

# Active Probes

## TAP2500 - TAP3500 Datasheet



The TAP2500 and TAP3500 Single-ended Active FET probes provide excellent high-speed electrical and mechanical performance required for today's digital system designs.

### Key features

- Outstanding electrical performance
    - High probe bandwidth
    - Fast probe rise time
    - Excellent signal fidelity
    - $\leq 0.8$  pF input capacitance
    - 40 k $\Omega$  input resistance
    - -4 V to +4 V input dynamic range
    - -10 V to +10 V<sub>DC</sub> input offset range
    - $\pm 30$  V (DC + peak AC) Maximum input voltage (nondestructive)
  - Versatile mechanical performance
    - Small compact probe head for probing small geometry circuit elements
    - DUT attachment accessories enable connection to SMDs as small as 0.5 mm pitch
    - Robust design for reliability
- Easy to use
    - Connects directly to oscilloscopes with the TekVPI™ probe interface
    - Provides automatic units scaling and readout on the oscilloscope display
    - Easy access to oscilloscope probe menu display for probe status/diagnostic information and to control probe DC offset
    - Remote GPIB/USB probe control through the oscilloscope
  - Applications
    - Verification, debug, and characterization of high-speed designs
    - Signal integrity, jitter, and timing analysis
    - Manufacturing engineering and test
    - Signals with voltage swings up to 8 V<sub>p-p</sub>

### TAP2500 and TAP3500 active probes for TekVPI™ probe interface

Selecting the right probe for your application is key to attaining the best signal fidelity in your measurements. Active probes provide truer signal reproduction and fidelity for high-frequency measurements. With our ultra-low input capacitance and unique interface, the TAP2500 and TAP3500 Single-ended Active FET probes provide excellent high-speed electrical and mechanical performance required for today's digital system designs.

Specifically designed for use and direct connection to oscilloscopes with the TekVPI™ probe interface, the TAP2500 and TAP3500 Active FET probes achieve high-speed signal acquisition and measurement fidelity by solving three traditional problems:

- Lower DUT loading effects with  $\leq 0.8$  pF input capacitance and 40 k $\Omega$  input resistance
- Versatile DUT connectivity for attaching to small SMDs
- Preserves instrument bandwidth at the probe tip for up to 3.5 GHz oscilloscopes

# Specifications

All specifications apply to all models unless noted otherwise.

## Warranted electrical characteristics

Attenuation (probe only)	10X
Rise time (probe only)	<140 ps (TAP2500) <130 ps (TAP3500)

## Typical characteristics

Bandwidth (probe only)	≥2.5 GHz (TAP2500) ≥3.5 GHz TAP3500)
Input capacitance	≤0.8 pF
Input resistance	40 kΩ
Input dynamic range	±4.0 V
Input offset range	±10 V
Maximum non-destructive input voltage	±30 V (DC + peak AC)
Propagation delay	5.3 ns

## Physical characteristics

<b>Probe head size</b>	
Height	7.6 mm (0.30 in)
Width	7.6 mm (0.30 in)
Length	57.2 mm (2.25 in)
<b>Other dimensions</b>	
Cable length	1300 mm (51 in)
<b>Weight</b>	
Unit	1.55 kg (3.44 lbs) (probes, accessories, and packaging)
Net	0.091 kg (0.2 lbs) (probe only, using ME lab scale)

## Power requirements

The probe is powered directly by oscilloscopes with the TekVPI probe interface.

**EMC, environment, and safety****Temperature**

<b>Operating</b>	0 °C to +50 ° (+32 °F to 122 °F)
<b>Nonoperating</b>	-40 °C to +71 °C (-40 °F to 160 °F)

**Humidity**

<b>Operating</b>	5% to 95% Relative Humidity up to +30 °C (+86 °F) 5% to 85% Relative Humidity at 30 °C to +50 °C (+86 °F to +122 °F) noncondensing
<b>Nonoperating</b>	5% to 95% Relative Humidity up to +30 °C (+86 °F) 5% to 85% Relative Humidity at 30 °C to +75 °C (+86 °F to +167 °F) noncondensing

**Altitude**

<b>Operating</b>	Up to 4,400 m (14,436 ft)
<b>Nonoperating</b>	Up to 12,192 m (40,000 ft)

**Emissions compliance**

EN 55011, Class A

**Regulatory**

<b>Compliance labeling</b>	C-Tick (Australia/New Zealand)
	CE (European Union)
	WEEE (European Union)

**Ordering information****Models**

TAP2500	2.5 GHz Active Probe
TAP3500	3.5 GHz Active Probe

**Standard accessories****Standard accessories**

Description	Quantity with TAP2500 or TAP3500	Reorder part number	Reorder quantity
Y-lead adapter (2 each) and 3 in. ground lead (3 each)	1 set	196-3456-xx	1 set
Micro CKT test tip	2 each	206-0569-xx	1 each
Customizable ground lead (set of 5)	1 set	196-3482-xx	1 set
Color band kit (5 colored pairs)	1 set	016-1315-xx	1 set
Pogo pin ground (set of 10)	1 set	016-1772-10	1 set
Square pin socket (set of 10)	1 set	016-1773-10	1 set
Push-in probe tip (set of 10)	1 set	131-5638-11	1 set
Right-angle adapter (set of 10)	1 set	016-1774-xx	1 set
SureToe™ Adapter (set of 4)	1 set	131-6254-xx	1 set
Antistatic wrist strap	1 each	006-3415-xx	1 each
Nylon carrying case	1 each	016-1952-xx	1 each
Plastic accessory case	1 each	006-7164-xx	1 each
Instruction manual	1 each	071-1836-xx	1 each

## Datasheet

### Recommended oscilloscopes

Oscilloscopes with the TekVPI™ probe interface.

### Warranty

One-year warranty covering all parts and labor.

## Options

### Manual options

Opt. L5	Japanese manual
Opt. L7	Simplified Chinese manual

### Service options

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 (including warranty)
Opt. R5	Repair Service 5 Years (including warranty)
Opt. SILV600	Standard warranty extended to 5 years

## Recommended accessories

013-0309-xx	IC Micro Grabber, Qty 2
015-0678-xx	SMA-to-Probe tip adapter
067-1701-xx	TekVPI calibration fixture (for PV)

CE Marking Not Applicable.



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



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**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](http://www.tektronix.com).

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