

**P6217**  
**P6205**  
**1103**

**P6204**  
**P6231**

## Active FET Probes

For TEKPROBE™ BNC Interfaces

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

**P6217/P6205/  
P6204/P6231**

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

**P6217**

- DC to 4 GHz
- $\leq 0.40$  pF Input C
- $100$  k $\Omega$  Input R
- DC Offset
- Small Size

**P6205**

- DC to 750 MHz
- 2 pF Input C
- $1$  M $\Omega$  Input R
- Low Price

**P6204**

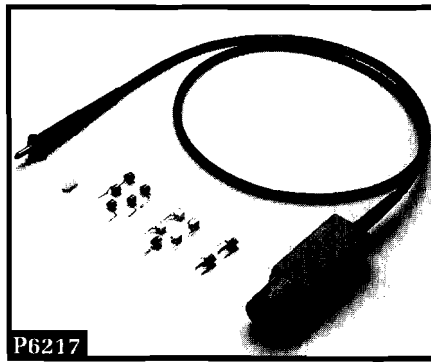
- DC to 1 GHz
- 1.9 pF Input C
- $10$  M $\Omega$  Input R
- DC Offset
- Identify Button

**P6231**

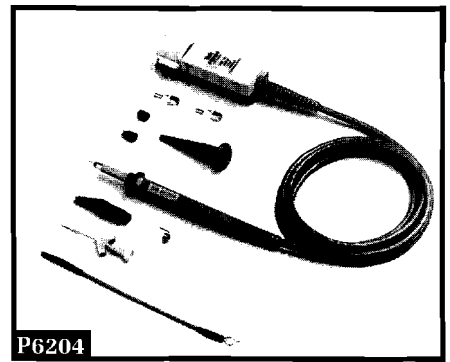
- DC to 1.5 GHz
- 1.6 pF Input C
- $450$   $\Omega$  Input R
- Bias/Offset (Tip Nulling)
- Small Size

**1103**

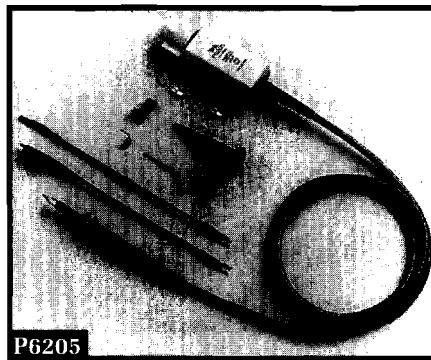
- Powers up to Two Probes
- For Use with:
  - 11000 Series Probes on Non-TEKPROBE™ Interfaced Scopes
  - P6203, P6204, P6205, P6217, P6231, P6245
- Overload Protected



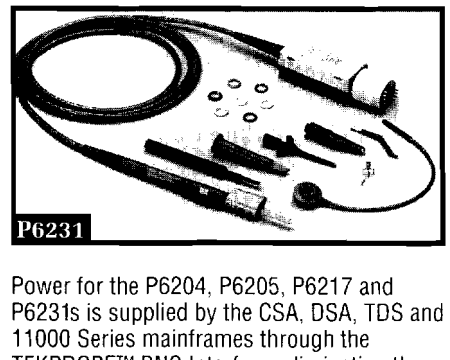
P6217



P6204



P6205



P6231

Power for the P6204, P6205, P6217 and P6231s 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 P6204 and P6217 probes.

The P6231 Bias/Offset probe acts as a standard  $500$   $\Omega$  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 probe's input resistor.

The P6204, P6205, P6217 and P6231 Probes are Tektronix' 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 P6231 is a specialty active probe that provides a higher impedance level to DC through a Bias/Offset capability which provides an adjustable tip nulling voltage.

The P6217 provides the widest bandwidth and lowest input capacitance at  $100$  K $\Omega$  available for a handheld 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.

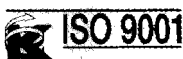
All three Active FET probes provide a wide linear dynamic input range for accessing most digital device families using today's logic voltage levels.



1103

P6205/1103 available through an Authorized Tektronix Distributor (see pages 590-595).

Product(s) available through your local Tektronix representative (listed in the back of this catalog) or call 1-800-426-2200.



ACCREDITED BY THE DUTCH ORGANISM FOR CERTIFICATION  
Tektronix Measurement products are manufactured in ISO registered facilities.

# Active FET Probes

## For TEKPROBE™ BNC Interfaces

**P6217**  
**P6205**  
**1103**

**P6204**  
**P6231**

ACTIVE PROBES

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 P6204 and P6231 probe head. These functions 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.

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 has dual TEKPROBE™ inputs, dual BNC signal outputs, and dual voltage offset on/off switches and potentiometers.

### 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 required.\*1
- **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.
- **UL Listed** – Third party certification for safe operation.

### DESIGNED FOR:

- Digital Design and Debug of Logic Families such as:
  - ECL
  - GaAs
  - MOS
  - CMOS
  - FastCMOS
  - BiCMOS
  - 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.

### 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
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	11000 *2/TDS400 *3
P6217	1.5	10X	4000	0.40 Typical	100 k	±4.0	±5.0	±40	TPB/Y/N	TDS 500(A)/TDS 600(A)/TDS 700
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, P6217, and P6245 DC Offset functions are not incorporated into the TDS400 Family.

### ORDERING INFORMATION

- P6204**  
10X, 1 GHz Active FET Probe ..... **\$1,595**  
**Includes:** Retractable Hook Tip (013-0107-07); 6 in. Ground Lead with Alligator (196-3120-00); 6 in. Ground Lead with 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 (070-6949-00).
- P6205**  
10X, 750 MHz Active FET Probe ..... **\$595**  
**Includes:** Same as P6204 except Instruction Manual (070-8202-00).
- P6217**  
4 GHz Active FET Probe ..... **\$3,595**  
**Includes:** 4-post ECB Mount Ground Socket (131-5308-00); 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 ..... **\$799**  
**Includes:** Retractable Probe Tip (013-0208-02); Probe Tip-to-Circuit Board Connector (131-2766-03); 6 in.

Ground Lead with Alligator (196-3305-00); 6 in. Ground Lead with 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).

### RECOMMENDED ACCESSORIES

See page 476-494 for complete selection information.  
**Probe Tip Adapter** – For P6207, P6217 and SD-14 Active Probes. Instruction Sheet Plus SMA Male 50 Ω Termination provided.  
Order 013-0271-01 ..... **\$560**

**1103**  
TEKPROBE™ Power Supply ..... **\$655**  
For P6203, P6204, P6205, P6217, P6245 and P6231. Powers 2 Probes.

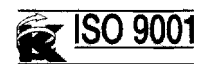
### INTERNATIONAL POWER PLUG OPTIONS

**Opt. A1 – Opt. A5** – Available.  
See the General Customer Information Section for description.

### ADDITIONAL ACCESSORIES (FOR 1103)

**36 In. Precision 50 Ω BNC cable** – Order 012-0482-00 ..... **\$38**  
**50 Ω Feedthrough Termination** – Order 011-0049-01 ..... **\$40**

Product(s) available through your local Tektronix representative (listed in the back of this catalog) or call 1-800-426-2200.



TEKTRONIX MEASUREMENT PRODUCTS ARE MANUFACTURED IN ISO REGISTERED FACILITIES.