

## 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**

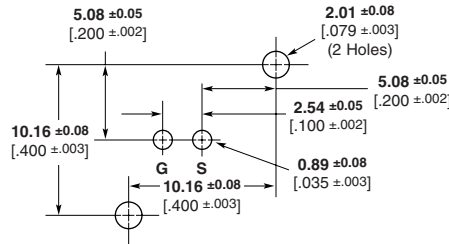
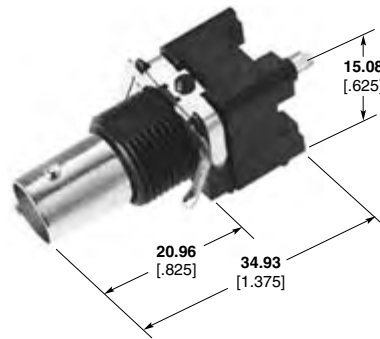
**Style A  
Vertical BNC**

**Material**

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

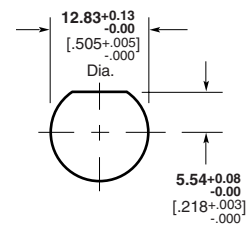
**Note:** Both styles are shown with a standard clip. See next page for other clip styles.

For height dimensions see chart on page 85.



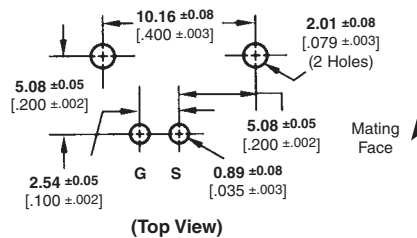
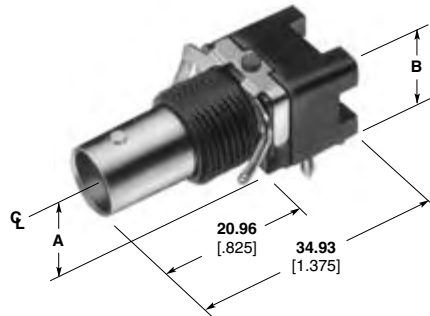
(Top View)

**Recommended PC Board Layout**



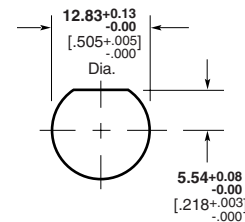
Maximum Panel Thickness 6.1 [0.240]  
**Recommended Panel Cutout**

**Style B  
Right-Angle BNC**



(Top View)

**Recommended PC Board Layout**

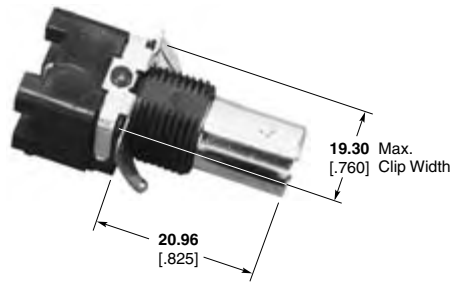


Maximum Panel Thickness 6.1 [0.240]  
**Recommended Panel Cutout**

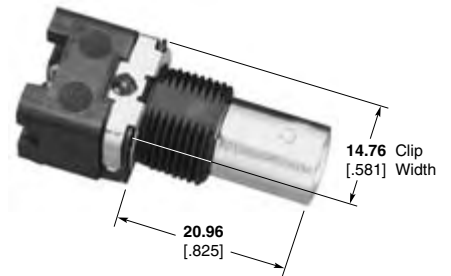
VALOX is a trademark of General Electric Company.

**Decoupled Connectors** (Continued)

**Clip Styles**

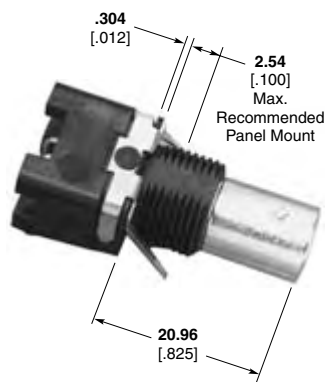


**Standard**



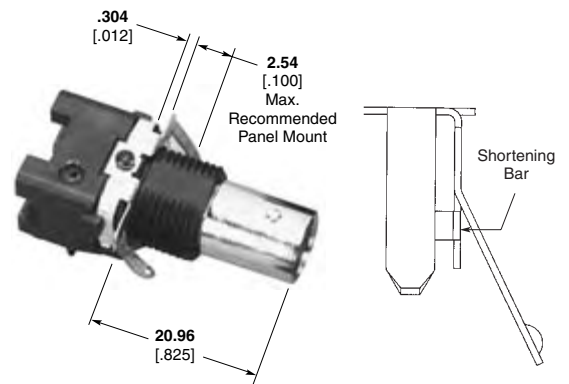
**Flush**

For closer centerline-to-centerline connector spacing



**Extended**

For use with or without a jam nut



**Short Electrical Path**

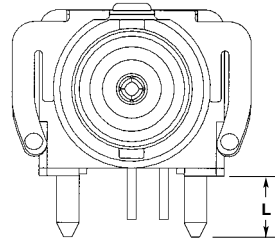
For reduced series inductance in ground path

**Decoupled Connectors** (Continued)

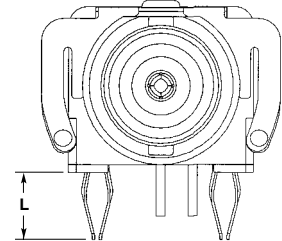
**PC Board/Panel Mount  
Jacks Decoupled to Panel**

(Continued)

**Mounting Post Styles**



**Standard**



**Compliant**

**BNC**

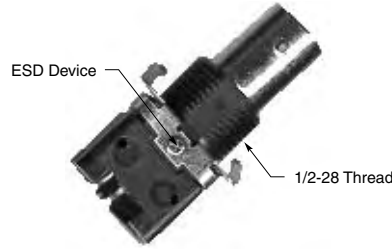
Description	Capacitance/ Voltage	Clip	Mounting Post	L Mounting Post Length	B*	A*	Style <sup>1</sup>	Part No.
Vertical 50Ω	9400pF 1500VDC	Standard	Standard	3.48 .137	—	—	A	5413476-2
Standard Right-Angle 50Ω	9400pF 1500VDC	Standard	Standard	4.01 .158	15.88 .625	8.59 .338	B	5413524-2
	9400pF 1500VDC	Standard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

<sup>1</sup>See pages 83 and 84 for Connector Styles.  
<sup>2</sup>See customer drawing for PC Board Layout.  
<sup>\*</sup>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.

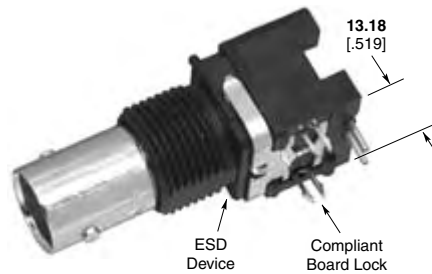
**Note:** See Tyco Electronics Customer drawing for voltage breakdown rating.

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

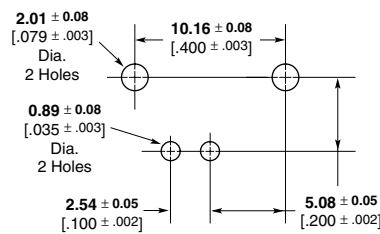
\*See page 83 for dimension reference.

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

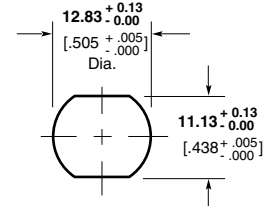
Capacitance	Voltage
9400pF	1500VDC



Part No. 5415205-1



Recommended PC Board Layout



Recommended Panel Cutout

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

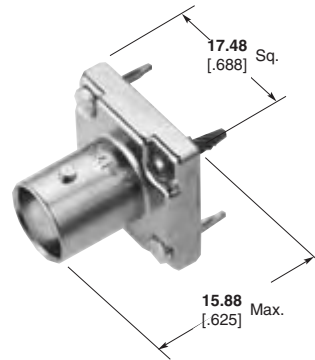
**Decoupled Connectors** (Continued)

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

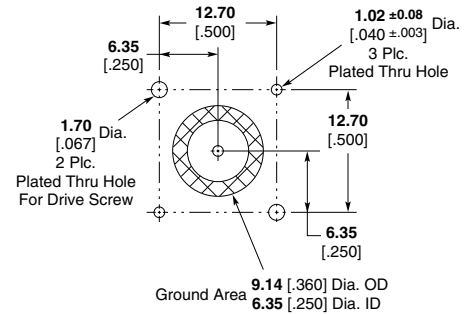
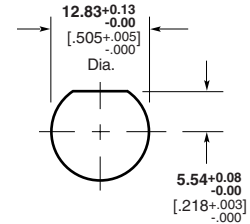
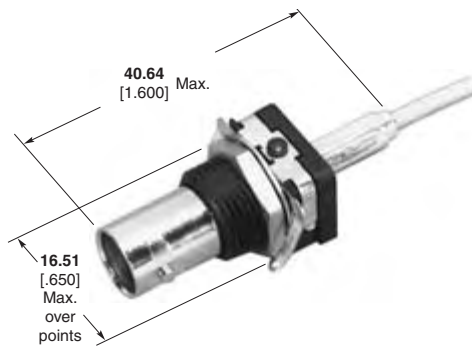
**Dielectric**—TEFLON  
**Isolation Pad**—Polyester

**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>

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