

# Active Probes

## TAP2500 • TAP3500 Data Sheet



### Features & Benefits

- 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 VDC Input Offset Range
  - $\pm 30$  V (DC + peak AC) Max Input Voltage (Nondestruct)
- 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 DPO7000 and DPO4000 Series Oscilloscopes Using the New 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

### 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>pk-pk</sub>

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 the TekVPI™ probe interface used on the DPO7000 and DPO4000 Series oscilloscopes, 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 oscilloscope bandwidth at the probe tip for DPO7000 and DPO4000 Series Oscilloscope models up to 3.5 GHz

## Characteristics

**Bandwidth (Probe only) –**

≥2.5 GHz (TAP2500).  
 ≥3.5 GHz (TAP3500).

**Attenuation (Probe only) –** 10:1.

**Rise Time (Probe only) –**

<140 ps (TAP2500).  
 <130 ps (TAP3500).

**Input Capacitance –** ≤0.8 pF.

**Input Resistance –** 40 kΩ.

**Input Dynamic Range –** –4 V to +4 V.

**Input Offset Range –** –10 V to +10 V.

**Max Input Voltage (Nondestruct) –** ±30 V (DC + peak AC).

**Propagation Delay –** 5.3 ns.

## Physical Characteristics

Dimensions	mm	in.
Width	7.6	0.30
Height	7.6	0.30
Depth	57.2	2.25
Cable Length	1300	51
Weight	kg	lb.
Net	0.091	0.2 (probe only, using ME lab scale)

## Power Requirements

TAP2500 and TAP3500 are powered directly by the DPO7000 and DPO4000 Series Oscilloscopes using TekVPI™ probe interface.

## Recommended Oscilloscopes

DPO7000 and DPO4000 Series Oscilloscopes with TekVPI™ probe interface.

## Environmental

**Temperature –**

Operating: 0 °C to +50 °C.  
 Nonoperating: –40 °C to +71 °C.

**Humidity –**

Operating: 5% to 95% Relative Humidity (RH) at up to +20 °C; 5% to 85% RH above +30 °C up to +50 °C; noncondensing.  
 Nonoperating: 5% to 95% Relative Humidity (RH) at up to +30 °C; 5% to 85% RH above +30 °C up to +75 °C; noncondensing.

**Altitude –**

Operating: Up to 4,400 m (14,450 ft.).  
 Nonoperating: Up to 12,192 m (40,000 ft.).

## Regulatory

**Emissions Compliance –** EN 55011, Class A.

**Compliance Labeling –**

C-Tick (Australia / New Zealand)  
 CE (European Union)  
 WEEE (European Union)

## Ordering Information

### TAP2500

2.5 GHz Active Probe.

### TAP3500

3.5 GHz Active Probe.

Description	Qty with TAP2500 and TAP3500	Reorder Part Number (Qty)
Y-lead Adapter (2 each) and 3 in. ground lead (3 each)	1 set	196-3456-xx (1 set)
SMT KlipChip™ Adapter	2 each	206-0364-xx (1 ea)
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 ea)
Nylon Carrying Case	1 each	016-1952-xx (1 ea)
Plastic Accessory Case	1 each	006-7164-xx (1 ea)
Instruction Manual	1 each	071-xxxx-xx (1 ea)

## Optional Accessories

Description	Package Quantity	Ordering Part Number
50 mil pitch (.050 inch) IC Adapter	12	SF501
25 mil pitch (.025 inch) IC Adapter	12	SF502
0.5 mm IC Adapter	12	SF503
IC Micro Grabber	2	013-0309-xx
SMA-to-Probe Tip Adapter	1	015-0678-xx
TekVPI Calibration Fixture (for PV)	1	067-1701-xx

## Manual Language Options

Opt. L5 – Japanese instruction manual.

Opt. L7 – Simplified Chinese instruction 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.

Opt. R5 – Repair Service 5 Years.

Opt. C, D, R – Single calibration event, or coverage for the designated calibration interval whichever comes first.



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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