

# CHARACTERISTICS

The P6201 is an active (FET) probe providing unity gain and DC to 900 MHz bandwidth. The low input-capacitance of the probe permits coupling of high-frequency signals to an oscilloscope input with minimum loading on the circuit under test. Plug-on attenuator heads provide higher input resistance, reduced input capacitance, and attenuation of the signal. Effective DC offset range is also increased when using an attenuator head.

The P6201 is designed primarily for use with TEKTRONIX 7000-Series, 475, or 485 Oscilloscopes, but may be used with 50-ohm sampling instruments and conventional oscilloscopes (with 1 M $\Omega$  input resistance). The internal 50-ohm termination may be switched in or out to adapt the probe output to either 1-megohm or 50-ohm inputs.

The probe includes a locking-type BNC connector which provides scale-factor readout information to instruments having the readout capability. The 10X and 100X attenuator heads also couple readout information to the instrument via the output connector.

The P6201 may be powered from the probe power output of the 7500, 7700, and 7900-Series Mainframes, the 475 and 485 Oscilloscopes, or by the 1101 Accessory Power Supply.

## ELECTRICAL CHARACTERISTICS

Bandwidth	DC to 900 MHz.
Risetime	
Probe Only	0.39 ns or less
Probe Attenuation	1X within 3% 10X within 4% (with attenuator) 100X within 4% (with attenuator).
Input Impedance	
Probe Only	100 k $\Omega$ (within 1%) shunted by 3.0 pF (within 10%). See R <sub>p</sub> , C <sub>p</sub> Curves.

Attenuator Heads	1 M $\Omega$ (within 1%) shunted by $\approx$ 1.5 pF. See R <sub>p</sub> , C <sub>p</sub> Curves.
Input Dynamic Range	
1X	$\pm$ 0.6 V (1.2 V peak-to-peak) maximum with $\pm$ 5.6 V DC offset.
10X	$\pm$ 6 V (12 V peak-to-peak) maximum with $\pm$ 56 V DC offset.
100X	$\pm$ 60 V (120 V peak-to-peak) maximum with $\pm$ 200 V DC offset. Not to exceed $\pm$ 200 V (DC + peak AC).
Noise (Tangential)	300 $\mu$ V or less at output (150 $\mu$ V RMS).
DC Stability (Drift with Temperature Change)	
Probe Only	Less than 50 $\mu$ V/°C at output.
Probe and Amplifier	Less than 300 $\mu$ V/°C at output.
Output Impedance (50 $\Omega$ TERM Switch Set to INT)	25 $\Omega$ (for use with 1 M $\Omega$ inputs).
Output Load Required (50 $\Omega$ TERM Switch Set to EXT)	50 $\Omega$ with $\pm$ 1 $\Omega$ .
Signal Delay (Probe Tip to Amplifier Output)	$\approx$ 11.2 ns. Differential delay between two probes 0.1 ns or less.
Maximum Input Voltage (AC or DC Coupled)	
1X	$\pm$ 100 V, derated with frequency. See voltage versus frequency curve.
10X and 100X	$\pm$ 200 V (DC + peak AC), derated with frequency.
LF Response (-3 db, AC Coupled)	10 Hz or lower. 10X attenuator extends LF response to $\leq$ 1 Hz. With 100X attenuator, LF response is $\leq$ 10 Hz.

Characteristics—P6201 Probe

ELECTRICAL CHARACTERISTICS (cont)

Power Requirements +15 V at  $\cong 105$  mA and -15 V at  $\cong 110$  mA. Total power, 3.2 W.

PHYSICAL CHARACTERISTICS

Probe Cable Length 72.0 inches, 182.88 cm (nominal).

Probe Power Cable Length 51.0 inches, 129.54 cm (nominal) including Lemo Connector.

Amplifier Box Dimensions Length (including connector and knob) 4.485 inches (11.39 cm) maximum.

Width,  $\cong 1.180$  inches (3.0 cm).

Height,  $\cong 1.62$  inches (4.11 cm).

Probe Body Dimensions Diameter, 0.58 inch (1.47 cm) maximum outside diameter.

Length, 3.430 inches (8.71 cm).

PHYSICAL CHARACTERISTICS (cont)

Length with attenuator head, 4.780 inches (12.14 cm).

Attenuator Head Dimensions Diameter, 0.890 inch (1.75 cm) maximum outside diameter.

Length, 2.27 inches (5.77 cm).

Weight (Includes Standard Accessories) 24.5 ounces (694.58 grams).

ENVIRONMENTAL CHARACTERISTICS

The probe will operate within specifications over the following ranges: Temperature, 0°C to +50°C. Altitude, to 15,000 feet.

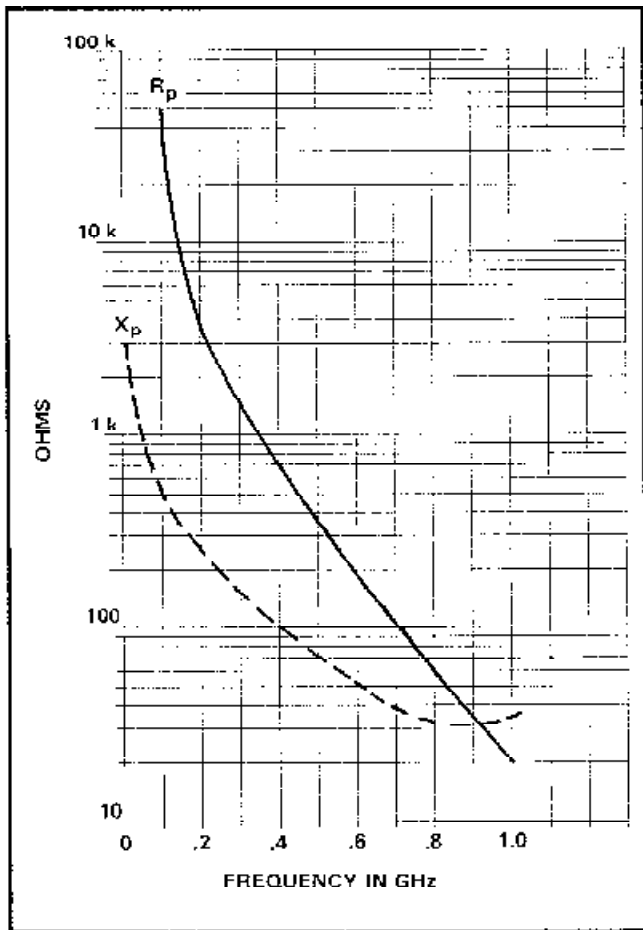


Fig. 1-2. P6201 Probe alone. Input  $X_p$  and  $R_p$  as a function of frequency.

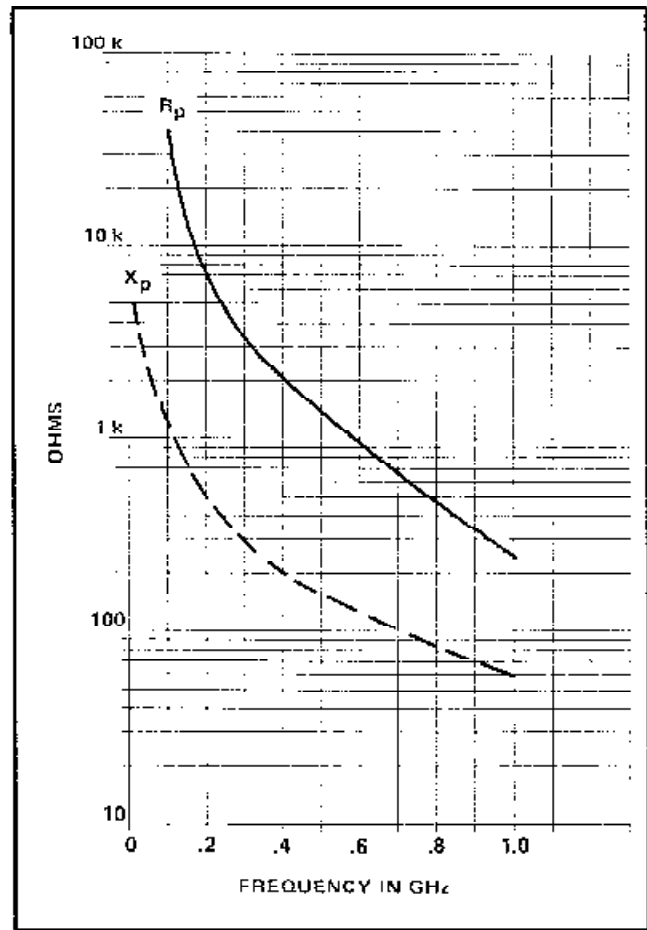


Fig. 1-3. P6201 Probe with 10X or 100X attenuator. Input  $X_p$  and  $R_p$  as a function of frequency.

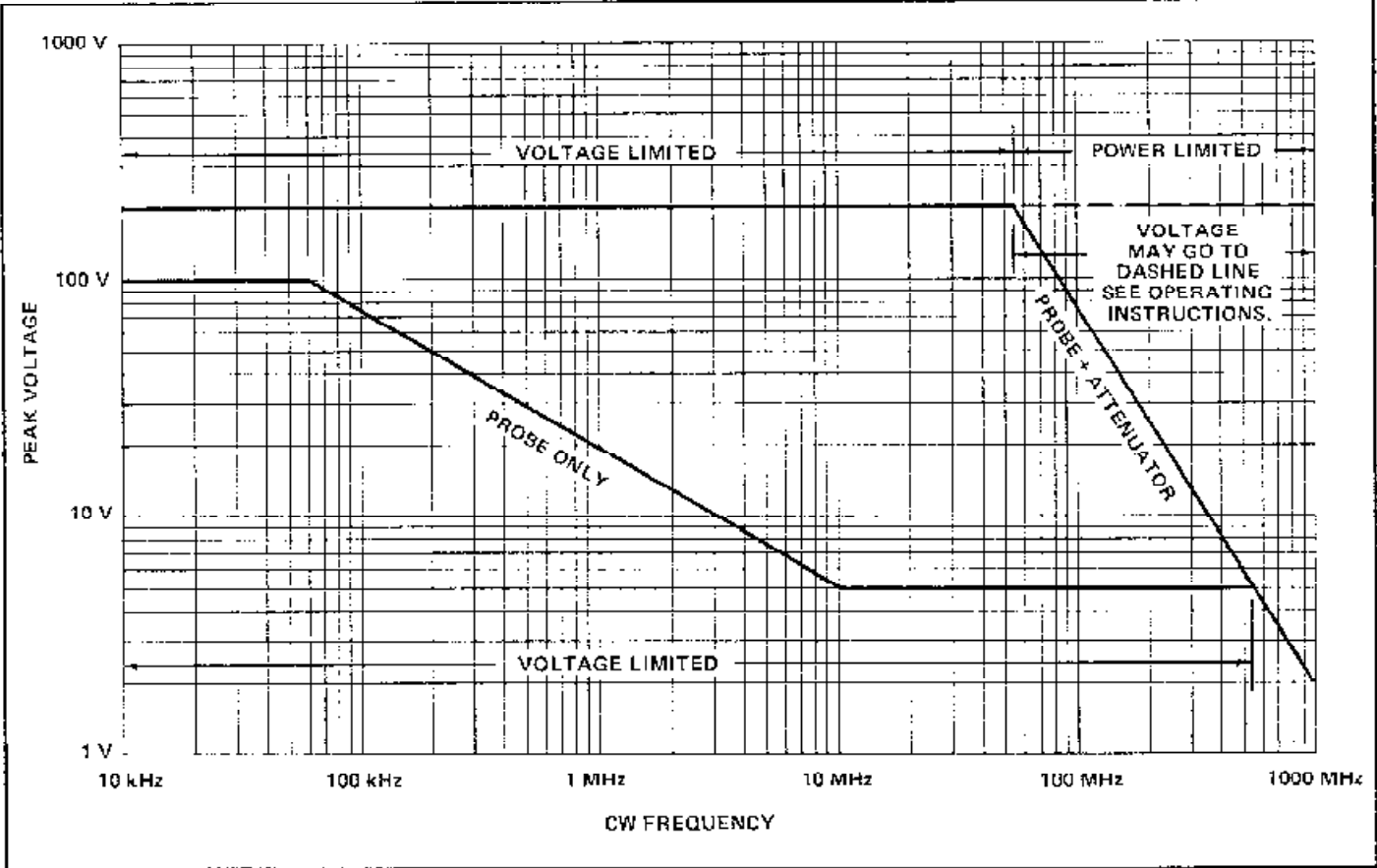


Fig. 1-4. P6201 Probe, and probe with attenuator, typical voltage derating with frequency.