9159-00X-501-X06 ON PAGES 83-87.
3. GENERAL TOLERANCE ±0.20.
4. PACKING ORIENTATION.
5. UL REFERENCE E90723.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
NOTES:
1. CORRECT DIMENSIONS FOR EITHER 0.80MM OR 1.60MM PCB THICKNESS MUST BE USED.
2. THICKNESS OF PCB INCLUDES ALL LAYERS INCLUDING COPPER AND PLATING.
3. PADS TO BE PLATED GOLD OVER NICKEL UNDERCOAT.
4. GENERAL TOLERANCE ±0.10 UNLESS STATED.

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Inverted Thru Board Card Edge: 00-9159-BTB

Assembly

THROUGH THE BOARD MATING EDGE CARD CONNECTOR

CONNECTOR/PCB ASSEMBLY
0.8MM MATING PCB
NO CAP

CONNECTOR/PCB ASSEMBLY
1.6MM MATING PCB
WITH CAP

NOTES:
1. THROUGH THE BOARD EDGE CARD CONNECTOR.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK. REFER TO PAGE 88 FOR MATING PCB DETAILS.
3. CONNECTOR TOP MOUNTING ON PCB.
4. PAD DETAILS ON THE MATING PCB ALLOW CONTACT TO BE MADE IN ANY POSITION FROM THE STOP
   FACE UP TO 1MM FROM THE STOP FACE.
5. GENERAL TOLERANCE ±0.20 UNLESS STATED.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available
online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
ACCESSORY – PROTECTING CAP

2 WAY
60-9159-3502-09-000

3 WAY
60-9159-3503-09-000

4 WAY
60-9159-3504-09-000

5 WAY
60-9159-3505-09-000

6 WAY
60-9159-3506-09-000

NOTES:
1. PROTECTING CAP ACCESSORY, NOT SUPPLIED WITH CONNECTOR.
2. CLIPS TO TOP OF CONNECTOR TO COVER ALL METAL COMPONENTS.
3. MATERIAL: PA4T, GLASS FILLED, HALOGEN FREE, UL94 V-0. COLOR CODE REFER TO PAGE 82, "X" IN PART NUMBER.
4. SUPPLIED IN BAGS OF 100 PIECES.
5. GENERAL TOLERANCE ±0.20.
6. UL REFERENCE E90723.

ASSEMBLED CAP
KYOCERA AVX continues to develop unique connectors to fill the gap in the industrial market, specifically as it relates to low pin count requirements. The newest addition to KYOCERA AVX’s broadening line of one piece card edge connectors is the 2p-6p top entry version which complements the bottom entry version released last year. This new configuration will allow small perpendicular daughter cards to be plugged in from the top side of the main board. The single connector option offers an alternative to the more traditional and costly two piece solution.

This small connector is packed with several key features that provide significant functionality in a broad range of robust industrial applications. The contact system is gold plated for enhanced reliability, signal integrity and full 2A/contact current rating. The PCB board opening is dual slotted to accept either a 0.8mm or 1.6mm thick daughter card within the same connector body.

APPLICATIONS
• Provides a one piece connector solution for low pin count perpendicular PCB mating in industrial applications
• Facilitates easy plug ability for small module/programming cards

FEATURES AND BENEFITS
• Amp per contact current rating meets robust industrial application requirements
• Removable pick and place cap supports robotic placement and SMT termination
• Gold plated BeCu contact system for high reliability in harsh environments
• Accepts both 0.8mm and 1.6mm PCB's for added design options

ELECTRICAL
• Current Rating: 2 Amps / Contact
• Voltage Rating: 300 VAC

ENVIRONMENTAL
• Operating Temperature: -40°C to +125°C

MECHANICAL
• Insulator Material: Nylon UL94VO
• Contact Material: Beryllium Copper
• Plating: Gold / Tin over Nickel
• Durability 10 Cycles

HOW TO ORDER

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00 9159 00X 9 551
Prefix Series Number of Ways Insulator Color Packaging Options
06 = Gold Plating on Nos with Tin on Tails
9 = White UL Approved Standard

Certification: UL File #E90723

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
2 WAY TOP MOUNTING EDGE CARD CONNECTOR

SUGGESTED PCB LAYOUT

PACKING DETAILS

NOTES:
1. 5159-500 SERIES TOP MOUNTING EDGE CARD CONNECTOR, 1 WAY. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136 AND APPLICATION NOTES 201-01-137.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK PCB. (DETAILS SAME AS 9159-500), REFER TO PAGE 98.
3. CONNECTOR OUTLINE
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
5. INSULATOR: PA4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR REFER TO PAGE 92.
6. CONTACT: COPPER ALLOY, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
7. BRACKET: COPPER ALLOY, PLATING, TIN OVER NICKEL.
8. PACKING IN TAPE AND REEL, 900 PIECES PER REEL.
9. CONTACT TAILS COPLANARITY WITHIN 0.10.
10. UL PRODUCT REFERENCE E90723 (US AND CANADA).
3 WAY TOP MOUNTING EDGE CARD CONNECTOR

1. 5159-500 SERIES TOP MOUNTING EDGE CARD CONNECTOR, 3 WAY. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136 AND APPLICATION NOTES 201-01-137.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK PCB. (DETAILS SAME AS 9159-500), REFER TO PAGE 98.
3. CONNECTOR OUTLINE.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
5. INSULATOR: PA6T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR REFER TO PAGE 92.
6. CONTACT: COPPER ALLOY, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
7. BRACKET: COPPER ALLOY, PLATING, TIN OVER NICKEL.
8. PACKING IN TAPE AND REEL, 900 PIECES PER REEL.
9. CONTACT TAILS COPLANARITY WITHIN 0.10.
10. UL PRODUCT REFERENCE E90723 (US AND CANADA).
1. 5159-500 SERIES TOP MOUNTING EDGE CARD CONNECTOR, 1 WAY. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136 AND APPLICATION NOTES 201-01-137.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK PCB. (DETAILS SAME AS 9159-500), REFER TO PAGE 98.
3. CONNECTOR OUTLINE.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
5. INSULATOR: PA4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR REFER TO PAGE 92.
6. CONTACT: COPPER ALLOY, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
7. BRACKET: COPPER ALLOY, PLATING, TIN OVER NICKEL.
8. PACKING IN TAPE AND REEL, 900 PIECES PER REEL. CONTACT TAILS COPLANARITY WITHIN 0.10.
9. UL PRODUCT REFERENCE E90723 (US AND CANADA).
1. 5159-500 SERIES TOP MOUNTING EDGE CARD CONNECTOR, 5 WAY. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136 AND APPLICATION NOTES 201-01-137.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK PCB. (DETAILS SAME AS 9159-500), REFER TO PAGE 98.
3. CONNECTOR OUTLINE.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
5. INSULATOR: PA4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR REFER TO PAGE 92.
6. CONTACT: COPPER ALLOY, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
7. BRACKET: COPPER ALLOY, PLATING, TIN OVER NICKEL.
8. PACKING IN TAPE AND REEL, 900 PIECES PER REEL.
9. CONTACT TAILS COPLANARITY WITHIN 0.10.
10. UL PRODUCT REFERENCE E90723 (US AND CANADA).
1. 5159-500 SERIES TOP MOUNTING EDGE CARD CONNECTOR, 6 WAY. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-136 AND APPLICATION NOTES 201-01-137.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK PCB. (DETAILS SAME AS 9159-500), REFER TO PAGE 98.
3. CONNECTOR OUTLINE.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
5. INSULATOR: PA4T, GLASS FILLED, HALOGEN FREE, UL94 V-0, COLOR REFER TO PAGE 92.
6. CONTACT: COPPER ALLOY, NICKEL PLATED WITH GOLD FLASH ON NOSE AND TIN ON TAILS.
7. BRACKET: COPPER ALLOY, PLATING, TIN OVER NICKEL.
8. PACKING IN TAPE AND REEL, 900 PIECES PER REEL.
9. CONTACT TAILS COPLANARITY WITHIN 0.10.
10. UL PRODUCT REFERENCE E90723 (US AND CANADA).
NOTES:
1. CORRECT DIMENSION FOR EITHER 0.80MM OR 1.60MM PCB THICKNESS MUST BE USED.
2. THICKNESS OF PCB INCLUDES ALL LAYERS INCLUDING COPPER AND PLATING.
3. PADS TO BE PLATED GOLD OVER NICKEL UNDERCOAT.
4. GENERAL TOLERANCE ±0.10 UNLESS STATED.
TOP MOUNTING EDGE CARD CONNECTOR ASSEMBLY

NOTES:
1. 9159-500 SERIES TOP MOUNTING EDGE CARD CONNECTOR.
2. FOR MATING PCB EITHER 0.8MM OR 1.6MM THICK. REFER TO PAGE 98 FOR MATING PCB DETAILS.
3. CONNECTOR SURFACE MOUNTING ON PCB.
4. PAD DETAILS ON THE MATING PCB ALLOW CONTACT TO BE MADE IN ANY POSITION FORM THE STOP FACE UP TO 1MM FROM THE STOP FACE.
5. GENERAL TOLERANCE ±0.20 UNLESS STATED.
GENERAL DESCRIPTION
KYOCERA AVX Interconnect continues to develop unique connectors to fill the gap in the market. The newest addition to KYOCERA AVX's broadening line of one piece card edge connectors is the 4p-12p dual row top entry version 9159-650, which is extension of popular single row version 9159-550. This new configuration with staggered dual row contacts will allow doubled number of positions in similar size of the connector. Available in both without and with polarization where the mating PCB layout is modified to form a key, to avoid wrong insertion to the connector. This small connector is packed with several key features that provide significant functionality in a broad range of applications. The proven contact system is gold plated for enhanced reliability, signal integrity and full 2.5A/contact current rating. The connector is designed for mating PCB board with 1.6mm thickness and gold plated pads.

APPLICATIONS
Provides a one piece connector solution for perpendicular PCB mating in applications:
- Automotive
- Industrial
- Lighting

FEATURES AND BENEFITS
- 2.5 Amps per contact current rating meets robust application requirements
- Doubled number of positions with dual row solution
- Optional kapton tape version supports pick and place robotic placement and SMT termination
- Available version with polarization where the mating PCB layout is modified to form a key, to avoid error during insertion
- Gold plated BeCu contact system for high reliability in harsh environments

HOW TO ORDER

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Plating Options
- 6 = Gold plating on nose with Tin on Tails

Keying
- 0 = without keying
- 1 = with keying

Insulator Color
- 9 = White

Double Sided Thru Board Card Edge
- 651 = with Kapton Tape
- 653 = without Kapton Tape

ELECTRICAL

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ENVIRONMENTAL

| Operating Temperature | -40°C to +125°C |

MECHANICAL

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<th>Insulator Material</th>
<th>High temperature Nylon UL94V-0 rated</th>
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<td>Contact Material</td>
<td>Beryllium Copper</td>
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<tr>
<td>Durability</td>
<td>10 Cycles</td>
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<tr>
<td>Plating</td>
<td>Gold / Tin over Nickel</td>
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# Vertical Dual Row Top Entry Card Edge

## 9159-650

### 00 9159 0XX 65X 906

## Dimensions

<table>
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Vertical Dual Row Top Entry Card Edge

9159-650

NOTES:
1. FOR FURTHER DETAILS, REFER TO KYOCERA AVX SPECIFICATION 20-01-226 AND APPLICATION NOTES 201-01-227.
2. HOUSING MATERIAL: GLASS-FILLED, HIGH TEMPERATURE NYLON; FLAME RETARDANT PER UL94V-0; COLOR: NATURAL.
3. CONTACT MATERIAL: HIGH STRENGTH COPPER ALLOY.
4. CONTACT PLATING: NICKEL UNDERPLATE ALL OVER; GOLD FLASH IN CONTACT AREA; LEAD-FREE MATTE TIN ON TAILS.
5. CONTACT TAIL CO-PLANARITY TO BE WITHIN 0.10 mm.
6. MATING PCB THICKNESS TO INCLUDE COPPER AND PLATING.
7. UL APPROVED (US AND CANADA) UL REFERENCE E90723.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
### DIMENSIONS

<table>
<thead>
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Vertical Dual Row Top Entry Card Edge
9159-650

105

RECOMMENDED PC BOARD LAYOUT

NOTES:
1. FOR FURTHER DETAILS, REFER TO KYOCERA AVX SPECIFICATION 201-01-226 AND APPLICATION NOTES 201-01-227.
2. HOUSING MATERIAL: GLASS-FILLED, HIGH TEMPERATURE NYLON; FLAME RETARDANT PER UL94V-0; COLOR: NATURAL.
3. CONTACT MATERIAL: HIGH STRENGTH COPPER ALLOY.
4. CONTACT PLATING: NICKEL UNDERPLATE ALL OVER; GOLD FLASH IN CONTACT AREA; LEAD-FREE MATTE TIN ON TAILS.
5. CONTACT TAIL CO-PLANARITY TO BE WITHIN 0.10 mm.
6. MATING PCB THICKNESS TO INCLUDE COPPER AND PLATING.
7. UL APPROVED (US AND CANADA); UL REFERENCE E90723.
**GENERAL DESCRIPTION**

KYOCERA AVX Interconnect continues to develop unique connectors to fill the gap in the market. The newest addition to KYOCERA AVX’s broadening line of one piece card edge connectors is the 4p-12p Dual Row Inverted version 9159-650, which is extension of popular single row version 9159-500. This new configuration with staggered dual row contacts will allow doubled number of positions in similar size of the connector.

This small connector is packed with several key features that provide significant functionality in a broad range of applications. The proven contact system is gold plated for enhanced reliability, signal integrity and full 2.5A/contact current rating. The connector is designed for mating PCB board with 1.6mm thickness and gold plated pads.

**APPLICATIONS**

Provides a one piece connector solution for perpendicular PCB mating in applications:

- Automotive
- Industrial
- Lighting

**FEATURES AND BENEFITS**

- 2.5 Amps per contact current rating meets robust application requirements
- Doubled number of positions with dual row solution
- Gold plated BeCu contact system for high reliability in harsh environments
- Low profile thru board design does not interfere with Led’s etc.

**HOW TO ORDER**

Prefix | Series | No. of Ways | Code | Size | Contact
---|---|---|---|---|---
00 | 9159 | 0XX | 601 | 9 | 6

Plating Options
- 6 = Gold plating on nos with Tin on Tails

Insulator Color
- Code | Color | Application
---|---|---
9 | White | UL Approved Standard

**ELECTRICAL**

- Current Rating: 2.5 Amps / Contact
- Voltage Rating: 300 VAC

**ENVIRONMENTAL**

- Operating Temperature: -40°C to +125°C

**MECHANICAL**

- Insulator Material: High temperature Nylon UL94V-0 rated
- Contact Material: Beryllium Copper
- Durability: 10 Cycles
- Plating: Gold / Tin over Nickel
Dual Row Inverted Thru Board Card Edge
9159-600

DIMENSIONS

<table>
<thead>
<tr>
<th></th>
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<td>5.00</td>
<td>1.50</td>
<td>4.80</td>
<td>7.20</td>
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<td>3.50</td>
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<td>00-9159-010-601-906</td>
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<td>5.50</td>
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<td>15.20</td>
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107
Dual Row Inverted Thru Board Card Edge
9159-600

00 9159 0XX 601 906

NOTES:
1. HOUSING MATERIAL: GLASS-FILLED, HIGH TEMPERATURE NYLON; FLAME RETARDANT PER UL94V-0; COLOR: NATURAL.
2. CONTACT MATERIAL: HIGH STRENGTH COPPER ALLOY.
3. CONTACT PLATING: NICKEL UNDERPLATE ALL OVER; GOLD FLASH IN CONTACT AREA; LEAD-FREE MATTE TIN ON TAILS.
4. CONTACT TAIL CO-PLANARITY TO BE WITHIN 0.10 mm.
5. MATING PCB THICKNESS TO INCLUDED COPPER AND PLATING.
6. PACKAGING TO BE IN POCKET TAPE ON REELS PER EIA-481 WITH 700 PARTS PER REEL.
One Piece Compression
Ultra-Low Profile 2.5mm Pitch Battery-9155-100

General Description

KYOCERA AVX has been leading the industry with reliable Board-to-Board (BTB) compression connectors for commercial, medical and harsh industrial applications, obtaining the very first contact patent in the early 1990’s. The broad range of connectors offers both signal contacts which support 1 Amp/contact up to 40 position as well as low pin count (LPC) power contacts up to 3 Amps/contact.

The newest addition is the Ultra Low Profile (ULP) power connector that supports a 1.3mm compressed height, the lowest on the market. Gold plated Beryllium Copper (BeCu) contacts offers the most reliable and resilient contact performance in this miniature package. The sweeping contact design offers 0.7mm deflection range, long contact wipe and in excess of 40 grams of contact force at minimum operating deflection. All combined, this connector is rated at an unbelievable 5000 mating cycles for mechanical endurance.

APPLICATIONS FEATURES AND BENEFITS

- Low profile power, signal, ground or shielding requirements
- Repeatable/Pluggable module or battery pack requirements
- Low profile flex circuit to PCB applications
- Portable devices

- High Reliability / High Cycle Life BeCu contacts for maximum system performance
- ULP 1.3mm minimum operating height with 0.7mm "Z" axis compression/tolerance range
- Gold plating supports a broad range applications based on reliability and environments
- 3 Amp contact rating over a -40°C to +105°C operating range supports a broad application spectrum

ELECTRICAL

- Current Rating: 3 Amps/Contact
- Voltage Rating: 125VAC

ENVIRONMENTAL

- Operating Temperature: -40°C to +125°C

MECHANICAL

- Insulator Material: Glass-Filled Nylon 46; UL94 V-0
- Contact Material: Beryllium Copper
- Plating: Gold over Nickel
- Durability: 5000 Cycles

HOW TO ORDER

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Operating Height</th>
</tr>
</thead>
<tbody>
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<td>Low Profile Battery Connector No Stop</td>
<td>1.30 (0.051)</td>
</tr>
<tr>
<td>101</td>
<td>Low Profile Battery Connector Stop</td>
<td>1.30 (0.051)</td>
</tr>
</tbody>
</table>

Code Description

- 006: 0.4μm Selective Gold, Standard
- 008: 0.8μm Selective Gold, Special Order

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer by reference and should be reviewed in full before placing any order.
Ultra-Low Profile 2.5mm Pitch Battery-9155-100
2 Position – No Stop

2 WAY LOW PROFILE CONNECTOR
NO STOP

SECTION A-A
CONTACT UNDEFLUCTED

CONTACT SHOWN WITH STOP
RESTING ON PCB

PACKING DETAILS
REEL QTY 1500
LEADER 500MM
TRAILER 500MM

SUGGESTED PCB LAYOUT

NOTES:
1. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPECIFICATION 201-01-094.
2. MATERIALS: CONTACT - COPPER ALLOY,
   INSULATOR - GLASS FILLED NYLON. COLOR: BLACK.
3. TOLERANCE ±0.20 UNLESS SPECIFIED.
4. PACKING DETAILS SEE TABLE.
5. FOR MATING PAD DETAILS REFER TO PAGE 105.
Ultra-Low Profile 2.5mm Pitch Battery-9155-100
3 Position – No Stop

3 WAY LOW PROFILE CONNECTOR
NO STOP

SECTION A-A
CONTACT UNDEFFECTED

CONTACT SHOWN WITH STOP
RESTING ON PCB

PACKING DETAILS

| REEL QTY | 1200 |
| LEADER  | 500MM |
| TRAILER  | 500MM |

NOTES:
1. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPECIFICATION 201-01-094.
2. MATERIALS: CONTACT - COPPER ALLOY, INSULATOR - GLASS FILLED NYLON. COLOR: BLACK.
3. TOLERANCE ±0.20 UNLESS SPECIFIED.
4. PACKING DETAILS SEE TABLE.
5. 2 EQUAL PITCHES @ 2.50 = 5.00.
6. FOR MATING PAD DETAILS REFER TO PAGE 105.

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Ultra-Low Profile 2.5mm Pitch Battery-9155-100

2 Position – With Stop

2 WAY LOW PROFILE CONNECTOR
WITH STOP

SECTION A-A
CONTACT UNDEFLECTED

CONTACT SHOWN WITH STOP
RESTING ON PCB

PACKING DETAILS

<table>
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<th>REEL QTY</th>
<th>LEADER</th>
<th>TRAILER</th>
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<td>500MM</td>
<td>500MM</td>
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NOTES:
1. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO
   SPECIFICATION 201-01-094.
2. MATERIALS: CONTACT - COPPER ALLOY,
   INSULATOR - GLASS FILLED NYLON. COLOR: BLACK.
3. TOLERANCE ±0.20 UNLESS SPECIFIED.
4. PACKING DETAILS SEE TABLE.
5. FOR MATING PAD DETAILS REFER TO PAGE 105.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
3 WAY LOW PROFILE CONNECTOR
WITH STOP

SECTION A-A
CONTACT UNDEFLECTED

CONTACT SHOWN WITH STOP
RESTING ON PCB

PACKING DETAILS
REEL QTY 1200
LEADER 500MM
TRAILER 500MM

SUGGESTED PCB LAYOUT

NOTES:
1. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPECIFICATION 201-01-094.
2. MATERIALS: CONTACT - COPPER ALLOY,
   INSULATOR - GLASS FILLED NYLON. COLOR: BLACK.
3. TOLERANCE ±0.20 UNLESS SPECIFIED.
4. PACKING DETAILS SEE TABLE.
5. 2 EQUAL PITCHES @ 2.50 = 5.00.
6. FOR MATING PAD DETAILS REFER TO PAGE 105.

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Ultra-Low Profile 2.5mm Pitch Battery-9155-100
Low Profile Mating Pads

**LOW PROFILE MATING PADS**

1. **NOTES:**
   1. SUGGESTED MATING PADS FOR LOW PROFILE BATTERY CONNECTORS.
   2. OUTLINE OF CONNECTOR.
   3. PREFERRED PLATING ON PADS GOLD OVER NICKEL.
   4. REFERENCE DIMENSIONS.
   5. DIMENSION TO EDGE OF BOARD FOR CONNECTORS WITH STOP.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
Low Profile Single Contact-70-9155

General Description

Designers for ruggedized connectors to meet harsh environments continue to look for new products which will reduce size and cost without jeopardizing performance. The new Ultra-Low Profile (ULP) compression contact from KYOCERA AVX surface mounts to a PCB and provides a reliable compression connection to the mating board, even under extreme shock and vibration applications. With over 20 years of 1-Piece compression contact experience, this innovative contact offers full connector performance functionality at the individual contact level. Thus, allowing single contacts to be placed in any location or position on a PCB.

The high force beryllium copper contact is gold plated to maximize reliability and signal integrity. The current offering has two contacts with nominal heights of 1.0mm and 1.5mm. Add in the “Z” axis tolerance range and the compressed height covers 0.75mm up to 1.75mm. The contacts are supplied in tape and reel for easy SMT placement.

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<th>Description</th>
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<td>0.1μm</td>
<td>Nickel under Plate, Gold on Nose Tin on Remainder</td>
<td>Standard</td>
</tr>
<tr>
<td>006</td>
<td>0.4μm</td>
<td>Nickel under Plate, Gold on Nose Tin on Remainder</td>
<td>Special Order</td>
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<tr>
<td>008</td>
<td>0.8μm</td>
<td>Nickel under Plate, Gold on Nose Tin on Remainder</td>
<td>Special Order</td>
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</tbody>
</table>

Certification: UL File #E90723

APPLICATIONS
- Industrial/Ruggedized handheld or portable devices
- BTB connection for any traditional power or signal application
- Ground connections between PCB’s or housings

FEATURES AND BENEFITS
- Reliable gold plated Beryllium Copper contacts for high cycle life and signal integrity up to 1000 cycles
- Tape and reel packaged for automated SMT placement
- Sweeping beam design for pluggable/module applications
- Three gold plating options to match end product environmental or expected life requirements

ELECTRICAL
- Current Rating: 3 Amps
- Voltage Rating: UL 300V Based on placement distance

ENVIRONMENTAL
- Operating Temperature: -40°C to +125°C

MECHANICAL
- Contact Material: Beryllium Copper
- Contact Plating: Gold over Nickel
- Durability: 50, 500 and 1000 cycles

HOW TO ORDER

001 61X 00X

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<tr>
<th>Code</th>
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<th>Contact Operating Height Range</th>
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<td>1.00mm</td>
<td>0.75mm to 1.25mm</td>
</tr>
<tr>
<td>615</td>
<td>1.50mm</td>
<td>1.25mm to 1.75mm</td>
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</tbody>
</table>

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Low Profile Single Contact-70-9155

Height 1.00mm

70-9155-001-610-006
NOMINAL WORKING HEIGHT 1.00MM

NOTES:
1. 9155 LOW PROFILE CONTACT, WORKING HEIGHT 0.75MM TO 1.25MM.
2. FOR FULL DETAILS REFER TO PRODUCT SPECIFICATION 201-01-153 AND APPLICATIONS NOTES 201-01-154.
3. MATERIAL: COPPER ALLOY 0.2MM THICK.
4. PLATING: NICKEL ALL OVER WITH GOLD ON CONTACT NOSE AND TIN ON THE REMAINDER. PARTS TO BE PACKED IN TAPE AND REEL. QTY PER REEL 3000.
5. OUTLINE OF CONNECTOR, ORIENTATION END “A”.
6. AREA TO KEPT FREE OF SOLDER RESIST, FURTHER INFORMATION IN APPLICATION NOTES.
7. AREA BETWEEN PADS TO BE KEPT CLEAR OF TRACKS AND COMPONENTS.
8. SMT PADS PLATED TIN.
9. MATING PAD PLATED GOLD OVER NICKEL.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
**Low Profile Single Contact-70-9155**

**Height 1.50mm**

**70-9155-001-610-006**

**NOMINAL WORKING HEIGHT 1.50MM**

**FULLY DEFLECTED CONTACT**

**NOTES:**
1. 9155 LOW PROFILE CONTACT, WORKING HEIGHT 0.75MM TO 1.25MM.
2. FOR FULL DETAILS REFER TO PRODUCT SPECIFICATION 201-01-153 AND APPLICATIONS NOTES 201-01-154.
3. MATERIAL: COPPER ALLOY 0.2MM THICK.
4. PLATING: NICKEL ALL OVER WITH GOLD ON CONTACT NOSE AND TIN ON THE REMAINDER. PARTS TO BE PACKED IN TAPE AND REEL. QTY PER REEL 3000.
5. OUTLINE OF CONNECTOR, ORIENTATION END “A”.
6. AREA TO KEPT FREE OF SOLDER RESIST, FURTHER INFORMATION IN APPLICATION NOTES.
7. AREA BETWEEN PADS TO BE KEPT CLEAR OF TRACKS AND COMPONENTS.
8. SMT PADS PLATED TIN.
9. MATING PAD PLATED GOLD OVER NICKEL.

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Dual Row Stacker: BTB-00-9158

General Description

The MOBO® series 9158 is a one-piece connector used to connect two PCBs within mobile phones, pagers, PDAs, security, handheld scanners, etc. in a cost-effective manner.

A standard range is available with 16, 20, 24 and 28 contacts to suit stack heights of 1.90mm to 3.30mm. Other contact variants are also available up to 5.10mm, in custom housings. The SOLO STACKER can allow a spacing tolerance of up to ±0.30mm and still provide reliable connections between the PCBs, even if they are not parallel.

SOLO STACKER is designed for PCB surface mounting and is supplied in tape and reel packaging. Gold plated pads on the mating PCB or suitable flex circuits provide connection between the boards.

Whatever your requirements this SOLO STACKER can also be customized to suit your applications.

**APPLICATIONS**

- Mobile Phones
- PDA
- Medical
- PMR
- Industrial
- Security
- Handheld Scanner

**FEATURES AND BENEFITS**

- Reduced assembly time.
- Only one part to purchase and stock.
- Due to the unique contact design, the mating device does not have to be parallel.
- Extremely robust when subjected to shock and vibration.
- Cost effective.
- Helps reduce tolerance accumulation within system.

**ELECTRICAL**

- Current Rating: 1 Amp/Contact
- Voltage Rating: 125V
- Based on placement distance

**ENVIRONMENTAL**

- Operating Temperature: -55°C to +125°C

**MECHANICAL**

- Insulator Material: High Temperature Plastic; UL94 HB
- Contact Material: Beryllium Copper
- Plating: Gold over Nickel
- Durability: 50 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Stack Height</th>
<th>Plating Variation</th>
<th>PCB Location Bosses</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>9158</td>
<td>0XX</td>
<td>020 = 1.9mm to 2.1mm</td>
<td>Selective Gold 0.25μm</td>
<td>1 = With PCB Location Bosses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0XX</td>
<td>025 = 2.1mm to 2.7mm</td>
<td>Gold Plated Contact</td>
<td>2 = Without PCB Location Bosses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0XX</td>
<td>030 = 2.8mm to 3.3mm</td>
<td>Nose Pure Tin Tail</td>
<td></td>
</tr>
</tbody>
</table>

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
2.0MM DUAL ROW STACKER WITHOUT BOSSES

NOTES:
1. LAYOUT FOR MULTI-WAY DUAL ROW STACKING CONNECTOR (ELCO SERIES 9158).
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-073.
3. PART TO BE PACKED IN TAPE AND REEL. REFER TO PAGE 116 FOR DETAILS.
4. STACKER DESIGN TO ACCOMMODATE A PCB STACKING HEIGHT OF 1.90MM TO 2.10MM.
5. NO ALLOWANCE HAS BEEN MADE FOR SOLDER PASTE THICKNESS IN PCB STACKING HEIGHT.
6. GENERAL TOLERANCE ±0.20 UNLESS OTHERWISE STATED.

---

<table>
<thead>
<tr>
<th>No of Positions</th>
<th>Part Number</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>00-9158-016-020-062</td>
<td>7</td>
<td>9.00</td>
</tr>
<tr>
<td>20</td>
<td>00-9158-020-020-062</td>
<td>9</td>
<td>11.00</td>
</tr>
<tr>
<td>24</td>
<td>00-9158-024-020-062</td>
<td>11</td>
<td>13.00</td>
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<td>28</td>
<td>00-9158-028-020-062</td>
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<td>15.00</td>
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</tbody>
</table>

MATING PCB FOOTPRINT

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SMT PCB FOOTPRINT

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Dual Row Stacker: 00-9158-BTB
2.5mm Without Bosses

2.5MM DUAL ROW STACKER WITHOUT BOSSES

NOTES:
1. LAYOUT FOR MULTI-WAY DUAL ROW STACKING CONNECTOR (ELCO SERIES 9158).
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-073.
3. PART TO BE PACKED IN TAPE AND REEL. REFER TO PAGE 116 FOR DETAILS.
4. STACKER DESIGN TO ACCOMMODATE A PCB STACKING HEIGHT OF 2.10MM TO 2.70MM.
5. NO ALLOWANCE HAS BEEN MADE FOR SOLDER PASTE THICKNESS IN PCB STACKING HEIGHT.
6. GENERAL TOLERANCE ±0.20 UNLESS OTHERWISE STATED.

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3.0MM DUAL ROW STACKER WITHOUT BOSSES

NOTES:
1. LAYOUT FOR MULTI-WAY DUAL ROW STACKING CONNECTOR (ELCO SERIES 9158).
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-073.
3. PART TO BE PACKED IN TAPE AND REEL. REFER TO PAGE 116 FOR DETAILS.
4. STACKER DESIGN TO ACCOMMODATE A PCB STACKING HEIGHT OF 2.80MM TO 3.30MM.
5. NO ALLOWANCE HAS BEEN MADE FOR SOLDER PASTE THICKNESS IN PCB STACKING HEIGHT.
6. GENERAL TOLERANCE ±0.20 UNLESS OTHERWISE STATED.

SMT PCB FOOTPRINT

MATING PCB FOOTPRINT

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NOTES:
1. LAYOUT FOR MULTI-WAY DUAL ROW STACKING CONNECTOR (ELCO SERIES 9158).
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-073.
3. PART TO BE PACKED IN TAPE AND REEL. REFER TO PAGE 116 FOR DETAILS.
4. STACKER DESIGN TO ACCOMMODATE A PCB STACKING HEIGHT OF 1.90MM TO 2.10MM.
5. NO ALLOWANCE HAS BEEN MADE FOR SOLDER PASTE THICKNESS IN PCB STACKING HEIGHT.
6. GENERAL TOLERANCE ±0.20 UNLESS OTHERWISE STATED.

---

SMT PCB FOOTPRINT

<table>
<thead>
<tr>
<th>No of Positions</th>
<th>Part Number</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
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<td>7</td>
<td>9.00</td>
</tr>
<tr>
<td>20</td>
<td>00-9158-020-020-062</td>
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<td>11.00</td>
</tr>
<tr>
<td>24</td>
<td>00-9158-024-020-062</td>
<td>11</td>
<td>13.00</td>
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<tr>
<td>28</td>
<td>00-9158-028-020-062</td>
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</tr>
</tbody>
</table>

---

MATING PCB FOOTPRINT

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Dual Row Stacker: 00-9158-BTB
2.5mm With Bosses

NOTES:
1. LAYOUT FOR MULTI-WAY DUAL ROW STACKING CONNECTOR (ELCO SERIES 9158).
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-073.
3. PART TO BE PACKED IN TAPE AND REEL. REFER TO PAGE 116 FOR DETAILS.
4. STACKER DESIGN TO ACCOMMODATE A PCB STACKING HEIGHT OF 2.10MM TO 2.70MM.
5. NO ALLOWANCE HAS BEEN MADE FOR SOLDER PASTE THICKNESS IN PCB STACKING HEIGHT.
6. GENERAL TOLERANCE ±0.20 UNLESS OTHERWISE STATED.

<table>
<thead>
<tr>
<th>No of Positions</th>
<th>Part Number</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>00-9158-016-020-062</td>
<td>7</td>
<td>9.00</td>
</tr>
<tr>
<td>20</td>
<td>00-9158-020-020-062</td>
<td>9</td>
<td>11.00</td>
</tr>
<tr>
<td>24</td>
<td>00-9158-024-020-062</td>
<td>11</td>
<td>13.00</td>
</tr>
<tr>
<td>28</td>
<td>00-9158-028-020-062</td>
<td>13</td>
<td>15.00</td>
</tr>
</tbody>
</table>

**MATING PCB FOOTPRINT**

**SMT PCB FOOTPRINT**
## Dual Row Stacker: 00-9158-BTB
### 3.0mm With Bosses

### 3.0MM DUAL ROW STACKER WITH BOSSES

**NOTES:**
1. LAYOUT FOR MULTI-WAY DUAL ROW STACKING CONNECTOR (ELCO SERIES 9158).
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-073.
3. PART TO BE PACKED IN TAPE AND REEL. REFER TO PAGE 116 FOR DETAILS.
4. STACKER DESIGN TO ACCOMMODATE A PCB STACKING HEIGHT OF 2.80MM TO 3.30MM.
5. NO ALLOWANCE HAS BEEN MADE FOR SOLDER PASTE THICKNESS IN PCB STACKING HEIGHT.
6. GENERAL TOLERANCE ±0.20 UNLESS OTHERWISE STATED.

### MATING CONDITION

**MATING PCB FOOTPRINT**

**SMT PCB FOOTPRINT**

### Table: No of Positions Part Number A B

<table>
<thead>
<tr>
<th>No of Positions</th>
<th>Part Number</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>00-9158-016-020-062</td>
<td>7</td>
<td>9.00</td>
</tr>
<tr>
<td>20</td>
<td>00-9158-020-020-062</td>
<td>9</td>
<td>11.00</td>
</tr>
<tr>
<td>24</td>
<td>00-9158-024-020-062</td>
<td>11</td>
<td>13.00</td>
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<tr>
<td>28</td>
<td>00-9158-028-020-062</td>
<td>13</td>
<td>15.00</td>
</tr>
</tbody>
</table>

---

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### Limits to PCB Misalignment & Packing Details

#### Limits to PCB Misalignment

**NOTES:**
1. PCB STACK HEIGHT (REF PAGE 109). THIS IS THE CONTROLLING LIMIT ON THE GAP BETWEEN THE TWO PCB FACES AT ANY POINT WHEN IN THE FINAL MATED POSITION.
2. NO ALLOWANCE HAS BEEN MADE FOR SOLDER PASTE THICKNESS IN PCB STACKING HEIGHT.
3. IT IS CRITICAL THAT ON ASSEMBLY THE CONTACT NOSES DO NOT STRAY OUTSIDE OF THE MATING PAD AREA IN THE FINAL MATED POSITION.
4. THE MAXIMUM MISALIGNMENT ABOUT ANY ONE AXIS IN DEGREES. SEE NOTES 1 AND 3.

<table>
<thead>
<tr>
<th>Code (See page 107)</th>
<th>Stack Height (Note 1)</th>
<th>Max Angle Degrees on Axis (Note 4)</th>
<th>Number of Ways</th>
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<td>X</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z</td>
<td>2.0</td>
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<tr>
<td>025</td>
<td>2.1mm to 2.7mm</td>
<td>X</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Z</td>
<td>4.0</td>
</tr>
<tr>
<td>030</td>
<td>2.7mm to 3.3mm</td>
<td>X</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
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#### Packing Details 9158 Solo Stacker Connectors

<table>
<thead>
<tr>
<th>No of Positions</th>
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<th>Bosses</th>
<th>Part Number</th>
<th>Tape Width</th>
<th>Reel Qty.</th>
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<tr>
<td>16</td>
<td>2.0</td>
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<td>16</td>
<td>1500</td>
</tr>
<tr>
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<td>2.5</td>
<td>Yes</td>
<td>00-9158-016-025-0X1</td>
<td>16</td>
<td>1250</td>
</tr>
<tr>
<td>16</td>
<td>2.5</td>
<td>No</td>
<td>00-9158-016-025-0X2</td>
<td>16</td>
<td>1250</td>
</tr>
<tr>
<td>16</td>
<td>3.0</td>
<td>Yes</td>
<td>00-9158-016-030-0X1</td>
<td>16</td>
<td>1100</td>
</tr>
<tr>
<td>16</td>
<td>3.0</td>
<td>No</td>
<td>00-9158-016-030-0X2</td>
<td>16</td>
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</tr>
<tr>
<td>20</td>
<td>2.0</td>
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<td>00-9158-020-020-0X1</td>
<td>24</td>
<td>1250</td>
</tr>
<tr>
<td>20</td>
<td>2.0</td>
<td>No</td>
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</tr>
<tr>
<td>20</td>
<td>2.5</td>
<td>Yes</td>
<td>00-9158-020-025-0X1</td>
<td>24</td>
<td>1250</td>
</tr>
<tr>
<td>20</td>
<td>2.5</td>
<td>No</td>
<td>00-9158-020-025-0X2</td>
<td>24</td>
<td>1250</td>
</tr>
<tr>
<td>20</td>
<td>3.0</td>
<td>Yes</td>
<td>00-9158-020-030-0X1</td>
<td>24</td>
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<tr>
<td>20</td>
<td>3.0</td>
<td>No</td>
<td>00-9158-020-030-0X2</td>
<td>24</td>
<td>1100</td>
</tr>
<tr>
<td>24</td>
<td>2.0</td>
<td>Yes</td>
<td>00-9158-024-020-0X1</td>
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</tr>
<tr>
<td>24</td>
<td>2.0</td>
<td>No</td>
<td>00-9158-024-020-0X2</td>
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<td>1500</td>
</tr>
<tr>
<td>24</td>
<td>2.5</td>
<td>Yes</td>
<td>00-9158-024-025-0X1</td>
<td>24</td>
<td>1250</td>
</tr>
<tr>
<td>24</td>
<td>2.5</td>
<td>No</td>
<td>00-9158-024-025-0X2</td>
<td>24</td>
<td>1250</td>
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<tr>
<td>24</td>
<td>3.0</td>
<td>Yes</td>
<td>00-9158-024-030-0X1</td>
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<td>24</td>
<td>3.0</td>
<td>No</td>
<td>00-9158-024-030-0X2</td>
<td>24</td>
<td>1100</td>
</tr>
<tr>
<td>28</td>
<td>2.0</td>
<td>Yes</td>
<td>00-9158-028-020-0X1</td>
<td>24</td>
<td>1250</td>
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<tr>
<td>28</td>
<td>2.0</td>
<td>No</td>
<td>00-9158-028-020-0X2</td>
<td>24</td>
<td>1250</td>
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<td>28</td>
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<td>Yes</td>
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<td>24</td>
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</tbody>
</table>

### Typical Connector Views

- **Typical 16 Way** (Shown with Bosses)
- **Typical 20 Way** (Shown without Bosses)
- **Typical 24 Way** (Shown with Bosses)
- **Typical 28 Way** (Shown without Bosses)
Staggered Stacker: 00-9188-BTB

General Description

The SOLO series 9188 is a one-piece connector used to connect two PCBs in a cost effective manner. A standard range is available with 4, 6, 8 staggered contacts to suit stack heights of 1.1mm to 2.1mm (see table below).

SOLO Stacker is designed for PCB surface mounting and is supplied in tape and reel packaging. Gold plated pads on the mating PCB or suitable flex circuits provide connection between the two boards.

### APPLICATIONS
- Phones
- Scanners
- Radios
- Medical Diagnostic
- Security Devices

### FEATURES AND BENEFITS
Single piece connector – no mating half required to connect two boards together which means:
- Reduced assembly time
- Only one part to purchase and stock
- Due to the unique contact design, the mating device does not have to be parallel
- Helps reduce tolerance accumulation within system

### ELECTRICAL
- Current Rating: 1 Amp/Contact
- Voltage Rating: 125V
  Based on placement distance

### ENVIRONMENTAL
- Operating Temperature: -55°C to +125°C

### MECHANICAL
- Insulator Material: High Temperature Plastic; UL94 HB
- Contact Material: Beryllium Copper
- Plating: Gold over Nickel
- Durability: 50 Cycles

### HOW TO ORDER

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Stack Height</th>
<th>Plating Variation</th>
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<tbody>
<tr>
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<td>00X</td>
<td>004 = 4</td>
<td>062 Selective Gold</td>
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<tr>
<td></td>
<td></td>
<td>00X</td>
<td>006 = 6</td>
<td>0.25μm Gold Plated</td>
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<tr>
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<td></td>
<td>00X</td>
<td>008 = 8</td>
<td>Contact Nose Pure</td>
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</table>

<table>
<thead>
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<td>012</td>
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<td>4 only</td>
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<tr>
<td>020</td>
<td>1.9mm to 2.1mm</td>
<td>4, 6, &amp; 8</td>
</tr>
</tbody>
</table>

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NOTES:
1. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPECIFICATION 201-01-121.
3. INSULATOR MATERIAL: HIGH TEMPERATURE PLASTIC UL94 HB. COLOR BLACK.
4. CONTACT MATERIAL: COPPER ALLOY.
5. CONTACT PLATING: 1.0 M NICKEL UNDERPLATED. SELECTIVE 0.25 M GOLD ON NOSE.
   2.0 TO 4.0 M PURE TIN ON TAILS.
6. PACKING 2000 PIECES ON A 330MM REEL.
**NOTES:**

1. **GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.**
2. **FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPECIFICATION 201-01-121.**
3. **INSULATOR MATERIAL: HIGH TEMPERATURE PLASTIC UL94 HB. COLOR BLACK.**
4. **CONTACT MATERIAL: COPPER ALLOY.**
5. **CONTACT PLATING: 1.0 M NICKEL UNDERPLATED. SELECTIVE 0.25 M GOLD ON NOSE. 2.0 TO 4.0 M PURE TIN ON TAILS.**
6. **PACKING 2000 PIECES ON A 330MM REEL.**

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**SMT PCB FOOTPRINT**

**MATING PCB FOOTPRINT**

**PACKING DETAILS**

---

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**NOTES:**

1. **GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.**
2. **FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPECIFICATION 201-01-121.**
3. **INSULATOR MATERIAL: HIGH TEMPERATURE PLASTIC UL94 HB. COLOR BLACK.**
4. **CONTACT MATERIAL: COPPER ALLOY.**
5. **CONTACT PLATING: 1.0 M NICKEL UNDERPLATED. SELECTIVE 0.25 M GOLD ON NOSE. 2.0 TO 4.0 M PURE TIN ON TAILS.**
6. **PACKING 2000 PIECES ON A 330MM REEL.**

---

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**Staggered Stacker: 00-9188-BTB**

8 Position 2.0mm

---

**NOTES:**

1. GENERAL TOLERANCE ±0.20 UNLESS SPECIFIED.
2. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPECIFICATION 201-01-121.
3. INSULATOR MATERIAL: HIGH TEMPERATURE PLASTIC UL94 HB, COLOR BLACK.
4. CONTACT MATERIAL: COPPER ALLOY.
5. CONTACT PLATING: 1.0 M NICKEL UNDERPLATED. SELECTIVE 0.25 M GOLD ON NOSE. 2.0 TO 4.0 M PURE TIN ON TAILS.
6. PACKING 2000 PIECES ON A 330MM REEL.

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**8 WAY STAGGERED STACKER – 2.0MM HEIGHT**

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**MATING CONDITION**

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**SECTION ON X-X**

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**SMT PCB FOOTPRINT**

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**MATING PCB FOOTPRINT**

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**PACKING DETAILS**

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Ultra Low Profile Stacker: 00-9258-BTB

General Description

The SOLO series 9258 is a one-piece connector used to connect two PCBs in a cost effective manner. This connector is a 1.0mm pitch available in an 8 position with stack heights of 0.40mm and 0.80mm. It is available with or without location bosses. This connector is designed for PCB surface mounting and is supplied in tape and reel packaging. Gold plated pads on the mating PCB or suitable flex circuits provide connection between the boards.

APPLICATIONS
- Mobile phones
- Handheld scanners
- Portable medical devices
- Display interface

FEATURES AND BENEFITS
- Single piece connector - no mating half connector required to connect two boards together which means:
  - Reduced assembly time
  - Only one part to purchase and stock
  - Due to the unique contact design, the mating device does not have to be parallel
  - Extremely robust when it comes to shock and vibration

ELECTRICAL
- Current Rating: 1 Amp/Contact
- Voltage Rating: 125V
  Based on placement distance

ENVIRONMENTAL
- Operating Temperature: -55ºC to +125ºC

MECHANICAL
- Insulator Material: High Temperature Plastic; UL94 V-0
- Contact Material: Beryllium Copper
- Plating: Gold over Nickel
- Durability: 50 Cycles

HOW TO ORDER

<table>
<thead>
<tr>
<th>Code</th>
<th>Stack Height</th>
<th>Contact Height</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>004</td>
<td>0.40mm</td>
<td>1.00-1.30</td>
<td>No. of Ways</td>
</tr>
<tr>
<td>008</td>
<td>0.80mm</td>
<td>1.40-1.70</td>
<td></td>
</tr>
</tbody>
</table>

Plating Variation
- Selective Gold 0.25μm Gold Plated Contact Nose Pure Tin Tail

PCB Location Bosses
- 1 = With PCB Location Bosses (top side)
- 2 = Without PCB Location Bosses
- 3 = With SMT PCB Location Bosses (bottom side)
- 4 = With SMT and Mating PCB Location Bosses (top and bottom side)

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
Ultra Low Profile Stacker: 00-9258-BTB

0.4mm

**0.4MM ULTRA LOW PROFILE STACKER**

NOTES:
1. 8 WAY ULTRA LOW PROFILE STACKER IN 0.8MM STACK HEIGHT.
2. INSULATOR MATERIAL: NYLON-66 HF5040, 40% GLASS FILLED UL94 V-0. COLOR BLACK.
3. CONTACT MATERIAL: 0.10MM THICK BeCu.
4. CONTACT PLATING: NICKEL UNDERPLATE, SELECTIVE GOLD PLATED CONTACT NOSES PURE TIN PLATED CONTACT SMT TAILS.
5. PARTS TO BE PACKED IN TAPE AND REEL, QTY: 1200.
6. ALL DIMENSIONS FOR REFERENCE UNLESS TOLERANCED.
7. FOR FURTHER INFORMATION REFER TO SPECIFICATION 201-01-115.

**PROPOSED SMT PCB LAYOUT**
ALL PADS PURE TIN PLATE

**PROPOSED MATING PCB LAYOUT**
ALL PADS GOLD PLATE

**PACKING TAPE DETAILS**

**WITH MATING PCB LOCATION BOSSES**
(TOP SIDE)

**WITHOUT PCB LOCATION BOSSES**

**WITH SMT PCB LOCATION BOSSES**
(BOTTOM SIDE)

**WITH PCB AND SMT LOCATION BOSSES**
Ultra Low Profile Stacker: 00-9258-BTB
0.8mm

0.8MM ULTRA LOW PROFILE STACKER

NOTES:
1. 8 WAY ULTRA LOW PROFILE STACKER IN 0.4MM STACK HEIGHT.
2. INSULATOR MATERIAL: NYLON-46 HF5040, 40% GLASS FILLED UL94 V-0. COLOR BLACK.
3. CONTACT MATERIAL: 0.10MM THICK BeCu.
4. CONTACT PLATING: NICKEL UNDERPLATE, SELECTIVE GOLD PLATED CONTACT NOSES
   PURE TIN PLATED CONTACT SMT TAILS.
5. PARTS TO BE PACKED IN TAPE AND REEL, QTY: 1400.
6. ALL DIMENSIONS FOR REFERENCE UNLESS TOLERANCED.
7. FOR FURTHER INFORMATION REFER TO SPECIFICATION 201-01-115.

PROPOSED SMT PCB LAYOUT
ALL PADS PURE TIN PLATE

WITH MATING PCB LOCATION BOSSES
(TOP SIDE)

PROPOSED MATING PCB LAYOUT
ALL PADS GOLD PLATE

WITHOUT PCB LOCATION BOSSES

WITH SMT PCB LOCATION BOSSES
(BOTTOM SIDE)

PACKING TAPE DETAILS

WITH PCB AND SMT LOCATION BOSSES
Pogo Pin Compression
**Pogo Pin Single Contact: 70-9150-BTB**

**General Description**

Single Pogo Pin contacts provide high cycle life in industrial and medical applications where reliability and robustness is critical. Pogo Pins provide 10,000 mating cycles and are ideal in pluggable module applications where the end customer has to handle a product daily. Pogo Pins are designed to mate with gold plated PCB pads or flat contacts in docking/cradle applications to function as the charging, data transfer or programming interface to a portable device.

The standard range single contacts from KYOCERA AVX provides the maximum flexibility in pin count, placement location and broad compressed stacking heights ranging from 2.0mm up to 5.5mm. The contacts are provided in standard tape and reel packaging for automatic in-line SMT placement. A disposable plastic cap facilitates vacuum pick-up and then is removed after reflow soldering prior to product mating. Contacts are gold plated and incorporate high force stainless steel springs for durability and signal integrity.

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>FEATURES AND BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Base/Docking stations for portable electronic devices to recharge batteries or download data</td>
<td>• Contacts range from 2.0mm to 5.5mm providing off-the-shelf availability for almost any application</td>
</tr>
<tr>
<td>• Testing and programming of electronic modules</td>
<td>• Each contact height provides the maximum working range and compressed height tolerance possible</td>
</tr>
<tr>
<td>• Interface to disposable medical or measurement components</td>
<td>• Gold plated contacts provide high reliability and signal integrity over 10,000 cycles</td>
</tr>
<tr>
<td>• Removable pick-up cap facilitates automatic placement for SMT reflow</td>
<td></td>
</tr>
</tbody>
</table>

**ELECTRICAL**

- Current Rating: 1 Amp
- Voltage Rating: Based on placement distance

**ENVIRONMENTAL**

- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**

- Contact Material: Brass
- Contact Plating: Gold over Nickel
- Spring Material: SUS304
- Durability: 10k Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Contact Operating Range</th>
<th>Sleeve Diameter</th>
<th>Packing Option</th>
<th>Plating Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>9150</td>
<td>001</td>
<td>020 = 1.90 to 2.30</td>
<td>0 = 1.50</td>
<td>0 = Tape &amp; Reel</td>
<td>6 = Gold over Nickel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>025 = 2.40 to 2.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>030 = 2.90 to 3.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>040 = 3.90 to 4.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>050 = 4.90 to 5.50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Pogo Pin Single Contact: 70-9150-BTB
2mm High Pin

1.50MM DIAMETER 2MM HIGH POGO PIN

NOTES:
1. SERIES 9150 POGO PIN, WORKING HEIGHT 2MM TO 2.3MM.
2. MATERIAL: PIN AND SLEEVE, COPPER ALLOW PLATED GOLD OVER NICKEL. SPRING STAINLESS STEEL.
3. SUPPLIED WITH A PROTECTION CAP IN PA9T. SUITABLE FOR PICK AND PLACE AND RE-FLOW.
4. PACKING IN TAPE AND REEL, QUANTITY PER REEL 1400.
5. DURABILITY 10,000 OPERATIONS FOR OTHER PRODUCT DETAILS REFER TO SPECIFICATION 201-01-158.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PCB DETAILS ON PAGE 131.

PACKING DETAILS

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
NOTES:
1. SERIES 9150 POGO PIN, WORKING HEIGHT 2.5MM TO 2.8MM.
2. MATERIAL: PIN AND SLEEVE, COPPER ALLOY PLATED GOLD OVER NICKEL. SPRING STAINLESS STEEL.
3. SUPPLIED WITH A PROTECTION CAP IN PA9T. SUITABLE FOR PICK AND PLACE AND RE-FLOW.
4. PACKING IN TAPE AND REEL, QUANTITY PER REEL 1400.
5. DURABILITY 10,000 OPERATIONS FOR OTHER PRODUCT DETAILS REFER TO SPECIFICATION 201-01-158.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PCB DETAILS ON PAGE 131.
Pogo Pin Single Contact: 70-9150-BTB
3mm High Pin

1.50MM DIAMETER 3MM HIGH POGO PIN

NOTES:
1. SERIES 9150 POGO PIN, WORKING HEIGHT 3MM TO 3.4MM.
2. MATERIAL: PIN AND SLEEVE, COPPER ALLOW PLATED GOLD OVER NICKEL. SPRING STAINLESS STEEL.
3. SUPPLIED WITH A PROTECTION CAP IN PA9T. SUITABLE FOR PICK AND PLACE AND RE-FLOW.
4. PACKING IN TAPE AND REEL, QUANTITY PER REEL 1400.
5. DURABILITY 10,000 OPERATIONS FOR OTHER PRODUCT DETAILS REFER TO SPECIFICATION 201-01-158.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PCB DETAILS ON PAGE 131.

PACKING DETAILS

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
Pogo Pin Single Contact: 70-9150-BTB

4mm High Pin

1.50MM DIAMETER 4MM HIGH POGO PIN

NOTES:

1. SERIES 9150 POGO PIN, WORKING HEIGHT 4MM TO 4.5MM.
2. MATERIAL: PIN AND SLEEVE, COPPER ALLOW PLATED GOLD OVER NICKEL.
   SPRING STAINLESS STEEL.
3. SUPPLIED WITH A PROTECTION CAP IN PA9T. SUITABLE FOR PICK AND PLACE AND RE-FLOW.
4. PACKING IN TAPE AND REEL, QUANTITY PER REEL 1400.
5. DURABILITY 10,000 OPERATIONS FOR OTHER PRODUCT DETAILS REFER TO SPECIFICATION 201-01-158.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PCB DETAILS ON PAGE 131.

PACKING DETAILS

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Pogo Pin Single Contact: 70-9150-BTB
5mm High Pin

1.50MM DIAMETER 5MM HIGH POGO PIN

NOTES:
1. SERIES 9150 POGO PIN, WORKING HEIGHT 5MM TO 5.5MM.
2. MATERIAL: PIN AND SLEEVE, COPPER ALLOY PLATED GOLD OVER NICKEL.
   SPRING STAINLESS STEEL.
3. SUPPLIED WITH A PROTECTION CAP IN PA9T, SUITABLE FOR PICK AND PLACE AND RE-FLOW.
4. PACKING IN TAPE AND REEL, QUANTITY PER REEL 1400.
5. DURABILITY 10,000 OPERATIONS FOR OTHER PRODUCT DETAILS REFER TO SPECIFICATION 201-01-158.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PCB DETAILS ON PAGE 131.

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**PCB DETAILS**

**SUGGESTED MATING PCB**

PAD TO BE PLATED GOLD OVER NICKEL

**SUGGESTED MOUNTING PCB**

---

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Board to Board Jumper
Jumper: 10-9296 BTB

General Description

- Multiple jumper pins to be used in linear BTB applications
- 1.0mm pin diameter comes in a 38.15mm and 26mm length
  - 1.0mm pin to be used with 70929601025016
- 0.8mm pin diameter comes in a 16mm length
  - 0.8mm pin to be used with 70929601002016
  and the 9296-202 series

APPLICATIONS

- The 709296001025016 and 709296001002016 contacts without a wire stop, allow the pin header to pass straight thru the contacts until the final seating/mating dimension is achieved
- Single pin connection between linear PCB's
- 38mm pin allows for modules to be connected where the PCB is recessed within the plastic housing.

FEATURES AND BENEFITS

- Absorption of PCB and module mating tolerances by allowing the unrestricted pin to pass through the contact by eliminating the traditional wire stop
- Two different pin lengths and pin diameters to accommodate a number of board-to-board and module-to-module connections
- The unique geometry of the insulator lends itself to water tightness when matched with a corresponding housing cavity

ELECTRICAL

- Current Rating:
  1.0mm Pin Diameter = 6.5A
  0.8mm Pin Diameter = 5A
- Voltage Rating:
  300V (based on contact spacing)

ENVIRONMENTAL

- Operating Temperature:
  -40ºC to +105ºC

MECHANICAL

- Insulator Material: Glass-Filled Nylon PA-66;
  UL94V0
- Contact Material: Brass
- Plating: Lead-Free Tin Over Nickel
- Durability: 3 Cycles

HOW TO ORDER

<table>
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<tr>
<th>10</th>
<th>9296</th>
<th>00X</th>
<th>XXX</th>
<th>X</th>
<th>X</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix</td>
<td>Series</td>
<td>Number of Positions</td>
<td>Pin Length</td>
<td>Housing Color Standard</td>
<td>Pin Size/Spacing</td>
<td>Contact Plating</td>
</tr>
<tr>
<td>10 = Plug</td>
<td>10 = Plug</td>
<td>001 = 1 pin, 002 = 2 pin</td>
<td>0.8mm Dia. Pin 160 = 16mm, 1.0mm Dia. Pin 260 = 26mm, 381 = 38.15mm</td>
<td>9 = White/Natural Special Order</td>
<td>Pin diameter/Spacing* 0 = ø 1.00 on 4.00mm Pitch 1 = ø 0.80 on 3.00mm Pitch</td>
<td>6 = Pure Tin</td>
</tr>
</tbody>
</table>

Certification: UL File #E90723

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Jumper: 10-9296 BTB

NOTES:

1. HOUSING MATERIAL: GLASS-FILLED NYLON; PA-66; FLAME RETARDANT PER UL94V-0; COLOR: PER CODE.
2. PIN MATERIAL: BRASS.
3. PIN PLATING: LEAD-FREE TIN OVER NICKEL.
4. PACKAGING TO BE BULK, 1,000 PER BAG.
5. SPECIFICATIONS:
   - CURRENT RATING: 6.5A
   - INSULATION RESISTANCE: 1,000MΩ MINIMUM
   - CONTACT RESISTANCE: 250 Ω MAXIMUM
   - DIELECTRIC WITHSTANDING VOLTAGE: 1,600V AC/DC
   - OPERATING TEMPERATURE: SPEC -40ºC TO +125ºC - UL RATING UP TO 130ºC.

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Jumper: 10-9296 BTB

10-9296-002-XXX-X06 (1.0MM)

Part Number | Dim. A
--- | ---
10-9296-001-260-906 | 26.0
10-9296-001-381-906 | 38.15

NOTES:
1. HOUSING MATERIAL: GLASS-FILLED NYLON; PA-66; FLAME RETARDANT PER UL94V-0; COLOR: PER CODE.
2. PIN MATERIAL: BRASS.
3. PIN PLATING: LEAD-FREE TIN OVER NICKEL.
4. PACKAGING TO BE BULK, 500 PER BAG.
5. SPECIFICATIONS:
   - CURRENT RATING: 6.5A
   - INSULATION RESISTANCE: 1,000MΩ MINIMUM
   - CONTACT RESISTANCE: 25Ω MAXIMUM
   - DIELECTRIC WITHSTANDING VOLTAGE: 1,600V AC/DC
   - OPERATING TEMPERATURE: SPEC -40°C TO +125°C - UL RATING UP TO 130°C.

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.
NOTES:
1. HOUSING MATERIAL: GLASS-FILLED NYLON; PA-66;
   FLAME RETARDANT PER UL94V-0; COLOR: PER CODE.
2. PIN MATERIAL: BRASS.
3. PIN PLATING: LEAD-FREE TIN OVER NICKEL.
4. PACKAGING TO BE BULK, 1,000 PER BAG.
5. SPECIFICATIONS:
   - CURRENT RATING: 5.0 AMPS
   - INSULATION RESISTANCE: 1,000MΩ MINIMUM
   - CONTACT RESISTANCE: 25Ω MAXIMUM
   - DIELECTRIC WITHSTANDING VOLTAGE: 1,600V AC/DC
   - OPERATING TEMPERATURE: SPEC -40ºC TO +125ºC - UL RATING UP TO 130ºC.
6. GENERAL TOLERANCE - ±0.2.

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Jumper: 10-9296 BTB

10-9296-002-XXX-X16 (0.8MM)

NOTES:
1. HOUSING MATERIAL: GLASS-FILLED NYLON; PA-66;
   FLAME RETARDANT PER UL94V-0; COLOR: PER CODE.
2. PIN MATERIAL: BRASS.
3. PIN PLATING: LEAD-FREE TIN OVER NICKEL.
4. PACKAGING TO BE BULK, 1,000 PER BAG.
5. SPECIFICATIONS:
   - CURRENT RATING: 5.0 AMPS
   - INSULATION RESISTANCE: 1,000MO MINIMUM
   - CONTACT RESISTANCE: 250 MAXIMUM
   - DIELECTRIC WITHSTANDING VOLTAGE: 1,600V AC/DC
   - OPERATING TEMPERATURE: SPEC -40ºC TO +125ºC - UL RATING UP TO 130ºC.
6. GENERAL TOLERANCE - ±0.2.
Linking
STRIP™ or naked contacts have been proven to provide high performance at a lower cost structure than traditional insulated connectors. Adding to the list of UL certified contacts already on the market from KYOCERA AVX, the new high spring force “C-Clip” designed SMT contact can be linked together with a bridging contact to provide ultra-reliability in linear BTB connections. In addition to robustness, this three-piece component set absorbs mating tolerances between the boards and can handle 20 amps of continuous current.

**APPLICATIONS**
- Linear LED Board-to-Board connections
- Co-Planar PCB mating

**FEATURES AND BENEFITS**
- Fatigue resistant phosphor bronze material which generates and maintains high mating forces
- Integral dimples on the bridge contact provides positive retention in the c-clip contact
- Center placed attachment tang prevents the bridge contact from moving forward or backwards

**ELECTRICAL**
- Current Rating: 9 Amps
- Voltage Rating: 300V

**ENVIRONMENTAL**
- Operating Temperature: -40°C to +125°C

**MECHANICAL**
- Contact Material: Phosphor Bronze
- Plating: Lead-Free Matte Tin Over Nickel
- Durability: 5 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Contact Description</th>
<th>Plating Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>9159</td>
<td>001</td>
<td>302 = SMT Contact</td>
<td>006 = Tin Over Nickel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>001 = 1</td>
<td>311 = Bridge Contact</td>
<td></td>
</tr>
</tbody>
</table>

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Central America
Tel: +55 11-46881960

Europe
Tel: +44 1276-697000

Asia
Tel: +65 6286-7555

Japan
Tel: +81 740-321250

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