

# Tektronix Logic Probes for MSO70000 Oscilloscopes

## P6780, P6750, P6717A Logic Probes Datasheet



No test and measurement solution is complete without probing, and the consideration of its impact on your system and your measurement time. With the industry's highest-bandwidth differential logic probes, the P6700 Series logic probes enhance the performance of the MSO70000 Series Mixed Signal Oscilloscopes by providing connectivity and signal integrity needed for broad system visibility. Equipped with 17 channels, these logic probes plug seamlessly into the MSO70000 Series with up to 2.5 GHz of signal bandwidth. Select from a variety of attachment mechanisms, including the high-density D-Max<sup>®</sup> Probing Technology that eliminates the need for onboard connectors.

### Features and benefits

- High-performance 17-channel logic probes for broad System Visibility (16 data, 1 clock/data)
- Bandwidths up to 2.5 GHz for connections to today's fast digital signals
- Variety of connectivity options for reliable probe attachment to devices under test

### Applications

- Hardware debug and verification
- Processor/Bus debug and verification
- High-performance embedded system, debug, and verification

### High-performance logic probing for broad system visibility

The P6717A and P6780 logic probes break out 16 data channels and 1 clock/data channel over 2 flying lead sets (Group 1 and Group 2). Each lead set includes eight leads that have a positive signal input on one side and a negative input on the opposite side for connecting to individual test points. Group 2 also includes a clock/qualifier input.

On the P6750 logic probe, the D-Max<sup>®</sup> contact on the probe eliminates the need for a built-in connector. Instead, the probe attaches directly to a mating PCB footprint and retention assembly designed into your Device Under Test (DUT). The P6750 probe is secured to the DUT with two thumbscrews. Each of the 16 data channels has a signal input on one side and a ground input on the opposite

## Characteristics

### Model overview

Characteristic	P6717A	P6750	P6780
Probe type	Single-ended Data Single-ended Clock (General Purpose)	Single-ended Data Single-ended Clock (D-Max Probing Technology)	Differential Data Differential Clock (Differential 17-channel)
Number of channels	17	17	17
Analog bandwidth with iCapture	1 GHz	1 GHz	2.5 GHz
Usage recommendation	Most general-purpose logic-probing applications	Applications where DUT has a built-in socket on the PC board	Applications requiring high-performance digital probing for built-in test points or solder-in connections
Attachment to Target System	Probe Tip IC Grabber (see P6717A user's manual for specifications)	D-Max probing technology using a compression cLGA footprint (see P6750 user's manual for specifications)	Standard Solder-in Adapter Wide-body Solder-in Adapter Flex Solder-tip Adapter Probe Grouper Hand Browser (see P6780 user's manual for specifications)
Bandwidth	1 GHz	1 GHz	2.5 GHz Standard Adapter 2.5 GHz with Wide-body Adapter 2 GHz with Flex Adapter
Probe loading AC/DC	3.0 pF/20 kΩ ±1.0%	3.0 pF/20 kΩ ±1.0%	0.5 pF/20 kΩ ±1.0%, probe only 1.5 pF/20 kΩ ±1.0%, Standard Adapter 1.5 pF/20 kΩ ±1.0%, Wide-body Adapter 2.0 pF/20 kΩ ±1.0%, Flex Adapter
Max voltage (nondestruct)	±15 V	±15 V	±15 V
Cable length	1.0 m (3.28 ft.)	1.0 m (3.28 ft.)	1.0 m (3.28 ft.)

### Environmental

#### Temperature

<b>Operating</b>	0 °C (+32 °F) to +50 °C (+122 °F)
<b>Nonoperating</b>	-55 °C to +75 °C (-67 °F to +167 °F)

#### Humidity

<b>Operating</b>	5% to 95% relative humidity at up to +30 °C (+86 °F)
	5% to 75% RH above +30 °C (+86 °F) up to +50 °C (+122 °F), noncondensing
<b>Nonoperating</b>	5% to 95% relative humidity at up to +30 °C (+86 °F)
	5% to 75% RH above +30 °C (+86 °F) up to +60 °C (+140 °F), noncondensing

#### Altitude

<b>Operating</b>	3,000 m (9,843 ft.) maximum
<b>Nonoperating</b>	4,600 m (15,092 ft.) maximum

## Ordering information

### Tektronix Logic Probes for MSO70000 Oscilloscopes

Models	Description
P6717A	17-channel General-purpose Logic Probe with 16 data channels and 1 data/clock channel <b>Includes:</b> Podlet Holders, IC Grabbers, Ground Leads, Ground Tips, Extension Ground Tips, Probe Labels, Probe Instruction Manual
P6750	17-channel, High-density Connectorless Probe with D-Max probing technology, single-ended data/clock, and accessories <b>Includes:</b> Probe Labels, Probe Instruction Manual
P6780	17-channel High-performance Differential Logic Probe with 16 data channels and 1 data/clock channel and accessories <b>Includes:</b> Standard Adapter, Wide-body Adapter, Flex Adapter, 22 degree/55 degree Holder, Leadset Ground, Hand Browser, Probe Grouper, Probe Instruction Manual

### Optional accessories

Accessory	Description
<b>P6717A/P6750/P6780</b>	
NEX-P6960PIN <sup>1</sup>	D-Max <sup>®</sup> to Square Pin Adapter
067-2298-xx	Digital Probe Deskew Fixture
<b>P6750 Only</b>	
020-2622-xx	Contact Assembly
Probe to Circuit Board Mount	
020-2908-xx	Package of 2
020-2910-xx	Package of 50

<sup>1</sup> Notice to EU customers: This product is not updated to comply with the RoHS 2 Directive 2011/65/EU and will not be shipped to the EU. Customers may be able to purchase products from inventory that were placed on the EU market prior to July 22, 2017 until supplies are depleted. Tektronix is committed to helping you with your solution needs. Please contact your local sales representative for further assistance or to determine if alternative product(s) are available. Tektronix will continue service to the end of worldwide support life.

## Service options

Customers who choose a Tektronix product receive a support partnership focused on making the deployment and operation of their products successful. Tektronix support teams are committed to providing rapid response. A broad range of flexible services is available at the time of product purchase to meet customer service needs.

Option	Description
P6717A C3 P6750 C3 P6780 C3	Calibration Service 3 Years
P6717A C5 P6750 C5 P6780 C5	Calibration Service 5 Years
P6717A R3 P6750 R3 P6780 R3	Repair Service 3 Years (including warranty)
P6717A R5 P6750 R5 P6780 R5	Repair Service 5 Years (including warranty)
P6717A-R1PW P6750-R1PW P6780-R1PW	Repair Service Coverage 1 Year Post Warranty
P6717A-R2PW P6750-R2PW P6780-R2PW	Repair Service Coverage 2 Years Post Warranty
P6717A-R3DW P6750-R3DW P6780-R3DW	Repair Service Coverage 3 Years (including product warranty period). 3-year period starts at time of instrument purchase
P6717A-R5DW P6750-R5DW P6780-R5DW	Repair Service Coverage 5 Years (including product warranty period). 5-year period starts at time of instrument purchase
P6717A G3 P6750 G3 P6780 G3	Complete Care 3 Years (includes loaner, scheduled calibration and more)
P6717A G5 P6750 G5 P6780 G5	Complete Care 5 Years (includes loaner, scheduled calibration and more)



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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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