Passive High-voltage Probes

P5100A • TPP0850 • P5122 • P5150 • P6015A Data Sheet

P5100A

Features & Benefits

P5100A

- DC to 500 MHz
- 2500 V_{Peak}, 1000 V_{RMS} 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_{Peak}, 1000 V_{RMS} 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_{RMS} CAT II when DC-coupled*[1]
- Floatable up to 600 V_{RMS} CAT II
- 100X
- IEC61010-031

P5150

- For TPS2000 and THS3000 Series Oscilloscopes
- DC to 500 MHz
- 2500 V_{Peak}, 1000 V_{RMS} CAT II
- Floatable up to 600 V_{RMS} CAT II or 300 V_{RMS} 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

Tektronix®

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.

TPP0850

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.

Characteristics

P5100A/TPP0850/P5122/P5150/P6015A

Probe	Nominal Length	Attenuation	Bandwidth	Rise Time (Typical)	Loading	Max. Input V DC or RMS	Max. Float V	Comp. Range in pF	Readout
P5100A	2 m	100X	500 MHz	<700 ps	40 MΩ / 2.5 pF	2.5 kV_{Peak} 1000 V_{RMS} CAT II	N/A	7 to 30	Yes
TPP0850	1.3 m	50X	800 MHz	<525 ps	40 MΩ / 1.8 pF	2.5 kV_{Peak} 1000 V_{RMS} CAT II	N/A	N/A	Yes
P5122	1.2 m	100X	200 MHz	2.2 ns	100 MΩ / 4.0 pF	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	2.5 kV_{Peak} 1000 V_{RMS} CAT II	600 V_{RMS} CAT II, 300 V_{RMS} CAT III	10 to 25	No
P6015A	3 m	1000X	75 MHz	4.0 ns	100 MΩ / 3 pF	20 kV	N/A	7 to 49	No
P6015A Opt. 1R	3 m	1000X	75 MHz	4.0 ns	100 MΩ / 3 pF	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

Accessory	Description
013-0291-xx	Probe Tip to BNC Adapter
206-0060-xx	0.080 in. diameter Spring Tip

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.

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)

Option	Description
Opt. 1R	3-meter length with readout

Service (P6015A only)

Option	Description
Opt. C3	Calibration Service 3 Years
Opt. C5	Calibration Service 5 Years
Opt. D1	Calibration Data Report
Opt. D3	Calibration Data Report 3 Years (with Opt. C3)
Opt. D5	Calibration Data Report 5 Years (with Opt. C5)
Opt. R3	Repair Service 3 Years
Opt. R5	Repair Service 5 Years

Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

CE

Contact Tektronix:

ASEAN / Australasia (65) 6356 3900

Austria 00800 2255 4835*

Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777

Belgium 00800 2255 4835*

Brazil +55 (11) 3759 7627

Canada 1 800 833 9200

Central East Europe and the Baltics +41 52 675 3777

Central Europe & Greece +41 52 675 3777

Denmark +45 80 88 1401

Finland +41 52 675 3777

France 00800 2255 4835*

Germany 00800 2255 4835*

Hong Kong 400 820 5835

India 000 800 650 1835

Italy 00800 2255 4835*

Japan 81 (3) 6714 3010

Luxembourg +41 52 675 3777

Mexico, Central/South America & Caribbean 52 (55) 56 04 50 90

Middle East, Asia, and North Africa +41 52 675 3777

The Netherlands 00800 2255 4835*

Norway 800 16098

People's Republic of China 400 820 5835

Poland +41 52 675 3777

Portugal 80 08 12370

Republic of Korea 001 800 8255 2835

Russia & CIS +7 (495) 7484900

South Africa +41 52 675 3777

Spain 00800 2255 4835*

Sweden 00800 2255 4835*

Switzerland 00800 2255 4835*

Taiwan 886 (2) 2722 9622

United Kingdom & Ireland 00800 2255 4835*

USA 1 800 833 9200

* European toll-free number. If not accessible, call: +41 52 675 3777

Updated 10 February 2011

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.tektronix.com**

17 Jan 2012 56W-10262-9