Tektronix®

Passive Voltage Probes

TPP1000 · TPP0500B · TPP0502 · TPP0250 Datasheet



The TPP1000, TPP0500B, TPP0502 and TPP0250 models are high-bandwidth, general-purpose probes from Tektronix that offer breakthrough specifications previously unrealized in this product class. Designed for use with Tektronix MDO3000, MDO4000, MSO/DPO5000, and 5 Series MSO Series oscilloscopes, these probes provide up to 1 GHz of analog bandwidth with less than 3.9 pF of capacitive loading.

Key performance specs

- 1 GHz, 500 MHz and 250 MHz probe bandwidth models
- <4 pF input capacitance
- 10X and 2X attenuation factor
- 300 V CAT II input voltage
- Designed for use with the MDO3000, MDO4000, MSO/DPO5000, and 5 Series MSO Series oscilloscopes

Key features

- Compact probe head for probing small-geometry circuit elements
- Small probe body for enhanced visibility to the device-under-test
- Rigid tip for secure device-under-test connectivity
- Small MMCX replaceable Tip Cartridge for secure hands-free connectivity (TPP1000 only)
- 0.1" (2.54 mm) and 0.062" (1.57 mm) Square Pin Adapters attach to MMCX tip cartridge for easy hands-free connection to square pin headers and across 0402 components (TPP1000 only)
- Replaceable probe tip cartridges
- Large accessory set for versatile connectivity

Connectivity

- Integrated oscilloscope and probe measurement system provides intelligent communication that automatically scales and adjusts units on the oscilloscope display to match the probe attenuation
- Built-in AC compensation optimizes signal path across the entire frequency range

Applications

- Low-power devices
- Service
- Manufacturing engineering test
- Research and development

Accurate high-speed passive probing

The extremely low capacitive loading limits adverse effects on your circuits and is more forgiving of longer ground leads. And with the probe's wide bandwidth, you can see the high-frequency components in your signal which is critical for high-speed applications. The TPP1000, TPP0500B and TPP0250 passive voltage probes offer all the benefits of general-purpose probes like high dynamic range, flexible connection options, and robust mechanical design, while providing the performance of active probes.

Accurate low voltage

The TPP0502 offers the industry's highest bandwidth (500 MHz) and lowest attenuation factor (2X) for making low-voltage measurements such as ripple, a common measurement on the output of power supplies. The low capacitive loading of the TPP0502 means long ground leads can also be used on this probe with minimal impact on measurement quality, providing today's engineer with the flexibility to move around their design without worrying about ground lead length.

Specifications

All specifications apply to all models unless noted otherwise.

Model overview

	TPP1000	TPP0500B	TPP0502	TPP0250
Attenuation	10X	10X	2X	10X
Dynamic range	300 V Cat II	300 V Cat II	300 V Cat II	300 V Cat II
Bandwidth	1 GHz	500 MHz	500 MHz	250 MHz
Input impedance at the probe tip	10 MΩ, <4 pF	10 MΩ, <4 pF	2 MΩ, 12.7 pF	10 MΩ, <4 pF
Cable length	1.3 m	1.3 m	1.3 m	1.3 m

Ordering information

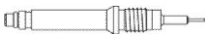
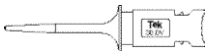
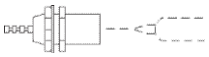
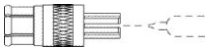
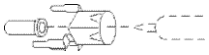
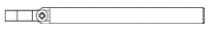
Models

TPP1000	1 GHz, 10X attenuation passive probe with TekVPI® interface.
TPP0500B	500 MHz, 10X attenuation passive probe with TekVPI® interface.
TPP0502	500 MHz, 2X attenuation passive probe with TekVPI® interface.
TPP0250	250 MHz, 10X attenuation passive probe with TekVPI® interface.

Standard accessories

Description	Quantity included	Reorder part number
TPP1000 Rigid Tip	1	206-0610-xx
TPP1000 Pogo Tip (pre-installed on probe)	1	206-0611-xx
TPP0500B Rigid Tip	1	206-0649-xx
TPP0500B Pogo Tip (pre-installed on probe)	1	206-0650-xx
TPP0502 Rigid Tip (pre-installed on probe)	1	206-0641-xx
TPP0502 Pogo Tip	1	206-0642-xx
TPP0250 Rigid Tip (pre-installed on probe)	1	206-0649-xx
Short ground spring	2	016-2034-xx
Long ground spring	2	016-2028-xx
Alligator ground (6 in.)	1	196-3521-xx
Hook tip (regular)	1	013-0362-xx
Hook tip (micro)	1	013-0363-xx
IC cap (universal) 3.8 mm	1	013-0366-xx
Insulator sleeve (TPP1000, TPP0502)	1	342-1194-xx
Insulator sleeve (TPP0500B, TPP0250)	1	204-1226-xx
Color bands for probe identification	5 pair	016-0633-xx

Recommended accessories

Description	Quantity included	Image	Reorder part number
MMCX probe tip, gold (TPP1000 only) [1]	1		206-0663-xx
MMCX to 0.1 in. (2.54 mm) sq. pin adapter, blue, 0.025 in. (0.635 mm) sq. pins (TPP1000 only)	1		131-9717-xx
MMCX to 0.062 in. (1.57 mm) sq. pin adapter (white), 0.016 - 0.018 in. (0.4 - 0.46 mm) sq. pins (TPP1000 only)	1		131-9677-xx
Electrical Y-Lead (TPP1000 only)	1		196-3434-xx
Alligator ground (12 in.)	1		196-3512-xx
6 in. clip-on ground lead (with 0.025 in. pin receptacle)	1		196-3198-xx
Microcircuit test tip	1		206-0569-xx
Compact probe tip chassis mount test jack (TPP0502 and TPP1000 only)	1		131-4210-xx
BNC to probe tip adapter	1		013-0367-xx
PCB to probe tip adapter, pack of 10	1		016-2016-xx
Compact probe tip chassis mount test jack (TPP0250 and TPP0500B only)	1		131-8831-xx
Color bands (set of 4 color-coded bands)	1		016-0633-xx
Tweaker tool	1		003-1433-xx
DUT Interface pin kit with (qty. 20) 0.018 in. (0.46 mm) round solder-in pins (TPP1000 only)	1		020-3169-xx
Solder aid for 0.062 in. (1.57 mm) pitch sq. pins, 0.016 - 0.018 in. (0.4 - 0.46 mm) sq. pins (TPP1000 only)	1		003-1946-xx
Probe tip tripod support with living hinge [2]	2		352-1170-xx

1 Voltage rating: 30 Vrms, 42 Vpk, 60 VDC, and OVT <500 Vpk

2 The tripod probe tip support is pictured with the probe tip and adapter attached.

Options

Service options

Opt. SILV100	Standard warranty extended to 5 years
Opt. SILV200	Standard warranty extended to 5 years

Probes and accessories are not covered by the oscilloscope warranty and Service Offerings. Refer to the datasheet of each probe and accessory model for its unique warranty and calibration terms.

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

Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

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