

## 500 MHz Passive Probes P6139B and P5050B Datasheet



- Integrated oscilloscope and probe measurement systems feature intelligent communication that automatically scales and adjusts units on the oscilloscope display.

### Applications

- Low power devices
- Service
- Manufacturing engineering
- Test research and development

The P6139B and P5050B probes are high bandwidth, high impedance 10X passive voltage probes with 10 M $\Omega$  input resistance. These probes feature a small probe head and sharp tip that makes it easier to probe dense circuitry. The P6139B and P5050B share similar electrical specifications but support Tektronix oscilloscopes with different compensation ranges. Visit the *Oscilloscope Probe & Accessory Selector Tool* located at [www.tek.com/probes](http://www.tek.com/probes) to ensure the correct probe is selected for your oscilloscope.

### Key performance specifications

- 500 MHz probe bandwidth
- Large input impedance at the probe tip (10 M $\Omega$ , 8pF)
- 10X attenuation factor
- 300 v CAT II input voltage

### Ease-of-use features

- Compact probe head for probing small geometry circuit elements
- Small probe body for enhanced visibility to the Device-Under-Test
- Replaceable probe tip cartridges
- Large accessory set for versatile connectivity

### Connectivity

- P6139B and P5050B feature the TekProbe interface for direct BNC connection for oscilloscopes with 1 M $\Omega$  inputs.

## Specifications

All specifications are guaranteed unless noted otherwise. All specifications apply to all models unless noted otherwise.

### Model overview

Specification	P6139B	P5050B
Attenuation	10X	10X
Dynamic range	300 V CAT II	300 V CAT II
Bandwidth	500 MHz	500 MHz
Input impedance at the probe tip	10 M $\Omega$ , 8 pF	10 M $\Omega$ , 11 pF
Compensation range	8 pF to 18 pF	16 pF to 22 pF
Cable length	1.3 m	1.3 m

### Environmental specifications

Characteristic	Description
<b>Temperature</b>	
Operating	Comp box: -15 °C (+5 °F) to +50 °C (+122 °F)
	Probe body: -55 °C (-67 °F) to +65 °C (+149 °F)
Nonoperating	-62 °C to +85 °C (-80 °F to +185 °F)
<b>Humidity</b>	
Operating	Comp box: Up to 95% relative humidity (%RH) up to +30 °C, up to 75% RH and up to +50 °C. Noncondensing
	Probe body and cable: Up to 95% relative humidity (%RH) up to +30 °C, up to 85% RH and up to +65 °C. Noncondensing
Nonoperating	Up to 85% relative humidity and up to +85 °C. Noncondensing
<b>Altitude</b>	
Operating	3.0 km (10,000 ft) maximum
Nonoperating	15 km (50,000 ft) maximum

## Ordering information

### Models

<b>P6139B</b>	500 MHz general purpose passive probe with TekProbe I interface
<b>P5050B</b>	500 MHz general purpose passive probe with TekProbe I interface

### Standard accessories

Description	Quantity included	Reorder part number
Long ground spring	2	016-2028-xx
6" alligator ground lead	1	196-3521-xx
Standard hook tip	1	013-0362-xx
Universal IC cap, 3.8 mm	1	013-0366-xx
Table continued...		

Description	Quantity included	Reorder part number
Marker band set, 2 each of 5 colors	1	016-0633-xx
Adjustment tool	1	003-1433-xx
Manual (English only)	1	071-2710-xx

### Recommended accessories

Description	Quantity included	Reorder part number
Short ground spring	2	016-2034-xx
12" alligator ground lead	1	196-3512-xx
6" clip-on ground lead	1	196-3198-xx
Micro hook tip	1	013-0363-xx
MicroCKT test tip	1	206-0569-xx
BNC to probe tip adapter; unterminated	1	013-0367-xx
PCB to probe tip adapter	10	016-2016-xx
Compact probe tip chassis mount test jack	1	131-8831-xx
P6139B replacement tip	1	206-0635-xx
P5050B replacement tip	1	206-0636-xx



Tektronix is ISO 14001:2015 and ISO 9001:2015 certified by DEKRA.

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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.tek.com](http://www.tek.com).

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