

P6217
P6205
P6204

→ P6203 ←
→ P6231 ←

Active FET Probes

For TEKPROBE BNC Interfaces

With compliments

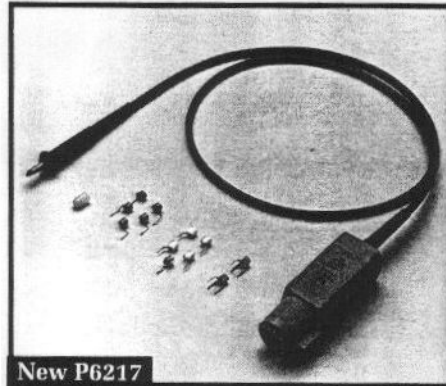
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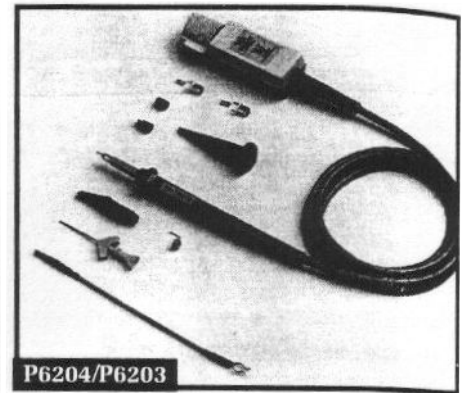
*Easy to Use,
Active
Performance,
Passive
Simplicity.*

P6217/P6205/P6204/ P6203/P6231

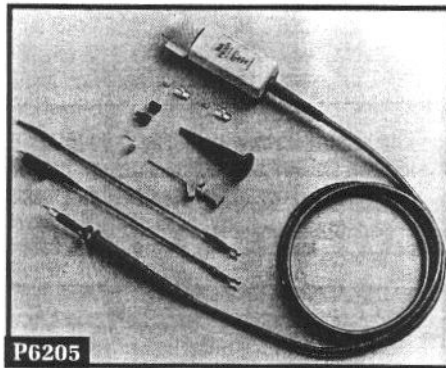
- Ultra Low Input Capacitance
- High Input Resistance
- True Signal Fidelity up to 4 GHz
- Variable DC Offset
- Integral Probe Power TEKPROBE BNC



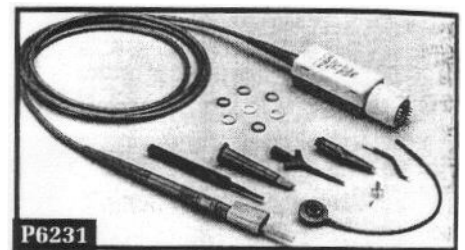
New P6217



P6204/P6203



P6205



P6231

P6217

- DC to 4 GHz
- ≤ 0.40 pF Input C
- 100 k Ω Input R
- DC Offset
- Small Size

P6205

- DC to 750 MHz
- 2 pF Input C
- 1 M Ω Input R
- Small Size

P6204

- DC to 1 GHz
- 1.9 pF Input C
- 10 M Ω Input R
- DC Offset
- Identify Button

P6203

- DC to 1 GHz
- 2 pF Input C
- 10 k Ω Input R
- DC Offset
- Identify Button

P6231

- DC to 1.5 GHz
- 1.6 pF Input C
- 450 Ω Input R
- Bias/Offset (Tip Nulling)
- Small Size

The P6203, P6204, P6205, New P6217 and P6231 Probes are Tektronix's line of Low Circuit Loading Signal Acquisition probes for CSA (Communications Signal Analyzers), DSA (Digitizing Signal Analyzers), 11000 Series and the TDS Family of Oscilloscopes.

The P6204, P6205 and P6217 are designed with FET devices for their inputs which allows very high input resistance values and low input capacitances.

The P6203 and P6231 are specialty active probes in that the P6203 uses Bipolar technology to achieve a low input capacitance while attaining a mid-level input resistance. The P6231 on the other hand provides a higher impedance level to DC through an Bias/Offset capability which provides an adjustable tip nulling voltage.

The P6217 provides the widest bandwidth and lowest input capacitance at 100 k Ω available for a hand-held active voltage probe.

The P6204 provides wide bandwidth, with low input capacitance and the highest input resistance available. At the same time the P6204 is the only active FET probe available which provides remote control capabilities.

The P6205 provides low input capacitance and high input resistance performance at a budget price.

All three Active FET probes provide a wide linear dynamic input range for accessing most digital device families using today's logic voltage levels.

Power for the P6203, P6204, P6205, P6217 and P6231's is supplied by the CSA, DSA, TDS and 11000 Series mainframes through the TEKPROBE™ BNC Interface, eliminating the need for extra cabling and/or external power supplies*1.

A variable DC Offset function which is controlled through the mainframe (CSA, DSA and 11000 series) to bring signals (those within the offset control range) into the dynamic range of the probe is available for the P6203, P6204 and P6217 probes.

The P6231 Bias/Offset probe acts as a standard 500 Ω passive divider voltage with the additional capability of having an adjustable tip nulling voltage. This feature reduces the DC-Loading effects of the probe when it is used to measure signals whose mid-voltage value is not at zero volts, or in circuits where the termination impedance is not returned to ground level. The Input Bias/Offset Voltage may be adjusted so that the voltage at the probe input resistor is equal to the test signal potential: thus no DC current flows through the probes input resistor.

Active FET Probes

For TEKPROBE BNC Interfaces

P6217
P6205
P6204

P6203
P6231

Probe information such as: type; serial number; attenuation factor; offset scale factor; input resistance; and termination resistance required, is communicated through the TEKPROBE™ Interface between the Active Probe and the CSA, DSA and 11000 Series mainframes. This information is used by these oscilloscope mainframes during the scope initialization sequence and measurement analysis.

Remote Control of several 11000 Series Programmable Functions/Actions is possible using the "Identify Button" on the P6203, P6204 and P6231 probe head.

These functions are selectable via the 11000 Series mainframe Utility Menus and include: Autoset; recall the next in a series of stored setups; invoke Automatic-Measurement; issue an SRQ (service action request); or activate the trace identification function.

Although designed for the CSA, DSA, TDS and 11000 Series Oscilloscopes, these Active Probes may also be used with 50 Ω or 1 MΩ oscilloscope systems, with conventional BNC interfaces, via the Tektronix 1103 TEKPROBE™ Power Supply. The 1103 can power up to two TEKPROBE™ probes*2.

BENEFIT HIGHLIGHTS

- **Low Input C, High Input R** – Minimizes circuit under test loading.
- **Probe Power Directly from CSA, DSA, TDS or 11000 Series TEKPROBE™ SMA Interfaces** – Means no additional cables or power supplies required¹.
- **Variable DC Offset (Except P6205/P6231)** – Allows correction for DC levels to bring the signal into the probe's dynamic measurement range.
- **Readout Coding for 10X Attenuation** – Reduces confusion and errors in measurement readings.
- **Gold Plated Replaceable Probe Tips (Except P6217)** – Improved electrical connections and lower maintenance costs.
- **Miniature Size Accessories (Except P6217/P6231)** – Provides wide range of circuit attachments.
- **U.L. Listed** – Third party certification for safe operation.

DESIGNED FOR:

- Digital Design and Debug of Logic Families such as:
 - ECL
 - GaAs
 - CMOS
 - TTL
- Component Characterization/ Measurement of High-Speed Analog Circuitry Relative to:
 - Amplitude Levels
 - Aberrations
 - Propagation Delay and Timing
 - Bandwidths and Rise Times

¹ To use these TEKPROBE BNC Interface Probes on the 11800 or CSA800 Series, requires a 1103 TEKPROBE™ Power Supply, an SMA Male to BNC Female adapter, and a 50 Ω BNC cable.

² For 50 Ω and 1 MΩ BNC inputs a 50 Ω BNC cable is required. 1 MΩ inputs also require a 50 Ω feed-through terminator.

CHARACTERISTICS

Probe Type	Nominal Cable Length in meters	Attenuation	Bandwidth at -3dB in MHz	Input C in pF	Input R in Ω	Linear Dynamic Range in Volts	DC Offset Range in Volts	Max. Voltage in Volts (DC + pk AC)	Interface/ Readout/ Identify ¹	Recommended Instrument
P6203	1.5	10X	1000	2	10 k	±10	±10	±40	TPB/Y/Y	11000 *2
P6204	1.5	10X	1000	1.9	10 M	±10	±15	±40	TPB/Y/Y	11000 *2
P6205	1.5	10X	750	2	1 M	±10	NA	±40	TPB/Y/N	TDS400/500/600
P6217	1.5	10X	4000	0.40 Typical	100 k	±4.0	±5.0	±40	TPB/Y/N	11000 *2 TDS500/600*3
P6231	1.5	10X	1500	1.6	450	±5.0	±5.0	±30	TPB/Y/Y	11000 *2

*1 Interface / Readout / Identify Code: TPB=TEKPROBE "BNC" / TPS=TEKPROBE "SMA" / BNC=CONVENTIONAL "BNC" / Y=Yes / N=No

*2 11000 SERIES = 11A32/11A34/11A52/11A71/11A72/11A81

*3 P6204 and P6217 DC Offset functions are not incorporated into the TDS400/500/600 Families

ORDERING INFORMATION

P6203

10X, 1 GHz Bipolar Probe.

Includes: Retractable Hook Tip (013-0107-07); 6 in Ground Lead w/Alligator (196-3120-00); 6 in Ground Lead w/Square Pin Receptacle (196-3198-00); Ground Contact, Spring (214-4125-00) SMT KlipChip™ (206-0364-00); Insulating Ground Cover (166-0404-01); IC Test Tip; 2 Probe Tip to Circuit Board Adapters; Carrying Case; Instruction Manual (070-6823-00).

P6204

10X, 1 GHz Active FET Probe.

Includes: Same as P6203 Except Instruction Manual (070-6949-00).

P6205

10X, 750 MHz Active FET Probe.

Includes: Same as P6203 Except Instruction Manual (070-8202-00).

P6217

4 GHz Active FET Probe.

Includes: 4-post ECB mount ground socket (151-5308-00); Edge Tab Ground Socket (131-5309-00); 2 Each of 5 Lengths Wire-Form Ground (131-5482-00); 1 Electrostatic Protection Cap (200-3961-00); 1 Adjustable Anti-Static Wrist Strap (006-3415-04); Storage Cabinet; Instruction Manual (070-8553-00).

P6231

10X, 1.5 GHz Bias/Offset Probe.

Includes: Retractable probe tip (013-0208-02); Probe Tip-to-Circuit Board Connector (131-2766-03); 6 in Ground Lead w/Alligator (196-3305-00); 6 in Ground Lead w/Square Pin Receptacle (196-3113-02); 2 in Ground Lead (195-4240-00); SMT KlipChip™ (206-0364-00); Probe Adjustment Tool (003-1433-00); Probe Holder (352-0351-00); Cable Markers, 2 Each of 4 Colors; Carrying Case; Instruction Manual (070-6027-00).

ADDITIONAL ACCESSORIES

Probe Tip Adapter – For P6207, P6217 and SD-14 Active Probes Instruction Sheet Plus SMA Male 50 Ω Termination provided. Order 013-0271-00.

1103

TEKPROBE™ Power Supply.

For P6203, P6204, P6205, P6231 and P6217. Powers 2 Probes (See Page 438).

To order, contact your local sales office (listed on pages 536-539).