

# P2106A 1-Port Resistive Divider Probe

Data Sheet

## High Voltage Resistive Divider Noise Probe

noise

ripple

power supplies

power systems

48V electric-vehicle

RF Power Amplifier

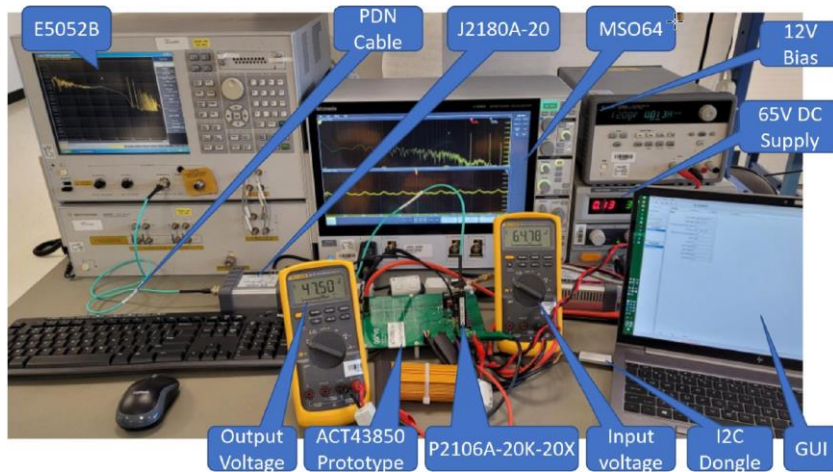
48-V telecom/data-center



# P2106A Probe

## 1-Port Resistive Divider Probe

The Picotest P2106A probe is a high impedance voltage divider ‘Browser’ probe, specifically designed to be low bandwidth and resonance free. When paired with the Picotest J2180A low noise amplifier and PDN Cable®, the low noise measurement can be connected directly to any 50 Ohm instrument, including signal source analyzers, spectrum analyzers, and low-noise oscilloscopes. The P2106A provides one of the lowest noise floor testing solutions, allowing measurement of sensitive power supplies for power amplifiers and telecommunications equipment up to and exceeding 65V.



**Typical P2106A Test Setup**

The general application is to connect a relatively High Z, uncompensated P2106A probe to the J2180A amplifier for the purpose of getting a low noise, low bandwidth signal to a 50 Ohm instrument.

**The attenuation and resistance ratio can be customized.**

The P2106A is available in fixed pin pitches of 50, 60, or 100mils. The P2106A probe can be purchased in almost any desired attenuation. Using an uncompensated voltage divider results in near zero capacitance and is assured to be resonance free for accurate measurement with minimal loading. The uncompensated divider results in a low bandwidth measurement, set primarily by the coaxial cable and J2180A preamplifier capacitance.

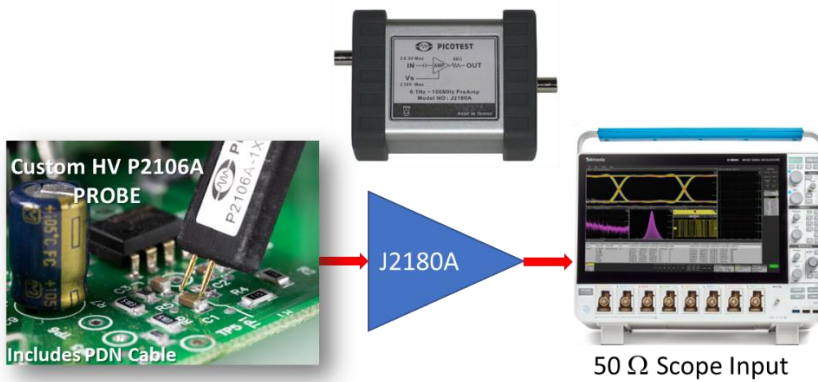
The Picotest High Voltage Noise Bundle (bundle ID: HV-NOISE) is available including the J2180A preamplifier, with the “Shielded” option as a noise preamplifier and to convert the high input impedance probe to the 50Ω input impedance analyzer, along with the P2106A noise probe PDN Cable for high shield attenuation coaxial connections.

**FEATURES:**

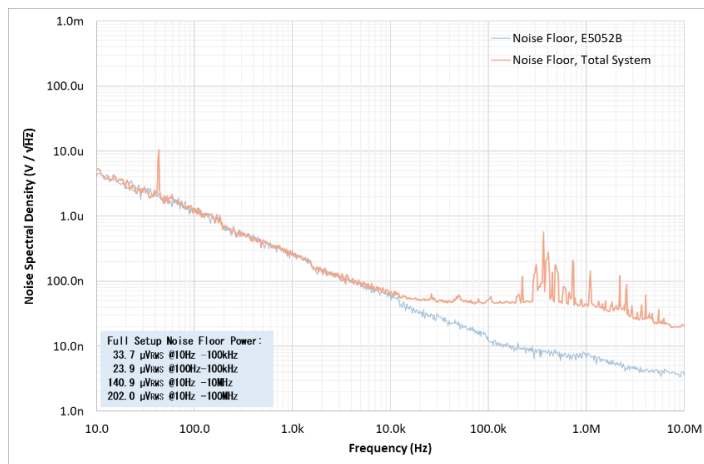
- Available in 1:1, 20:1 and User-Defined Attenuations
- 50, 60, and 100 mil Pin Pitches
- Bandwidth – Typically 1-2 MHz
- Virtually no capacitive loading, uncompensated assures no peaking
- Supports low noise measurement
- Couples to J2180A preamplifier to reduce noise, convert to 50 Ohm instrument compatibility
- Optimized for SNR
- Rugged, ergonomic design, small form factor gets into tight places
- Slim body with spring tips provides good visibility of the target and reliable connectivity
- Uses PDN Cable® for optimum performance

**HIGHLIGHTS:**

- Solid State RF Power Amplifier, 48V Electric-Vehicle, 48-V Telecom/Data-Center, 240-W USB Power Delivery, and other electronic applications demand higher voltage but also low noise. The P2106A HV Noise bundle is an integral part of connecting to and testing these systems
- Browser class probes - greatly eases the testing of multiple power rails
- 50 ohm impedance compatible with all 50 Ohm instruments including all oscilloscopes, signal source analyzers and spectrum analyzers



Sample tested performance, 680uV RMS noise, 6Vpp max signal, 150V max DC+AC, <60 -1MHz, >600V isolation. The J2180A provides the 50 ohm instrument compatibility.

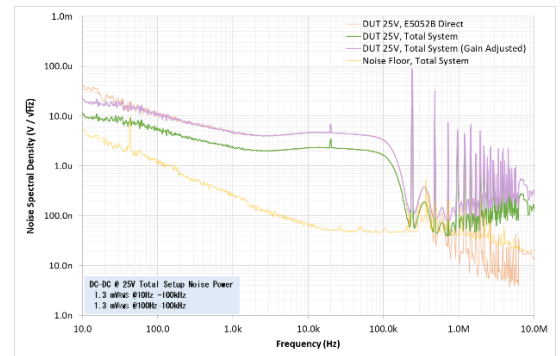


Noise floor of the P2106A probe + J2180A amplifier + E5052B SSA



The J2180A high performance, ultra-low noise x10 gain (20dB) preamplifier.

For more information on Picotest products, applications, or services, please contact Picotest at [info@picotest.com](mailto:info@picotest.com).



DC-DC regulator (DUT) noise at 25 V

## SPECIFICATIONS

Probe Voltage and Impedance	Impedance: Maximum Tip Voltage 20 kOhms: 65 Vrms (20X Attenuation)	SMPM Voltage 3.25V *
<b>P2106A 1-Port Resistive Probe</b>		
<b>Characteristic</b>	<b>Rating</b>	
Bandwidth	DC-1MHz **	
Attenuation	Available in almost any user defined attenuation Selected when purchased, NOT changeable by use	
Probe Tip Size/ Probe Pitch	Available in 50 mil, 60 mil, and 100mil Fixed Pitches	
Input C:	<1pF	
Probe Connection	MINI_SMP	
Rise Time (1X)	175ns - 350ns	
Pin Resistance	Typical: 15m Ohms, Maximum 30m Ohms	
Nominal Cable Length	0.5m	
Operating Temperature	0 to 45° C (32° F to 104° F) at 80% Relative Humidity	
Maximum Relative Humidity	80% at 31° C max	
Usage	Indoor	
Altitude	3000 m (9850 feet)	
Absolute Maximum Voltage	< 50VAC and 75VDC	

\* Note: Maximum Port Voltage shown based on the specified maximum tip voltage. Consult your VNA's manual to verify the VNA port voltage is below the ratings of your instrument.

\*\* The bandwidth is dependent on the cable length and the J2180A input capacitance.

This information is subject to change without notice.

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Caution: To avoid equipment damage and/or severe injuries death or death do not use this probe close to voltages higher than 50 VAC or 75 VDC.