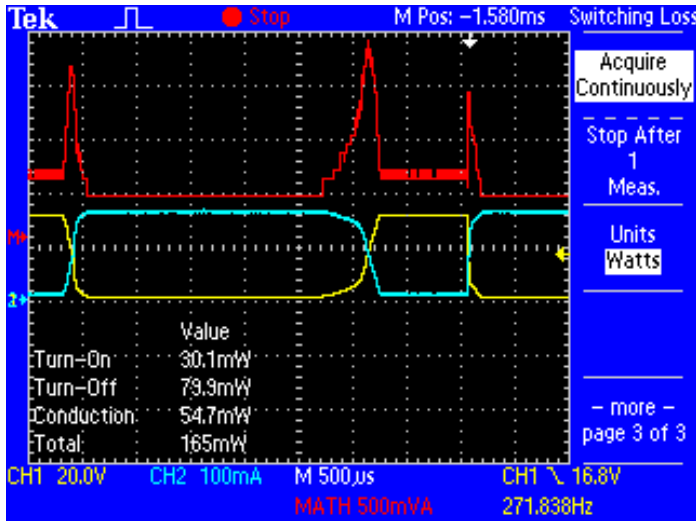


Power Measurement and Analysis Software

TPS2PWR1 Data Sheet



Power Measurement and Analysis Software

As an industrial power designer or technician, you must perform a range of power-specific measurements to develop, test, and race products to market. The TPS2000 Series oscilloscopes, when equipped with TPS2PWR1 power measurement and analysis software, allows you to optimize your productivity by reducing your development and test time with a broad range of power-specific measurements, such as switching loss (including turn-on, turn-off, and conduction losses), harmonic distortion measurements to the 50th harmonic, and dv/dt and di/dt cursor measurements. Use a single instrument to make an array of measurements – from measuring high voltages*¹ and high currents to debugging control circuits.

To improve the efficiency of industrial power designs, you must analyze power dissipation and characterize transitions at higher switching frequencies. Using TPS2PWR1's unique switching-loss feature, you can measure switching-device power dissipation with the touch of a button. Coupled with the TPS2000 Series oscilloscopes' unique Digital Real-Time (DRT) sampling technology, the TPS2PWR1 software package enables you to efficiently and accurately characterize industrial power systems by measuring power loss at the switching device.

Reduce your development and testing time by using TPS2PWR1's harmonic testing capability to the 50th harmonic to test power supply designs to these standards from your bench, the power lab, or on-site.

In addition, TPS2PWR1 software enables you to set units and scale factor for Tektronix current and voltage probes to read the result in the right unit.

*¹ To make floating measurements greater than 30 V_{RMS}, use optional P5120 or P5122 passive, high-voltage probes, similarly rated passive, high-voltage probes, or appropriately rated high-voltage, differential probes.

Features & Benefits

- Improve Efficiency of Power Designs with Switching-loss Measurements including Turn-on, Turn-off, and Conduction Losses
- Reduce Test Time with Harmonic Measurements to the 50th Harmonic
- Eliminate Manual Calculations with Automated Power Analysis, Waveform Analysis, and Phase Analysis with True Power, Reactive Power, Power Factor, Crest Factor, Phase Relationships
- Reduce Measurement Time with dv/dt and di/dt Cursors

Applications

- Motor Drive Design and Test
- UPS Design and Test
- Power Semiconductor Characterization
- Power Quality Equipment Design and Test
- Power Monitoring and Performance Verification

Characteristics

Power Measurements – True real power in watts, reactive power in VAR, power factor, crest factor, RMS measurements, frequency measurements.

Cursors – dv/dt and di/dt.

Phase Angles – CH1 and CH2, CH2 and CH3 (four-channel scopes only), CH1 and CH3 (four-channel scopes only).

Harmonics Measurements – Up to the 50th harmonic, THD, individual harmonic levels display, individual harmonic phase to fundamental, RMS values.

Switching-loss Measurements – Turn-on loss, turn-off loss, conduction loss, total switch loss.

Tektronix Oscilloscopes and Probes Supported

TPS2000 Series Oscilloscopes – TPS2012, TPS2014, TPS2024.

Current Probes

A621, A622, TCP202 with 1103 power supply, TCPA300 with TCP312, TCP305, TCP303, TCPA400 with TCP404XL, P6021, P6022, CT2, CT4 with TCP202 and 1103 power supply.

Passive Voltage Probes

P2220 – 200 MHz, 1X/10X switchable passive probe.

P5120 – 200 MHz passive 20X high-voltage probe.

P5122*2 – 200 MHz passive 100X high-voltage probe.

*2 The P5122 probe should not be used for AC-coupled measurements on signals with greater than 300 V DC offset. The P5120 is the recommended probe for measuring ripple on high-voltage DC supplies.

Differential Probes

P5210 – High-voltage active differential probe (5600 V_{p-p}, 50 MHz) (1103 power supply required).

Ordering Information

TPS2PWR1

Power Measurement and Analysis Software.

TPS2PBND

Power bundle for TPS2000 Series oscilloscopes. Includes (4) P5120 probes and TPS2PWR1 power measurement and analysis software.

TPS2PBND2

Power bundle for TPS2000 Series oscilloscopes. Includes (4) P5122 probes and TPS2PWR1 power measurement and analysis software.

International User Manual

Opt. L0 – English (071-1452-xx).

Opt. L1 – French (071-1453-xx).

Opt. L2 – Italian (071-1454-xx).

Opt. L3 – German (071-1455-xx).

Opt. L4 – Spanish (071-1456-xx).

Opt. L5 – Japanese (071-1457-xx).

Opt. L6 – Portuguese (071-1458-xx).

Opt. L7 – Simplified Chinese (071-1459-xx).

Opt. L8 – Traditional Chinese (071-1460-xx).

Opt. L9 – Korean (071-1461-xx).

Opt. L10 – Russian (071-1462-xx).



Product(s) are manufactured in ISO registered facilities.

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 7600
Canada 1 800 833 9200
Central East Europe, Ukraine, 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) 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 25 May 2010

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



Copyright © Tektronix, Inc. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks, or registered trademarks of their respective companies.

24 Jun 2010

61W-17751-3

