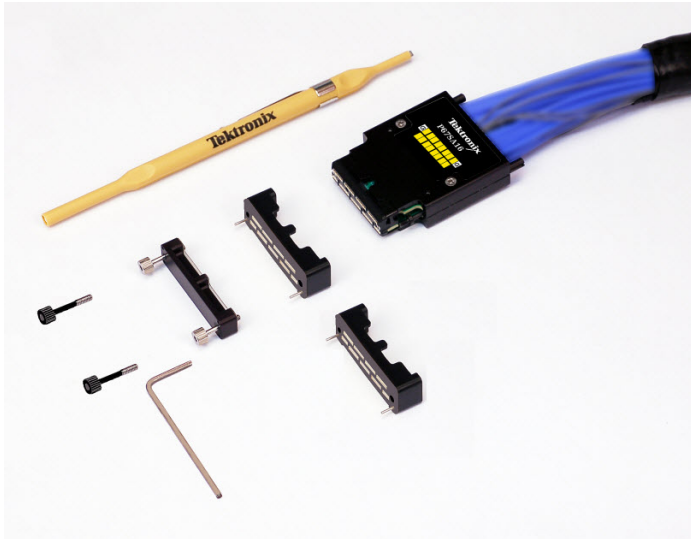


# Tektronix Protocol Analyzer Probes

## P67SA00 Series Datasheet



The P67SA00 Series probes provide validation engineers with a comprehensive set of PCI Express probing solutions, including midbus, slot interposer, and solder-down connectors.

### Notice to EU customers

This product is not updated to comply with the RoHS 2 Directive 2011/65/EU and will not be shipped to the EU. Customers may be able to purchase products from inventory that were placed on the EU market prior to July 22, 2017 until supplies are depleted. Tektronix is committed to helping you with your solution needs. Please contact your local sales representative for further assistance or to determine if alternative product(s) are available. Tektronix will continue service to the end of worldwide support life.

### Features and benefits

- <0.7 pF Total capacitive loading minimizes intrusion on circuits
- 20 k $\Omega$  Input resistance
- 6.5 V<sub>p-p</sub> Dynamic range supports a broad range of logic families
- General-purpose probing allows flexible attachment to industry-standard connections
- Connectorless probing system eliminates need for onboard connectors

### Applications

- Hardware debug and verification
- Processor/Bus debug and verification
- Embedded software integration, debug, and verification

### Leading probing solutions for real-time digital systems analysis

#### P67SA00 Series Probes for PCI Express

The P67SA00 Series probes provide validation engineers with a comprehensive set of PCI Express probing solutions, including midbus, slot interposer, and solder-down connectors. With support for PCI Express Gen3 channel lengths up to 24 in. with 2 connectors, these probes offer minimal electrical loading with the highest signal fidelity and active equalization to ensure accurate data recovery of closed eyes. All P67SA00 Series probes feature a graphical lane swizzling capability for maximum flexibility to accommodate unique circuit board layouts.

## Specifications

All specifications are guaranteed unless noted otherwise. All specifications apply to all models unless noted otherwise.

### P67SA00 Series Probe characteristics

#### General characteristics

| Characteristic               | P67SA08  | P67SA16  | P67SA04S  | P67SA08S  | P67SA16S  | P67SA01SD   |
|------------------------------|--|--|---|---|---|---|
| Probe type                   | PCI Express Midbus Differential Data           | PCI Express Midbus Differential Data           | PCI Express Slot Interposer   | PCI Express Slot Interposer   | PCI Express Slot Interposer   | PCI Express Differential Solder-down Probe  |
| Number of differential pairs | 8  | 16   | 4   | 16  | 32  | 1   |
| Recommended use              | Recommended where signal integrity is critical | Recommended where signal integrity is critical | Recommended for platforms with no midbus footprints and the PCI Express slot is the only probe access point | Recommended for platforms with no midbus footprints and the PCI Express slot is the only probe access point | Recommended for platforms with no midbus footprints and the PCI Express slot is the only probe access point | Recommended for platforms with no midbus footprint, PCI Express slot; or where space is limited |
| Attachment to target system  | Compression cSpring                            | Compression cSpring                            | PCI Express Slot  | PCI Express Slot  | PCI Express Slot  | Solder Down   |
| Probe loading AC/DC          | See P67SA00 Series Probe Manual                |  |   |   |   |   |
| Cable length                 | 1.8 m (6 ft.)                                  |  |   |   |   |   |

#### Midbus probe recommended configuration

| X1                    | X4                    | X8                    | X16                   |
|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 P67SA08, 1 TLA7SA08 | 1 P67SA08, 1 TLA7SA08 | 1 P67SA16, 1 TLA7SA16 | 2 P67SA16, 2 TLA7SA16 |

#### Slot Interposer probe recommended configuration

| X1                     | X4                     | X8                     | X16                    |
|------------------------|------------------------|------------------------|------------------------|
| 1 P67SA01S, 1 TLA7SA08 | 1 P67SA04S, 1 TLA7SA08 | 1 P67SA08S, 1 TLA7SA16 | 1 P67SA16S, 2 TLA7SA16 |

#### Solder-down probe recommended configuration

| X1                      | X4                      | X8                       | X16                      |
|-------------------------|-------------------------|--------------------------|--------------------------|
| 2 P67SA01SD, 1 TLA7SA08 | 8 P67SA01SD, 1 TLA7SA08 | 16 P67SA01SD, 1 TLA7SA16 | 32 P67SA01SD, 2 TLA7SA16 |

## Ordering information

### Tektronix Protocol Analyzer probes

|                  |   |
|------------------|---|
| <b>P67SA08</b>   | 8 Differential pairs PCI Express Midbus probe and accessories<br>Includes: Statement of Compliance, (2) 8-channel Retention Mechanisms, Velcro Cable Managers, Probe Instruction Manual                                 |
| <b>P67SA16</b>   | 16 Differential pairs PCI Express Midbus probe and accessories<br>Includes: Statement of Compliance, (2) 16-channel Retention Mechanisms, Velcro Cable Managers, Probe Instruction Manual                               |
| <b>P67SA04S</b>  | x4 PCI Express Slot Interposer<br>Includes: Statement of Compliance, Velcro Cable Managers, Probe Instruction Manual  |
| <b>P67SA08S</b>  | x8 PCI Express Slot Interposer<br>Includes: Statement of Compliance, Velcro Cable Managers, Probe Instruction Manual  |
| <b>P67SA16S</b>  | x16 PCI Express Slot Interposer<br>Includes: Statement of Compliance, Velcro Cable Managers, Probe Instruction Manual   |
| <b>P67SA01SD</b> | x1 PCI Express Differential Solder-down Probe<br>Includes: Statement of Compliance, Velcro Cable Managers, Probe Instruction Manual<br>Option 1P: Probe Power Adapter (1 required for every eight (8) P67SA01SD probes) |

### Standard accessories

#### P67SA00 Series Midbus standard accessories

##### P67SA08

| Description                     | Quantity per probe | Part number |
|---------------------------------|--------------------|-------------|
| Retention mechanisms            | 1                  | 020-4008-00 |
| Probe adjustment tool           | 1                  | 003-1890-xx |
| Velcro cable manager (bag of 2) | 1                  | 346-0300-xx |

##### P67SA16

| Description                     | Quantity per probe | Part number |
|---------------------------------|--------------------|-------------|
| Retention mechanisms            | 1                  | 020-4016-00 |
| Probe adjustment tool           | 1                  | 003-1890-xx |
| Velcro cable manager (bag of 2) | 1                  | 346-0300-xx |

#### P67SA01SD Solder-Down standard accessories

| Description  | Quantity per probe | Part number |
|--|--------------------|-------------|
| TriMode™ Long Reach solder tip                                       | 1                  | P75TLRST    |
| Storage case   | 1                  | 016-2009-xx |
| Solder tip tape (strip of 10)  | 1                  | 006-8237-xx |
| 1 –004 wire / 1 –008 wire / 1 – SAC305 solder (Package of 3 bobbins) | 1                  | 020-2754-xx |
| Hook and Loop fastening straps and dots                              | 1                  | 016-1953-xx |
| Installation sheet   | 1                  | 071-2503-xx |

#### P67SA01SD Solder-Down required accessories

| Description   | Quantity <sup>1</sup> | Part number |
|---------------|-----------------------|-------------|
| Power adapter | 1                     | 870-0509-00 |

<sup>1</sup> See Solder-down Probe Configuration for Required Quantities.

## Optional accessories

P67SA01SD Solder-Down optional accessories

| Description                 | Quantity  | Part number |
|-----------------------------|-----------|-------------|
| Bullet removal tool         | 1         | 003-1896-xx |
| Replacement bullet contacts | Pack of 4 | 003-0359-xx |

## Options

### Language options

|          |                |
|----------|----------------|
| Opt. L0  | English manual |
| Opt. L99 | No manual      |

### Service options

Customers who choose a Tektronix product receive a support partnership focused on making the deployment and operation of their products successful. Tektronix support teams are committed to providing rapid response. A broad range of flexible services is available at the time of product purchase to meet customer service needs.

The following service options are offered for the P67SA00 Series protocol analyzer probes.

|           |   |
|-----------|---|
| Opt. C3   | Calibration Service 3 Years   |
| Opt. C5   | Calibration Service 5 Years   |
| Opt. R3   | Repair Service 3 Years (including warranty)   |
| Opt. R3DW | Repair Service Coverage 3 Years (includes product warranty period). 3-year period starts at time of instrument purchase |
| Opt. R5   | Repair Service 5 Years (including warranty)   |
| Opt. R5DW | Repair Service Coverage 5 Years (includes product warranty period). 5-year period starts at time of instrument purchase |



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ASEAN / Australasia (65) 6356 3900  
 Belgium 00800 2255 4835\*  
 Central East Europe and the Baltics +41 52 675 3777  
 Finland +41 52 675 3777  
 Hong Kong 400 820 5835  
 Japan 81 (3) 6714 3086  
 Middle East, Asia, and North Africa +41 52 675 3777  
 People's Republic of China 400 820 5835  
 Republic of Korea +822 6917 5084, 822 6917 5080  
 Spain 00800 2255 4835\*  
 Taiwan 886 (2) 2656 6688

Austria 00800 2255 4835\*  
 Brazil +55 (11) 3759 7627  
 Central Europe & Greece +41 52 675 3777  
 France 00800 2255 4835\*  
 India 000 800 650 1835  
 Luxembourg +41 52 675 3777  
 The Netherlands 00800 2255 4835\*  
 Poland +41 52 675 3777  
 Russia & CIS +7 (495) 6647564  
 Sweden 00800 2255 4835\*  
 United Kingdom & Ireland 00800 2255 4835\*

Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777  
 Canada 1 800 833 9200  
 Denmark +45 80 88 1401  
 Germany 00800 2255 4835\*  
 Italy 00800 2255 4835\*  
 Mexico, Central/South America & Caribbean 52 (55) 56 04 50 90  
 Norway 800 16098  
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 South Africa +41 52 675 3777  
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\* European toll-free number. If not accessible, call: +41 52 675 3777

**For Further Information.** Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit [www.tek.com](http://www.tek.com).

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