High-Resolution Current Probes

DATA SHEET / 4T-102

MODELS:

AVCP-1
AVCP-10
AVCP-50
Anteverta
High-Precision Current Probes

GENERAL INFORMATION

Features & Benefits
> Resistor-based for simplified long-term use
> Ideal for low-current measurements
> Compatible with most commercial oscilloscopes and digitizers
> Ideal for pulsed measurements

What are Current Probes?

Current probes are active devices which are used in conjunction with an oscilloscope or DMM to determine the current of a device under test. Current probes are either placed directly between a measurement instrument and DUT in order to measure the amplified voltage across an internal resistance or clamped onto a conductor/wire in order to measure the magnetic field created by the current flowing through the wire.

AVCP-Series Overview

AVCP-series current probes are based on a series resistor and differential amplifier which generates an output voltage proportional to the current flowing through the resistor. Large series resistors are used to create a large voltage drop in order to measure extremely low currents in the order of uA and mA. Unlike current probes based on Hall effect sensors, AVCP-series current probes do not need to be demagnetized (degauessed) and can be used more easily over long periods of time. AVCP current probes can be connected by BNC cable to nearly any commercial oscilloscope or DMM and are ideal for measuring active devices with low currents such as transistors under pulsed conditions.

Available Models

<table>
<thead>
<tr>
<th></th>
<th>AVCP-1</th>
<th>AVCP-10</th>
<th>AVCP-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irange (DC continuous)</td>
<td>+/- 0.2 A</td>
<td>+/- 0.02 A</td>
<td>+/- 0.004 A</td>
</tr>
<tr>
<td>Vrange</td>
<td>-5 V to 80 V</td>
<td>-5 V to 80 V</td>
<td>-5 V to 80 V</td>
</tr>
<tr>
<td>Gain</td>
<td>10 V/A</td>
<td>100 V/A</td>
<td>500 V/A</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>DC - 2 MHz</td>
<td>DC - 2 MHz</td>
<td>DC - 2 MHz</td>
</tr>
<tr>
<td>Rise time</td>
<td>175 ns or less</td>
<td>175 ns or less</td>
<td>175 ns or less</td>
</tr>
<tr>
<td>DC Accuracy</td>
<td>+/- 3% of reading</td>
<td>+/- 3% of reading</td>
<td>+/- 3% of reading</td>
</tr>
<tr>
<td>Lowest measurable current (at ±3% accuracy at DC) ²</td>
<td>1.4 mA</td>
<td>110 uA</td>
<td>38 uA</td>
</tr>
<tr>
<td>Displayed RMS noise, typical (at 20 MHz bandwidth limit)</td>
<td>200 uA rms or less</td>
<td>24 uA rms or less</td>
<td>9.2 uA rms or less</td>
</tr>
<tr>
<td>Insertion impedance</td>
<td>0.92 ohm @ 1 MHz, 1.88 ohm @ 10 MHz, 7.61 ohm @ 50 MHz, 14.61 ohm @ 100 MHz</td>
<td>9.94 ohm @ 1 MHz, 10.13 ohm @ 10 MHz, 12.61 ohm @ 50 MHz, 17.91 ohm @ 100 MHz</td>
<td>49.53 ohm @ 1 MHz, 49.28 ohm @ 10 MHz, 49.43 ohm @ 50 MHz, 49.91 ohm @ 100 MHz</td>
</tr>
<tr>
<td>Idamage (DC continuous)</td>
<td>1400 mA</td>
<td>500 mA</td>
<td>200 mA</td>
</tr>
</tbody>
</table>

¹ Tr = 0.35/(BW in GHz)
² Calibrated with a short and remeasured with 50 ohm
³ Calibrated with a short and measured 50 times with short on Iout
Typical Impedance Plots

AVCP-1

AVCP-10

AVCP-50
High-Resolution Current Probes
Dimensions (in/mm)
VISIT OUR WEB STORE TO LEARN MORE ABOUT OUR PRODUCTS

www.maurymw.com