

18 GHz 100 Ω Differential Impedance TDR Hand Probes

► P80318 • P80318X



P80318

The P80318 is an 18 GHz 100 Ω input impedance differential TDR hand probe. This probe enables high fidelity impedance measurements of differential transmission lines. The adjustable probe pitch enables a wide variety of differential line spacing and impedances. The P80318 probe also includes two precision SMA cables with parallel control lines that provide the 80A02 the control for EOS/ESD protection.

P80318X

The P80318X is designed for high volume PCB impedance test applications. These applications require maximum manufacturing up-time. The P80318X includes everything in a P80318 plus a second probe body for use if the first probe body needs to be serviced due to normal wear. The P80318 probe can be used as a stand alone high resolution probe, but it is specially designed to be used with two 80A02 EOS/ESD Protection Modules. To maximize testing up-time and minimize repair costs, protecting the sampling module from static damage is a requirement. Damage to the sampling module is typically due to electro-overstress (EOS) and electrostatic discharge (ESD) from large static charges stored in the DUT. Use of two 80A02 modules ensures proper probe grounding prior to switching signal to the sampling module.

► Features & Benefits

- 18 GHz Bandwidth
- Direct In Circuit TDR Testing
- Reliable and Repeatable Resolution of Impedance Variations to 0.12"
- Adjustable Probe Pitch from 0.5 mm to 4.2 mm
- Probing of Fully Balanced Differential Signals Without Ground Contact
- Double Cushioning Design Enables Probe Tips to Maintain Proper DUT Contact
- Protects Sampling Module from Static Damage when Used with Two 80A02 Modules

► Applications

- Circuit Board Controlled Impedance Testing (TDR)
- Loss Tangent Measurements for Differential Transmission Lines
- Failure Analysis of PCB with or without Components Mounted
- Package Impedance Testing (TDR)

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► Characteristics

Nominal Length with Cable – 1 meter.

Attenuation – 1X.

Probe Only Bandwidth – >20 GHz.

Probe Pitch –

0.5 to 4.2 mm (signal tip to signal tip).

Connector Type – SMA.

Measured Reflected TDR Fall Time – <39 ps.

Impedance – 50 Ω odd mode, 100 Ω differential.

Max V_{in} – 5.0 V.

Probe Only Propagation Delay – 1.0 ns typical.

TDR Control Activation Force –

150 to 200 grams each probe half.

(Note: numeric values shown are typical).

► Ordering Information

P80318

18 GHz 100 Ω Differential TDR Hand Probe.

Includes: 18 GHz bandwidth 50 Ω odd mode input impedance (100 Ω differential impedance), differential passive handheld probe with one set of two precision SMA cables, soft storage case, user manual and three replaceable ground shorting straps.

P80318X

18 GHz 100 Ω Differential TDR Hand Probe for Manufacturing.

Includes: Two 18 GHz bandwidth 50 Ω odd mode input impedance (100 Ω differential impedance), differential passive handheld probes with one set of two precision SMA cables, soft storage case, user manual and three replaceable ground shorting straps. Second probe body is provided as a back-up to the first to maximize manufacturing up-time if the first probe body needs to be serviced due to wear.

Recommended Accessories

P8018 – 18 GHz Single-Ended 50 Ω TDR Probe. To compliment TDR probing for single ended applications.

80A02 – ESD/EOS TDR protection module.

External Probe Power Cable – To reduce module acquisition slot consumption, the 80A02 modules can run off this probe power cable (p/n 174-3896-00).

Ground Spring Kit – Set of two ground springs with a spare set screw for P80318 probe (p/n 020-2670-00).

Contact Tektronix:

ASEAN / Australasia / Pakistan (65) 6356 3900

Austria +41 52 675 3777

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

Belgium 07 81 60166

Brazil & South America 55 (11) 3741-8360

Canada 1 (800) 661-5625

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 & North Africa +33 (0) 1 69 86 81 81

Germany +49 (221) 94 77 400

Hong Kong (852) 2585-6688

India (91) 80-22275577

Italy +39 (02) 25086 1

Japan 81 (3) 6714-3010

Luxembourg +44 (0) 1344 392400

Mexico, Central America & Caribbean 52 (55) 56666-333

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

The Netherlands 090 02 021797

Norway 800 16098

People's Republic of China 86 (10) 6235 1230

Poland +41 52 675 3777

Portugal 80 08 12370

Republic of Korea 82 (2) 528-5299

Russia & CIS 7 095 775 1064

South Africa +27 11 254 8360

Spain (+34) 901 988 054

Sweden 020 08 80371

Switzerland +41 52 675 3777

Taiwan 886 (2) 2722-9622

United Kingdom & Eire +44 (0) 1344 392400

USA 1 (800) 426-2200

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

Updated 15 June 2005

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