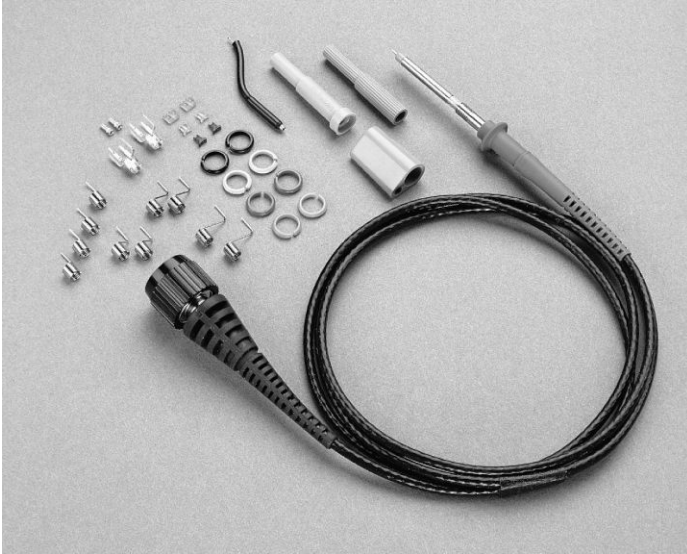


# 20X Low Capacitance Probe

## P6158 Datasheet



P6158

### 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.

### Features and benefits

- 3 GHz Bandwidth
- 1.5 pF Input Capacitance
- 1 k $\Omega$  Input Resistance
- 22 V<sub>RMS</sub> Max. Input Voltage
- Activates 20X Readout in TEKPROBE™ Interface Instruments
- Compact Probe Tip Compatible with a Wide Range of Tektronix Accessories and Adapters

### Applications

- High-speed device characterization
- Propagation delays for ECL, CMOS and other logic circuitry and devices

- Circuit board impedance testing (TDR)
- High-speed sampling systems

### P6158 DC to 3 GHz

The P6158 is a 3 GHz, 20X, low-capacitance probe. The P6158 is ideal for high-speed applications because of its ability to extend high-frequency response to 3 GHz. The BNC connector incorporates encoding to correct scale factors for 20X attenuation in oscilloscopes with TEKPROBE<sup>®</sup> power supply interface. To facilitate SMD probing, the P6158 comes standard with SureFoot<sup>®</sup> adapters. Additionally, the probe comes standard with an array of short ground leads that insert minimal inductance into the signal path of the measured waveform. The compact probe head/tip assembly is compatible with the full line of 3.5 mm probe accessories. Designed for the TDS500/600/700/5000/6000/7000 Series oscilloscopes, the P6158 probe may also be used with 50  $\Omega$  11000 Series plug-ins and the 11800 Series SD2X Sampling/TDR plug-ins with BNC to SMA Adapters.

## Recommended instruments

- TDS500/600/700/7000 Series
- 11000 Series
- 11800 SD2X Sampling/TDR plug-ins
- TDS820/TDS8000/CSA8000/11801C/CSA803C

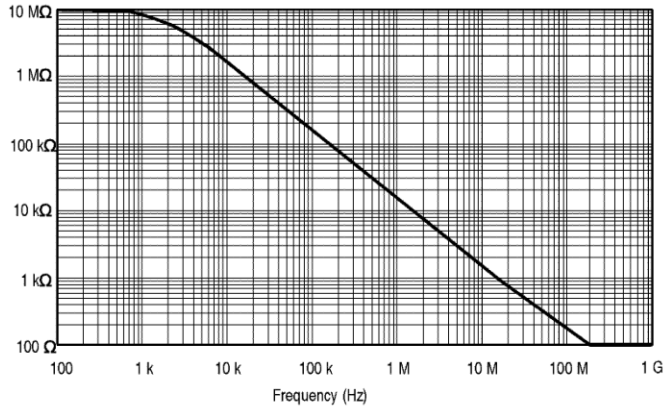


Figure 1. P6158 Attenuation vs. frequency.

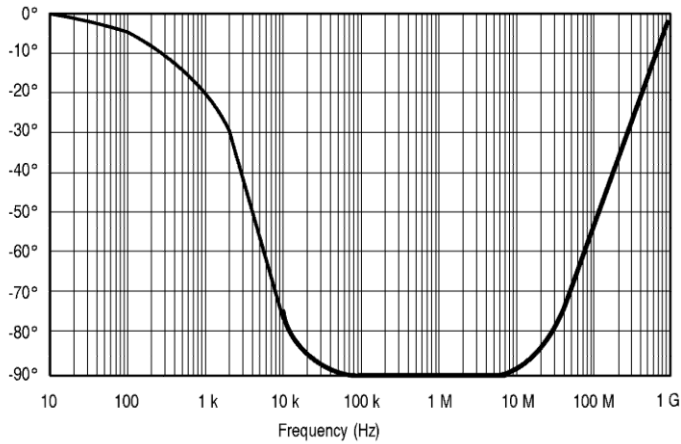


Figure 2. P6158 Input impedance and phase.

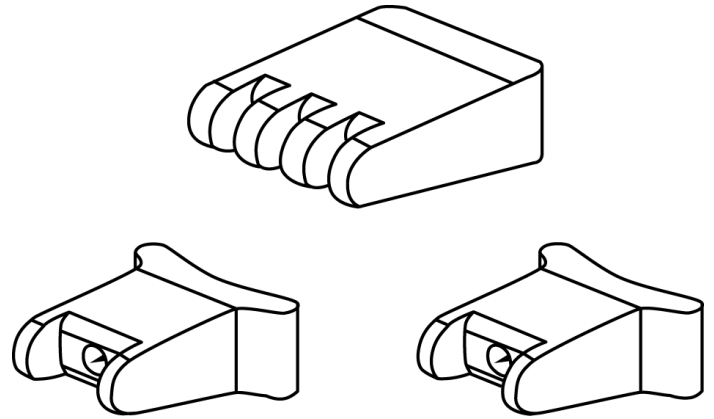


Figure 3. SF200A Series SureFoot® adapters.

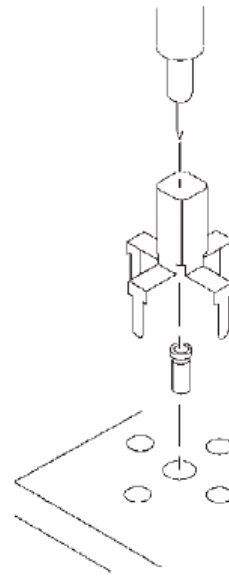


Figure 4. Compact probe tip circuit board test points.

## Specifications

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

### Electrical Characteristics

Bandwidth (Probe only)	DC to 3 GHz, -3 dB
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Rise time	>100 ps
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Attenuation	x20 (-26 dB)
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Attenuation accuracy	±3%
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Input capacitance	1.5 pF
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Input resistance	1 k $\Omega$
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Output termination	Terminate into 50 $\Omega$
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Signal delay	5 ns
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### Physical characteristics

Prob tip/head style	3.5 mm/Compact
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Output cable length	1.2 m.
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### Environmental characteristics

Operating temperature	-15 °C to +55 °C (+5 °F to +131 °F)
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High operating:	55 °C @ 95 to 97% RH
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Low operating:	30 °C @ 95 to 97% RH
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## Ordering Information

### Models

P6158 3 GHz Low Capacitance Probe

### Standard accessories

020-2232-00	P6158 probe tip accessory kit
204-1049-00	Attenuator tip cover; 2 ea. 50 mil, 25 mil (0.65 mm), and 0.5 mm SureFoot adapters
195-4240-00	2 in. ground lead
343-1003-01	ground collar
016-1077-00	2 ea. ground tip contact, 5 lengths w/cover shell
016-0633-00	2 ea. compact probe tip circuit board test points; 2 ea. marker set, various colors
071-0123-00	Instruction manual

### Recommended replacement accessories

SF201A	SureFoot Adapter, Orange, 50 mil (12 ea.)
SF202A	SureFoot Adapter, Blue, 0.65 mm/25 mil (12 ea.)
SF203	SureFoot Adapter, Red, 0.50 mm/20 mil (12 ea.)
131-5031-00	Compact Probe Tip Circuit Board Test Points (25 ea.)



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



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\* European toll-free number. If not accessible, call: +41 52 675 3777

**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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