# Single 2 Piece Contacts: BTB

## 70-9159



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. 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. The 1-Piece version offers the best cost advantage for a connectorized solution, yet has limitations in LED pitch densities.

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:
  -40ºC to +125ºC

## MECHANICAL

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

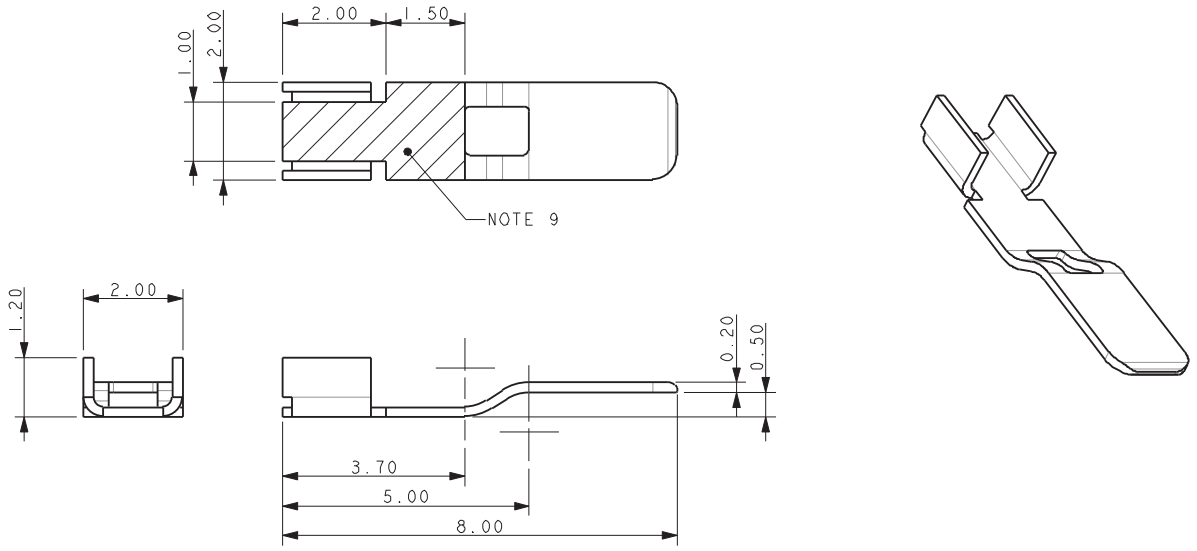
## HOW TO ORDER

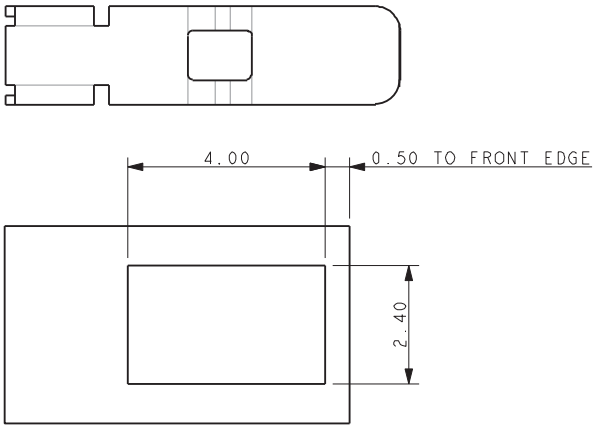
| 70 | 9159 | 001 | 4XX | 006 |
|---|---|---|---|---|
| **Prefix** | **Series** | **Number of Ways**<br>001 = 1 | **Contact Description**<br>401 = Plug - SMT<br>402 = Socket - SMT<br>411 = Plug - SMT - Locking | **Packaging Options**<br>006 = Gold in Contact Area |

RoHS COMPLIANT

Certification: UL File #E90723

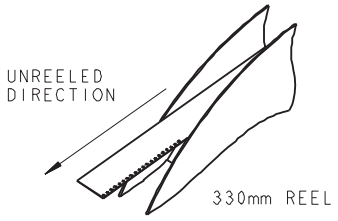
### 70-9159-001-401-006

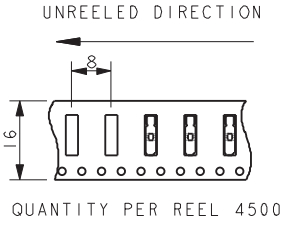



### SUGGESTED PCB LAYOUT

### PACKING DETAILS

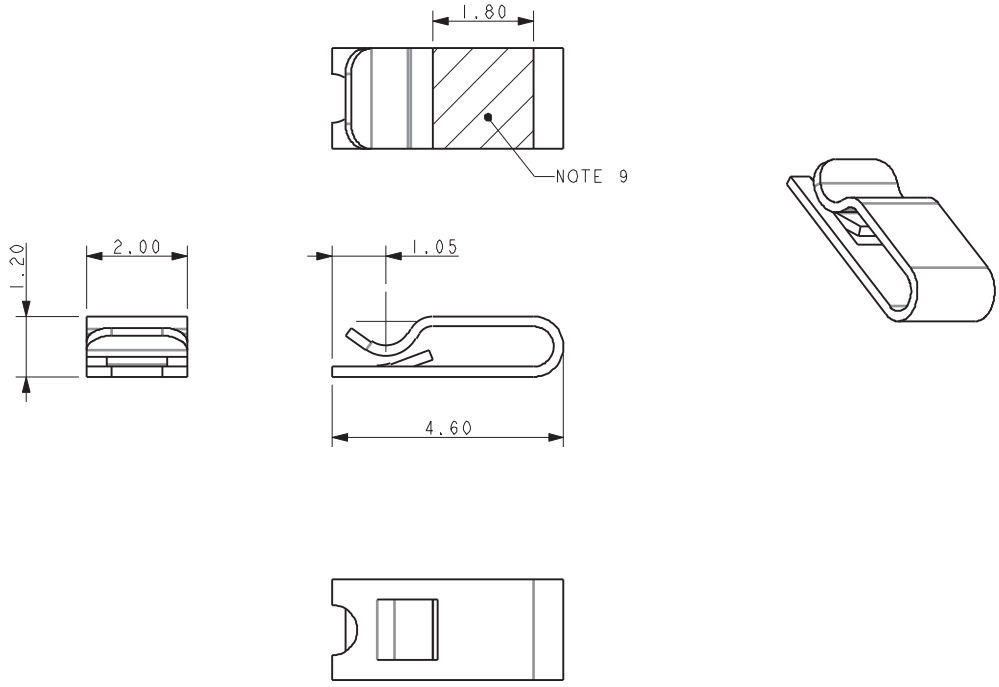


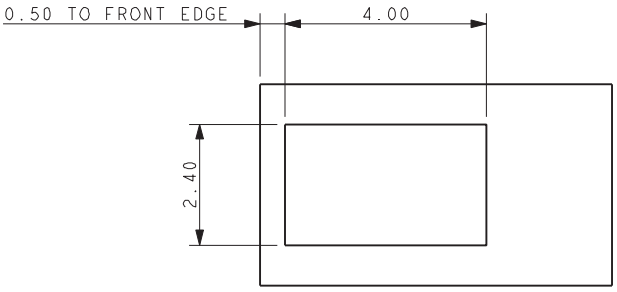




QUANTITY PER REEL 4500

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.

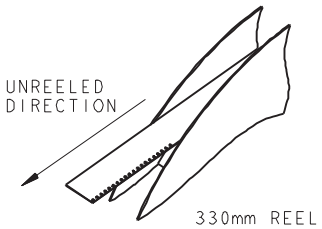
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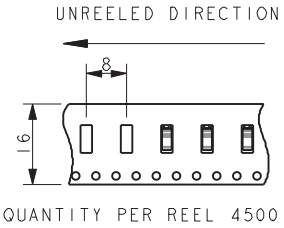



### SUGGESTED PCB LAYOUT

### PACKING DETAILS

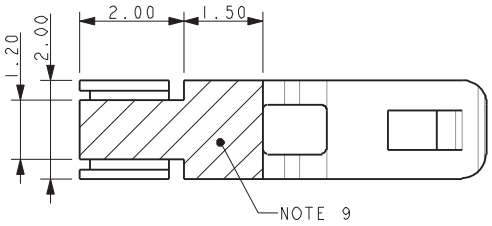


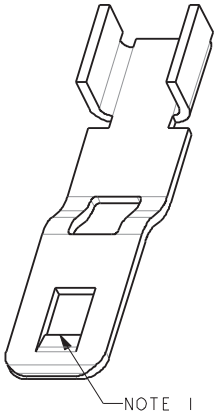



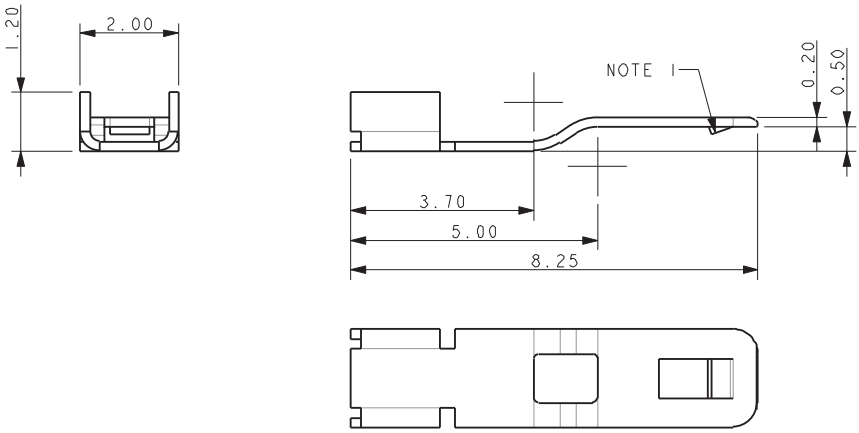

QUANTITY PER REEL 4500

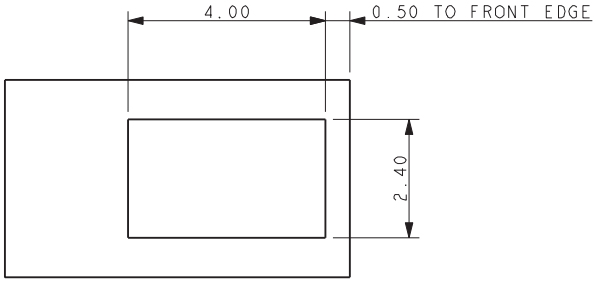
NOTES:
1. 9159 SINGLE CONTACT, SMT MOUNT, SOCKET CONTACT.
2. TO MATE WITH 70-9159-001-401-006 PLUG CONTACT, REFER TO PAGE 66 AND LOCAKING PLUG CONTACT 70-9159-001-411-006 PAGE 68.
3. TYPICAL APPLICATIONS SEE PAGES 69 AND 70.
4. FOR FURTHER INFORMATION REFER TO SPECIFICATION 201-01-148 AND APPLICATION 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.

### 70-9159-001-411-006
### LOCKING PLUG CONTACT



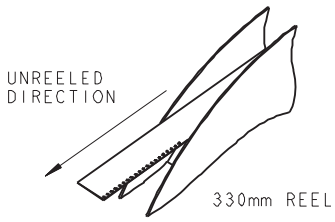



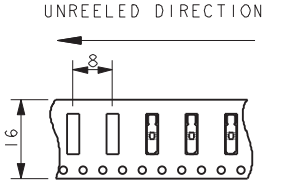




### SUGGESTED PCB LAYOUT

### PACKING DETAILS



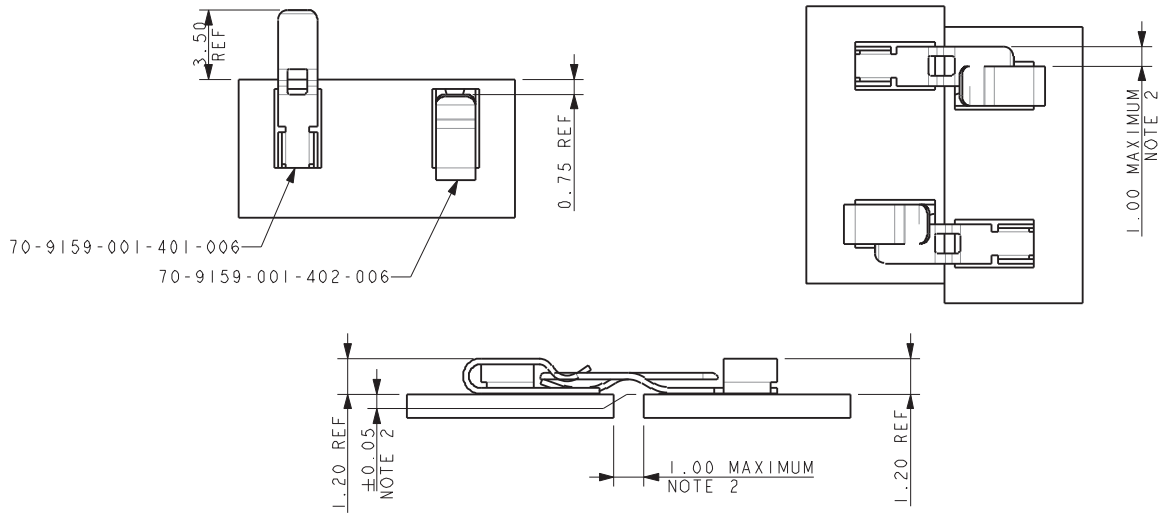

QUANTITY PER REEL 4500

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. THIS VERSION OF CONTACT IS NOT CURRENTLY UL APPROVED.
9. AREA AVAILABLE FOR PICK AND PLACE.

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

### STANDARD CONTACT

**70-9159-001-401-006 Plus 70-9159-001-402-006**

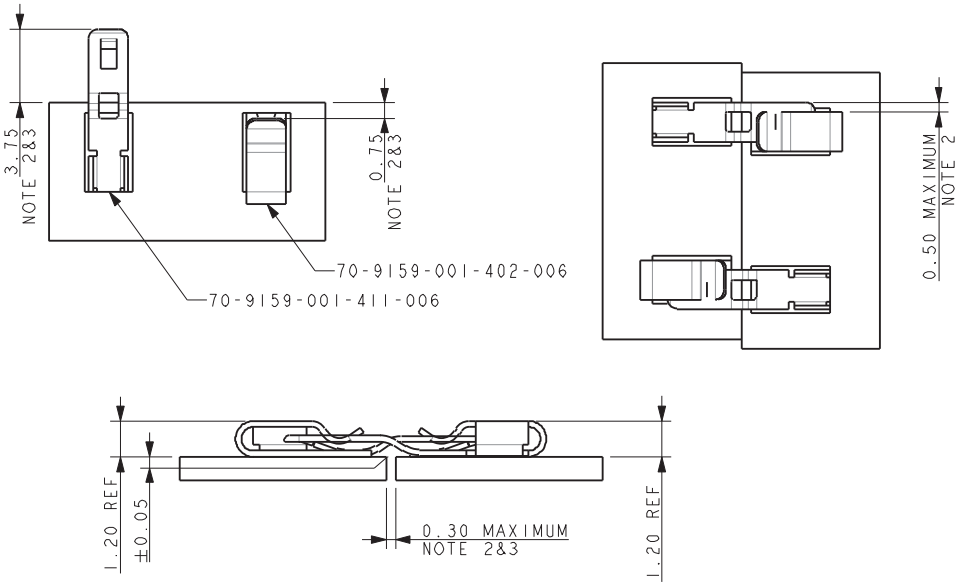



NOTES:

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

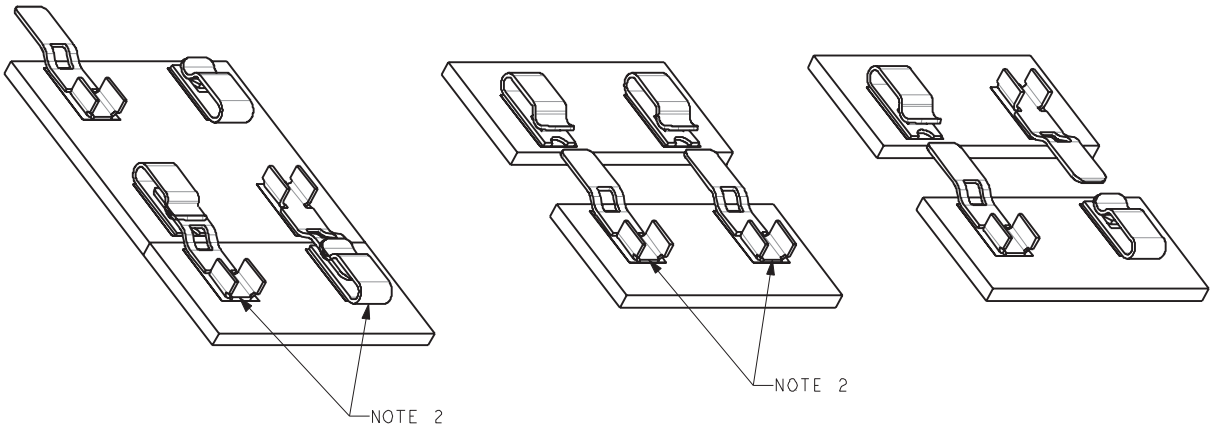
**70-9159-001-411-006 Plus 70-9159-001-402-006**

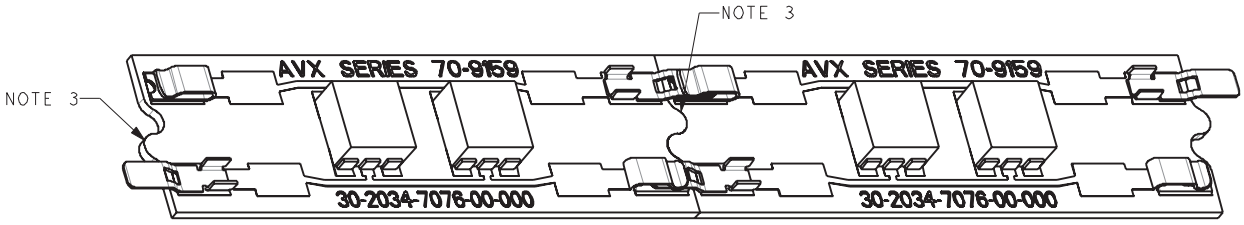



NOTES:

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.

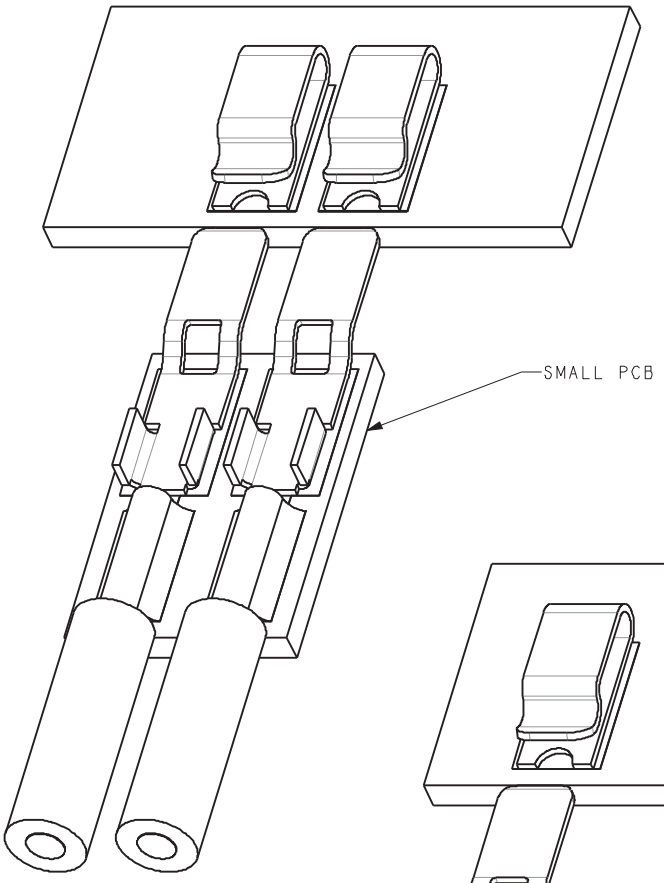
### 70-9159-001-40X-006
### BOARD TO BOARD ASSEMBLY



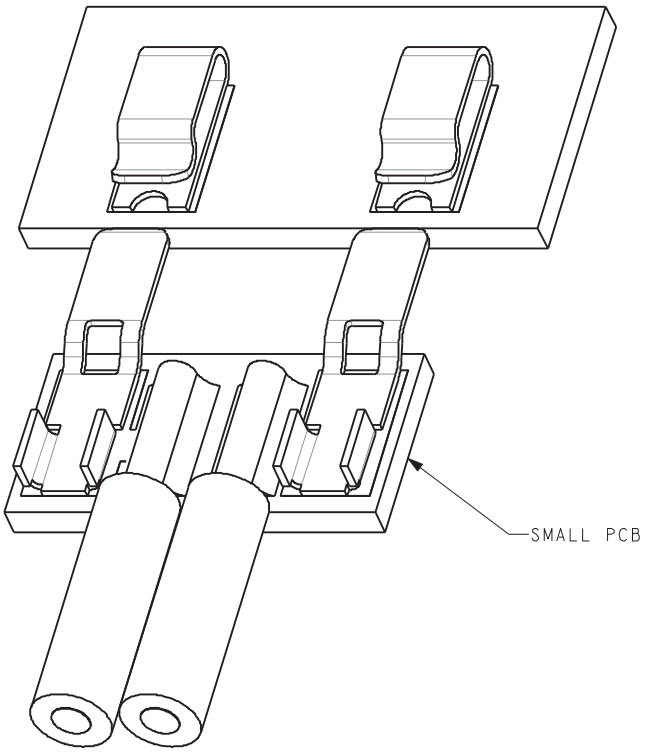




NOTES:
1. SIMPLE BOARD TO BOARD LINK.
2. ALL MATING COMBINATIONS PERMISSIBLE. FOR EXAMPLE BY USING ONE PLUG AND ONE SOCKET CONTACT THE BOARD ENDS ARE REVEALABLE.
3. FEATURES CAN BE ADDED TO BOARD ENDS TO RESIST SIDEWAYS MOVEMENT.

### 70-9159-001-40X-006
### SIMPLE COMPACT WIRED PLUG ASSEMBLIES




**SLIM WIRED PLUG**
**LESS THAN 6MM WIRE**




**SHORT WIRED PLUG**
**LESS THAN 5MM DEEP**

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.

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- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
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- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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**«FORSTAR»** (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).

FORSTAR®

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