Passive High-voltage Probes

P5100A • TPP0850 • P5122 • P5150 • P6015A Data Sheet

**Features & Benefits**

**P5100A**
- DC to 500 MHz
- 2500 V<sub>Peak</sub>, 1000 V<sub>RMS</sub> CAT II
- 100X with Readout Coding
- UL3111-1, EN61010-1, IEC61010-2-031, CSA1010.1, CSA1010.2.031
- 7 to 30 pF Compensation Range

**TPP0850**
- DC to 800 MHz
- 2500 V<sub>Peak</sub>, 1000 V<sub>RMS</sub> CAT II
- 50X with Readout Coding
- Designed for use with the MSO/DPO5000 and MSO/DPO4000B Series Oscilloscopes

**P5122**
- For TPS2000 and THS3000 Series Oscilloscopes
- DC to 200 MHz
- 1000 V<sub>RMS</sub> CAT II when DC-coupled<sup>*</sup>
- Floatable up to 600 V<sub>RMS</sub> CAT II
- 100X
- IEC61010-031

**P5150**
- For TPS2000 and THS3000 Series Oscilloscopes
- DC to 500 MHz
- 2500 V<sub>Peak</sub>, 1000 V<sub>RMS</sub> CAT II
- Floatable up to 600 V<sub>RMS</sub> CAT II or 300 V<sub>RMS</sub> CAT III
- Preferred Probe for Ripple Measurements
- 50X
- 10 to 25 pF Compensation Range
- UL61010B-2-031, EN61010-2-031, IEC61010-2-031, CSA61010.2.031

**P6015A**
- High Voltage – 20 kV DC / 40 kV Peak (100 ms Pulse Width)
- High Bandwidth – DC to 75 MHz
- Silicone Dielectric
- Optional 1000X Readout Coding
- Wide Compensation Range (7 to 49 pF)
- Heavy-duty Versatile Ground Lead and Alligator Clip
Applications

- Power Supply Design
- Design Motor Drive
- Electronic Ballast
- Power Semiconductors
- Switch Mode Control
- UPS Systems
- Power Converters

*1 The P5122 probe should not be used on the TPS2000 Series oscilloscopes for AC-coupled measurements on signals with greater than 300 V DC offset. The P5150 is the recommended probe for measuring ripple on high-voltage DC supplies.

P5100A High-voltage Probe
The P5100A is a low input capacitance high-voltage probe (2.5 kV) designed for higher-frequency applications. The probe can be compensated to match plug-ins and oscilloscopes with nominal input capacitances of 7-30 pF. A variety of screw-on accessories provide easy connection to the device-under-test.

TPP0850 High-voltage Probe
The TPP0850 offers the industry’s highest bandwidth probe (800 MHz) for high-voltage signals (up to 2500 V_{p-p}). This is ideal for testing power semiconductors and switch-mode power supplies, which continue to increase in switching speed to minimize power loss, creating a need for faster rise time, higher bandwidth, and higher voltage probes. The TPP0850 meets this need and can be used with switching transistor circuits operating at 1200 V_{rms}, above the voltage operating range of standard general-purpose probes. It will also be able to accommodate emerging power applications that will require even faster rise time capabilities.

P5150 and P5122 IsolatedChannel™ Applications
In many applications, it is important to be able to isolate the measurement from earth ground and also to isolate the common voltage between channels. The P5150 or P5122, coupled with the TPS2000 and THS3000 Series digital storage oscilloscopes, deliver both the isolation for the measurement from earth ground and full isolation between the channels. The P5150 is the recommended probe for measuring ripple on high-voltage DC supplies. The P5122 probe should not be used on the TPS2000 Series oscilloscopes for AC-coupled measurements on signals with greater than 300 V DC offset.

P6015A High-voltage Probe
For heavy-duty high-performance measurements of voltages over 2.5 kV, the P6015A is the industry standard. You can measure DC voltages up to 20 kV_{rms} and pulses up to 40 kV (peak, 100 ms duration). The 75 MHz bandwidth enables you to capture fast, high-voltage signals. The P6015A uses an environmentally safe silicone compound for a dielectric and never needs refilling. Other features include: A 7-49 pF compensation range, small compensation box that fits on adjacent amplifier inputs, and a readout option for use with most Tektronix digital scopes. With the readout option, displayed voltage amplitude values will be the actual signal value rather than understated by a factor of 1,000.

Note: Using the readout version with other than Tektronix digital scopes may result in an erroneous readout display.
Passive High-voltage Probes — P5100A • TPP0850 • P5122 • P5150 • P6015A

Characteristics

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<th>Probe</th>
<th>Nominal Length</th>
<th>Attenuation</th>
<th>Bandwidth</th>
<th>Rise Time (Typical)</th>
<th>Loading</th>
<th>Max. Input V DC or RMS</th>
<th>Max. Float V</th>
<th>Comp. Range in pF</th>
<th>Readout</th>
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</table>
| P5100A    | 2 m            | 100X        | 500 MHz   | <700 ps             | 40 MΩ / 2.5 pF | 1000 V
|           |                |             |           |                     | 2.5 kV_{peak} | CAT II       | N/A          | 7 to 30          | Yes     |
| TPP0850   | 1.3 m          | 50X         | 800 MHz   | <525 ps             | 40 MΩ / 1.8 pF | 1000 V
|           |                |             |           |                     | 2.5 kV_{peak} | CAT II       | N/A          | N/A              | Yes     |
| P5122     | 1.2 m          | 100X        | 200 MHz   | 2.2 ns              | 100 MΩ / 4.0 pF | 1000 V
|           |                |             |           |                     | 1000 V_{RMS} CAT II | 600 V_{RMS} CAT II | 10 to 22 | No                |
| P5150     | 2 m            | 50X         | 500 MHz   | <700 ps             | 40 MΩ / 3.8 pF | 1000 V
|           |                |             |           |                     | 2.5 kV_{peak} | 600 V_{RMS} CAT II | 1000 V_{RMS} CAT II | 10 to 25 | No                |
| P6015A    | 3 m            | 1000X       | 75 MHz    | 4.0 ns              | 100 MΩ / 3 pF | 1000 V
|           |                |             |           |                     | 20 kV       | N/A         | 7 to 49       | No                |
| P6015A Opt. 1R | 3 m          | 1000X       | 75 MHz    | 4.0 ns              | 100 MΩ / 3 pF | 1000 V
|           |                |             |           |                     | 20 kV       | N/A         | 7 to 49       | Yes               |

Ordering Information

P5100A/TPP0850
High-voltage Probes.
Includes: Large hook tip (013-0384-xx), small hook tip (013-0386-xx), 6 in. ground lead (196-3524-xx), 18 in. ground lead (196-3525-xx), ground spring (214-5298-xx), crocodile clip (344-0461-xx), adjustment tool (003-1433-xx), color bands (016-1886-xx).

Recommended Accessories

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<tr>
<td>013-0291-xx</td>
<td>Probe Tip to BNC Adapter</td>
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<tr>
<td>206-0060-xx</td>
<td>0.080 in. diameter Spring Tip</td>
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P5122
100X, High-voltage Probe for TPS2000 and THS3000 Series Oscilloscopes.
Includes: Large retractable hook tip, lead with hook tip, lead with crocodile clip, adjustment tool, instruction manual.

Recommended Accessories for P5122

See P5100A/TPP0850 Recommended Accessories.

P5150
50X, High-voltage Probe for TPS2000 and THS3000 Series Oscilloscopes.
Includes: Large hook tip (013-0389-xx), small hook tip (013-0388-xx), 6 in. ground lead (196-3526-xx), 18 in. ground lead (196-3527-xx), common spring (214-5299-xx), crocodile clip (344-0461-xx), color bands (016-1886-xx), adjustment tool (003-1433-xx).

Recommended Accessories for P5150

See P5100A/TPP0850 Recommended Accessories.

P6015A
1000X, 3-meter High-voltage Probe.
Includes: Hook probe tip (206-0463-xx); banana plug tip (134-0016-xx); crocodile clip – plugs onto ground lead (344-0461-xx); ground lead (196-3363-xx); carrying case (016-1147-xx); instruction manual (070-8223-xx).

Options (P6015A only)

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<td>Opt. 1R</td>
<td>3-meter length with readout</td>
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Service (P6015A only)

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<td>Opt. C3</td>
<td>Calibration Service 3 Years</td>
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<td>Opt. C5</td>
<td>Calibration Service 5 Years</td>
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<tr>
<td>Opt. D1</td>
<td>Calibration Data Report</td>
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<td>Opt. D3</td>
<td>Calibration Data Report 3 Years (with Opt. C3)</td>
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<td>Opt. D5</td>
<td>Calibration Data Report 5 Years (with Opt. C5)</td>
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<td>Opt. R3</td>
<td>Repair Service 3 Years</td>
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<tr>
<td>Opt. R5</td>
<td>Repair Service 5 Years</td>
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