

## Decoupled Connectors

### Product Facts

- Built-in chip capacitors filter high-frequency noise to panel ground
- PC board mounting with vertical and standard or low-profile right-angle configurations
- Cable mount bulkhead BNC version available
- Drop-in replacement for Tyco Electronics standard BNC printed circuit board connectors
- One-piece design and robotic capacity to reduce assembly time



Tyco Electronics capacitively decoupled connectors provide the fast, better way to reduce noise and reduce ground loops on coaxial interconnections. The high-frequency noise generated by fast rise times can cause both false triggering of circuits as well as emissions that can be radiated or conducted outside the equipment. Such emissions can interfere with nearby equipment. Ground loops are also a problem for networked systems. Ground loops are caused when two interconnected units are at different voltage potentials.

The typical way to handle such EMI and ground loop problems is to decouple the cable shield from the ground panel by soldering a ceramic disk capacitor between the cable shield and the panel. The capacitor shunts high-frequency noise to ground. While effective, this approach is time consuming and expensive.

The Capacitively Decoupled connector has built-in chip capacitors. These capacitors establish the electrical contact between the outer shield and a clip. This clip provides a short electrical

path between the capacitors and panel. As a result, high-frequency noise is effectively shunted to ground, while the DC path is blocked.

The connectors offer compatibility in design and manufacture. The same footprint and dimensional envelope make them a drop-in replacement for Tyco Electronics standard BNC or TNC printed circuit board connectors. In addition, they can be robotically picked and placed for high-speed automated assembly to pc boards.

### Product Specification

108-1263 — BNC Decoupled PCB Press-Fit Connection

108-1269 — BNC Decoupled PCB Connectors

108-1490 — BNC Decoupled Cable Mount

## Decoupled Connectors (Continued)

### PC Board/Panel Mount Jacks Decoupled to Panel

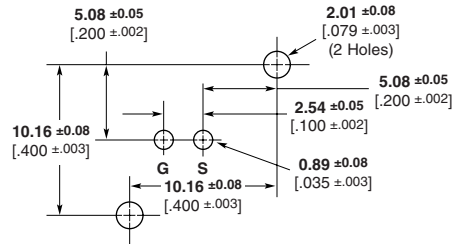
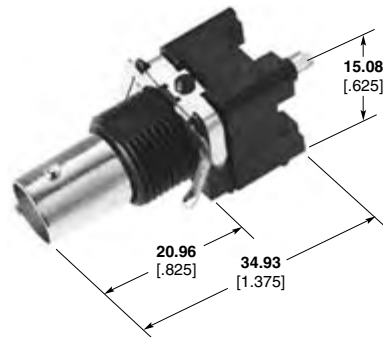
#### Style A Vertical BNC

#### Material

**Body** — VALOX, black  
**Dielectric** — Polymethylpentene

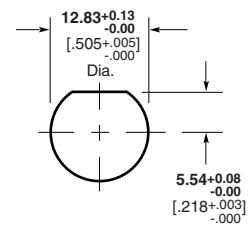
**Note:** Both styles are shown with a standard clip. See next page for other clip styles.

For height dimensions see chart on page 85.



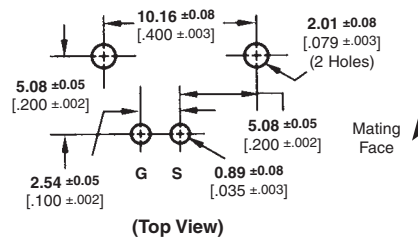
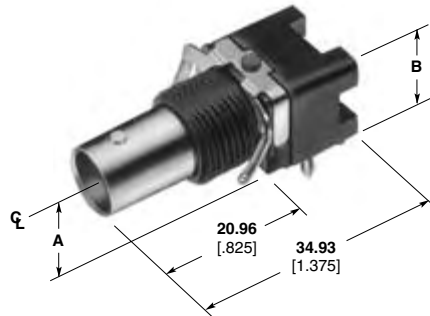
(Top View)

Recommended PC Board Layout



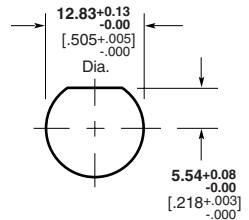
Maximum Panel Thickness 6.1 [0.240]  
Recommended Panel Cutout

#### Style B Right-Angle BNC



(Top View)

Recommended PC Board Layout

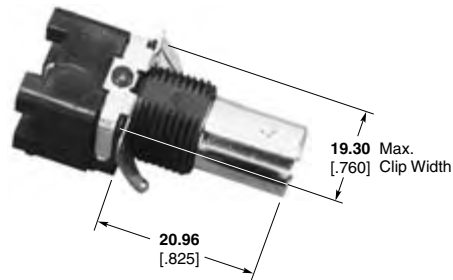


Maximum Panel Thickness 6.1 [0.240]  
Recommended Panel Cutout

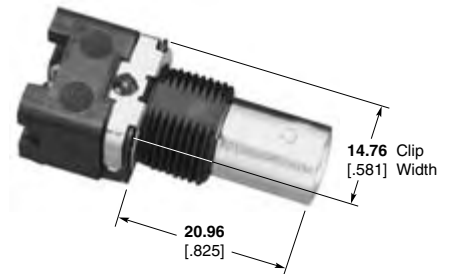
VALOX is a trademark of General Electric Company.

## Decoupled Connectors (Continued)

### Clip Styles

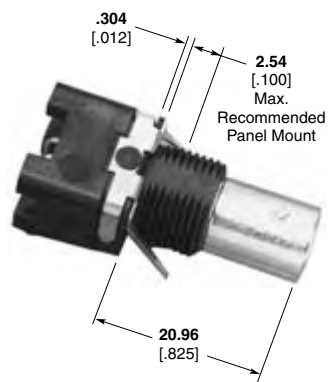


**Standard**



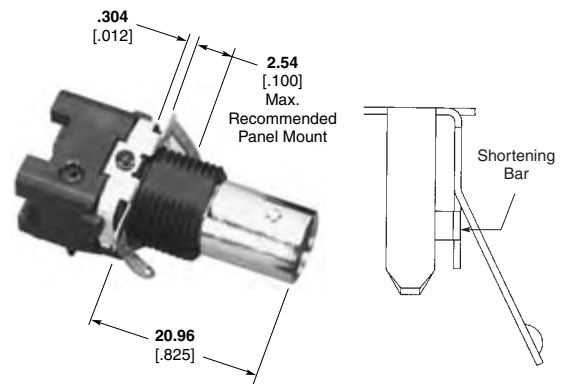
**Flush**

For closer centerline-to-centerline connector spacing



**Extended**

For use with or without a jam nut



**Short Electrical Path**

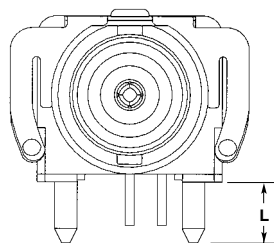
For reduced series inductance in ground path

## Decoupled Connectors (Continued)

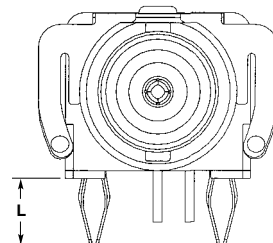
### PC Board/Panel Mount Jacks Decoupled to Panel

(Continued)

#### Mounting Post Styles



Standard



Compliant

### BNC

| Description                                                                     | Capacitance/<br>Voltage | Clip     | Mounting<br>Post | L<br>Mounting<br>Post Length | B*            | A*            | Style <sup>1</sup> | Part<br>No. |
|---------------------------------------------------------------------------------|-------------------------|----------|------------------|------------------------------|---------------|---------------|--------------------|-------------|
| Vertical<br>50Ω                                                                 | 9400pF<br>1500VDC       | Standard | Standard         | 3.48<br>.137                 | —             | —             | A                  | 5413476-2   |
| Standard<br>Right-Angle<br>50Ω                                                  | 9400pF<br>1500VDC       | Standard | Standard         | 4.01<br>.158                 | 15.88<br>.625 | 8.59<br>.338  | B                  | 5413524-2   |
|                                                                                 | 9400pF<br>1500VDC       | Standard | Compliant        | 2.79<br>.110                 | 15.88<br>.625 | 8.59<br>.338  | B                  | 5413524-5   |
| Standard Right-Angle<br>W/O Mounting Post 50Ω <sup>2</sup>                      | 9400pF<br>1500VDC       | Standard | —                | —                            | 15.88<br>.625 | 8.59<br>.338  | B                  | 5414215-1   |
| Low Profile<br>Right-Angle<br>50Ω                                               | 9400pF<br>1500VDC       | Standard | Standard         | 4.01<br>.158                 | 13.18<br>.519 | 6.91<br>.272  | B                  | 5413515-2   |
|                                                                                 | 20000pF<br>500VDC       | Standard | Standard         | 4.01<br>.158                 | 13.18<br>.519 | 6.91<br>.272  | B                  | 5413515-3   |
|                                                                                 | 7900pF<br>1600VDC       | Standard | Compliant        | 2.79<br>.110                 | 13.18<br>.519 | 6.91<br>.272  | B                  | 5413515-7   |
|                                                                                 | 9400pF<br>1500VDC       | Standard | Compliant        | 4.70<br>.185                 | 13.18<br>.519 | 6.91<br>.272  | B                  | 5413515-8   |
|                                                                                 | 9400pF<br>1500VDC       | Standard | Compliant        | 2.79<br>.110                 | 13.18<br>.519 | 6.91<br>.272  | B                  | 5413515-9   |
| Low Profile Right-<br>Angle W/Special Clip<br>& High Temperature<br>Housing 50Ω | 9400pF<br>500VDC        | Extended | Compliant        | 2.79<br>.110                 | 13.18<br>.519 | 6.91<br>.272  | B                  | 5414284-2   |
| Low Profile<br>Right-Angle<br>W/High Temperature<br>Housing 50Ω                 | 9400pF<br>500VDC        | Flush    | Compliant        | 4.70<br>.185                 | 13.18<br>.519 | 6.91<br>.272  | B                  | 5414352-1   |
| Low Profile<br>Right-Angle 75Ω                                                  | 9400pF<br>1500VDC       | Standard | Standard         | 4.01<br>.158                 | 13.18<br>.519 | —             | B                  | 5414094-2   |
| Ultra Low Profile<br>Right-Angle<br>75 Ω                                        | 9400pF<br>1500VDC       | Standard | Standard         | 4.01<br>.158                 | 6.17<br>.243  | 11.68<br>.460 | —                  | 5415103-1   |
|                                                                                 | 9400pF<br>1500VDC       | Standard | Compliant        | 2.79<br>.110                 | 6.17<br>.243  | 11.68<br>.460 | —                  | 5415103-2   |

<sup>1</sup>See pages 83 and 84 for Connector Styles.

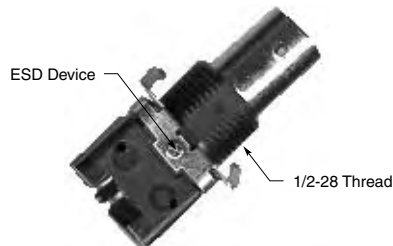
<sup>2</sup>See customer drawing for PC Board Layout.

\*See page 83 for dimension reference.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## Decoupled Connectors (Continued)

### Right-Angle BNC Jack PC Board/Panel Mount Decoupled to Panel ESD Protected



See page 83 Style B for panel cutout and recommended PC board configuration.

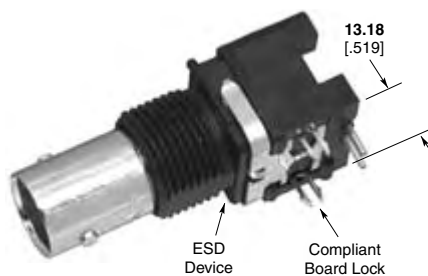
**Note:** See Tyco Electronics Customer drawing for voltage breakdown rating.

| Description                                     | Capacitance/<br>Voltage | Contact<br>Plating | Clip     | Mounting<br>Post | L<br>Mounting<br>Post Length | B*            | A*           | Part<br>No. |
|-------------------------------------------------|-------------------------|--------------------|----------|------------------|------------------------------|---------------|--------------|-------------|
| <b>50Ω Product</b>                              |                         |                    |          |                  |                              |               |              |             |
| Low Profile<br>Right-Angle<br>W/ ESD Protection | 7900pF<br>1500VDC       | Gold1              | Standard | Compliant        | 2.79<br>.110                 | 13.18<br>.519 | 6.91<br>.272 | 5414651-3   |
| <b>75Ω Product</b>                              |                         |                    |          |                  |                              |               |              |             |
| Standard<br>Right-Angle<br>W/ ESD Protection    | 9400pF<br>1500VDC       | Gold1              | Standard | Standard         | 4.01<br>.158                 | 15.88<br>.625 | 8.59<br>.338 | 5415085-1   |
| Low Profile<br>Right-Angle<br>ESD Protected     | 9400pF<br>1500VDC       | Gold1              | Flush    | Compliant        | 2.79<br>.110                 | 13.18<br>.519 | 6.91<br>.272 | 5415216-1   |

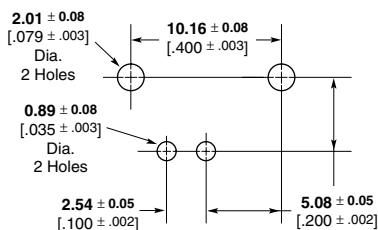
\*See page 83 for dimension reference.

### Right-Angle BNC Jack PC Board/Panel Mount Decoupled to Board ESD Protected

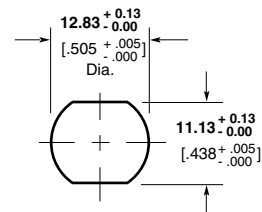
| Capacitance | Voltage |
|-------------|---------|
| 9400pF      | 1500VDC |



Part No. 5415205-1



Recommended PC Board Layout



Recommended Panel Cutout

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## Decoupled Connectors (Continued)

### Press-Fit, Vertical BNC Jacks, PC Board Mount Decoupled to Board

#### Material

**Dielectric**—TEFLON

**Isolation Pad**—Polyester

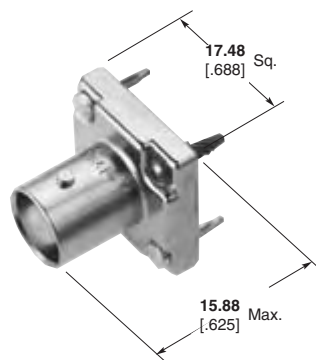
#### Plating

**Body**—Nickel

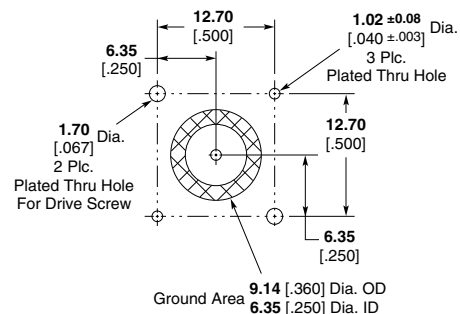
**Ground Clip**—Nickel

**Center Contact**—Gold

**Action Pin Legs**—Gold

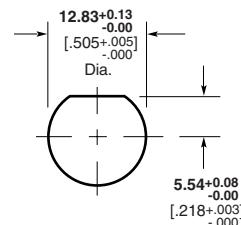
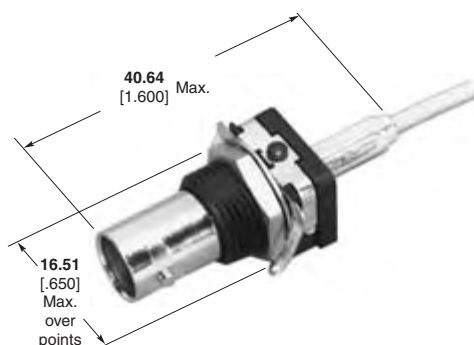


**Part No. 5414553-1 50 Ohm**  
**Part No. 5414493-4 75 Ohm**



**Recommended PC Board Layout**

### BNC Bulkhead Jacks, Crimp



**Recommended Panel Cutout**

| Description | RG/U Cable                   | Termination Type | Center Contact Plating | Body Plating | Dielectric        | Style      | Interchangeable Dies for Hand Tool 69710-1 & 626 Pneu. Head 318161-1 | Part No.         |
|-------------|------------------------------|------------------|------------------------|--------------|-------------------|------------|----------------------------------------------------------------------|------------------|
| 50Ω         | RG 58, 58A, 58B, 58C         | Hex Crimp        | Gold                   | Nickel       | Polymethylpentene | Commercial | 58436-1                                                              | <b>5414758-1</b> |
| 50Ω         | RG 174, 174A, 316, 188, 188A | Hex Crimp        | Gold                   | Nickel       | Polymethylpentene | Commercial | 58436-3                                                              | <b>5414758-2</b> |
| 50Ω         | RG 174, 174A, 316, 188, 188A | Hex Crimp        | Gold                   | Nickel       | Polymethylpentene | Commercial | 58436-3                                                              | <b>5414758-3</b> |
| 75Ω ESD     | RG 179, 187                  | Hex Crimp        | Gold                   | Nickel       | Polymethylpentene | Commercial | 58425-2                                                              | <b>5415779-1</b> |

TEFLON is a trademark of E.I. Dupont de Nemours and Company.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.