High-Resolution Current Probes

DATA SHEET / 4T-102

MODELS: AVCP-1
AVCP-10
AVCP-50

Maury Microwave

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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 (degaussed) 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

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

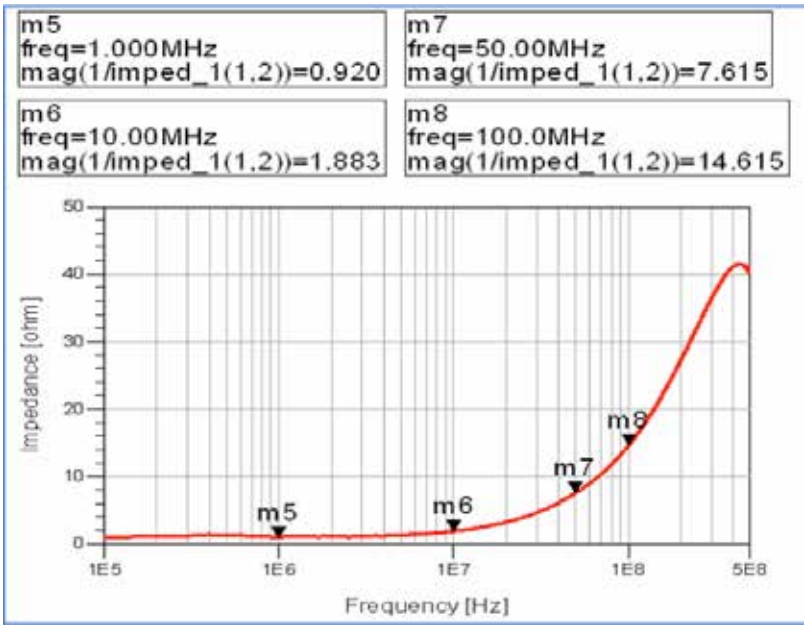
[1] Tr = 0.35/(BW in GHz)

[2] Calibrated with a short and remeasured with 50 ohm

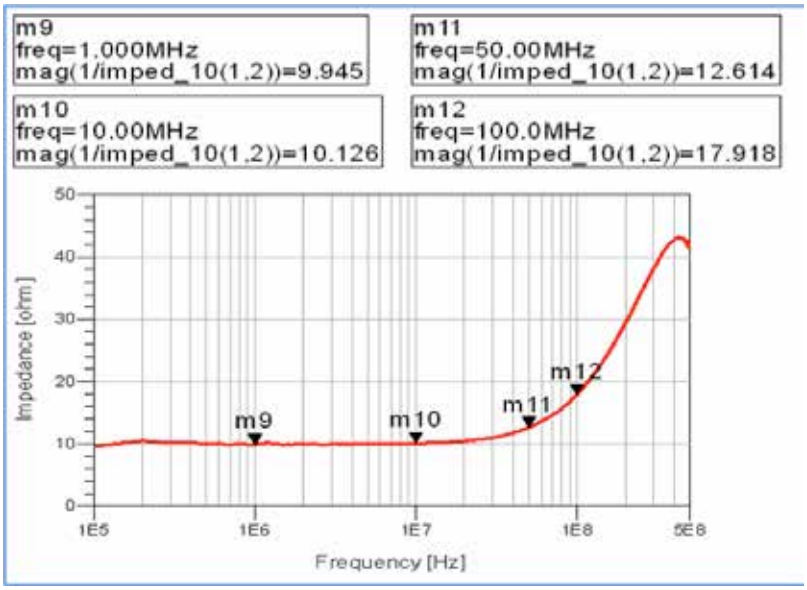
[3] Calibrated with a short and measured 50 times with short on Iout

Typical Impedance Plots

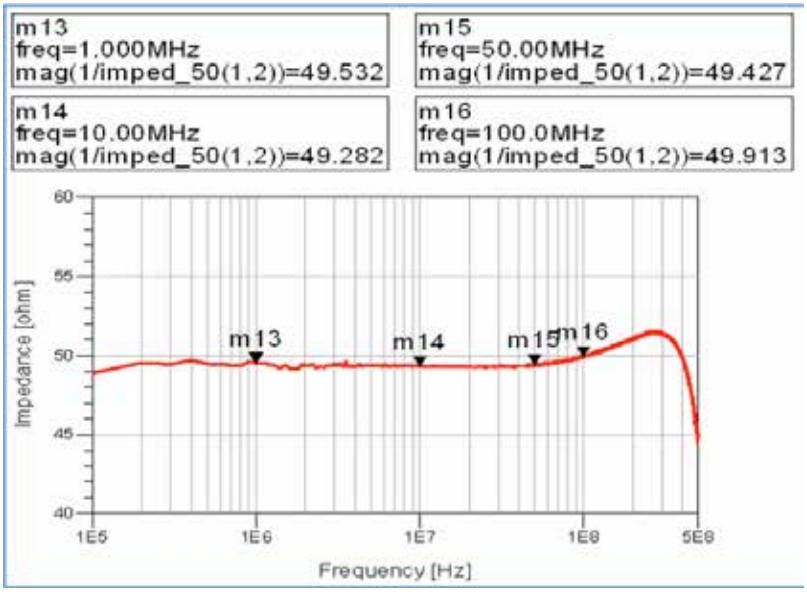
AVCP-1



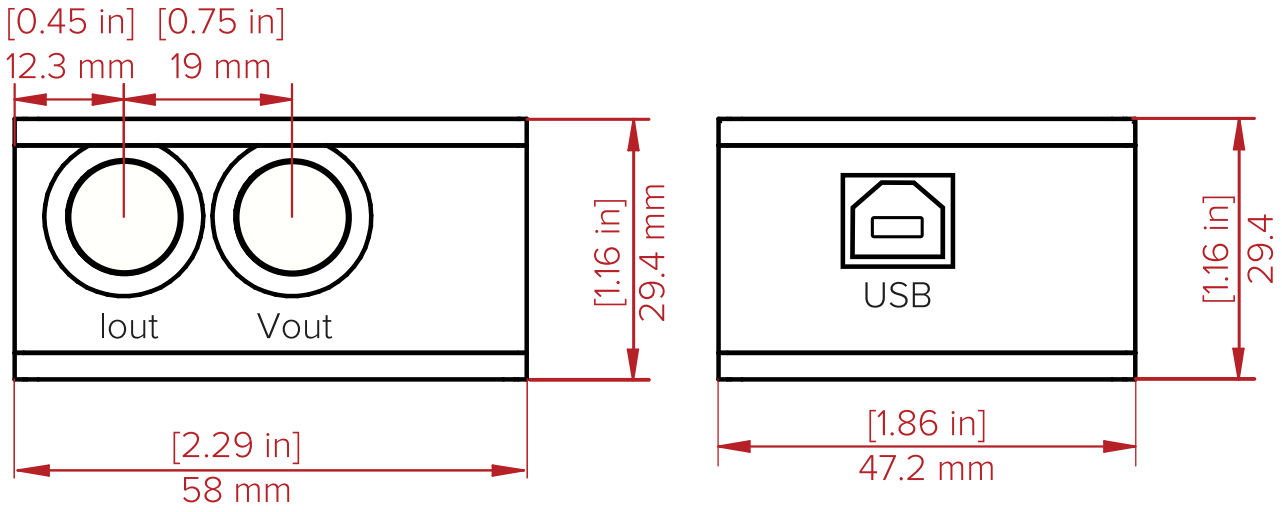
AVCP-10

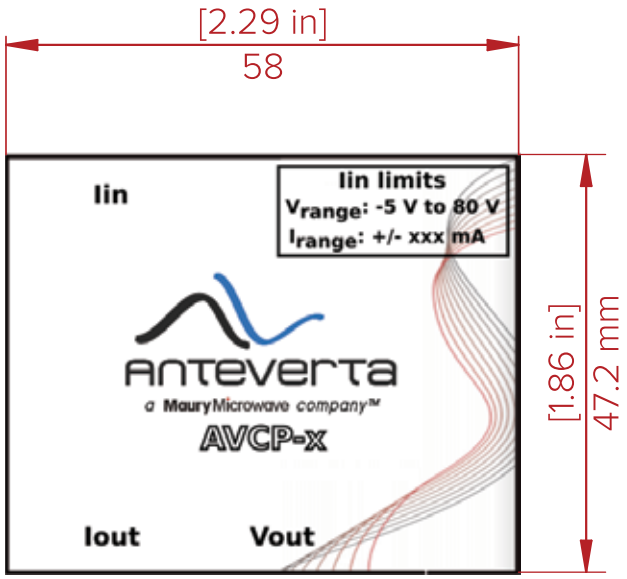


AVCP-50



High-Resolution Current Probes Dimensions (in/mm)





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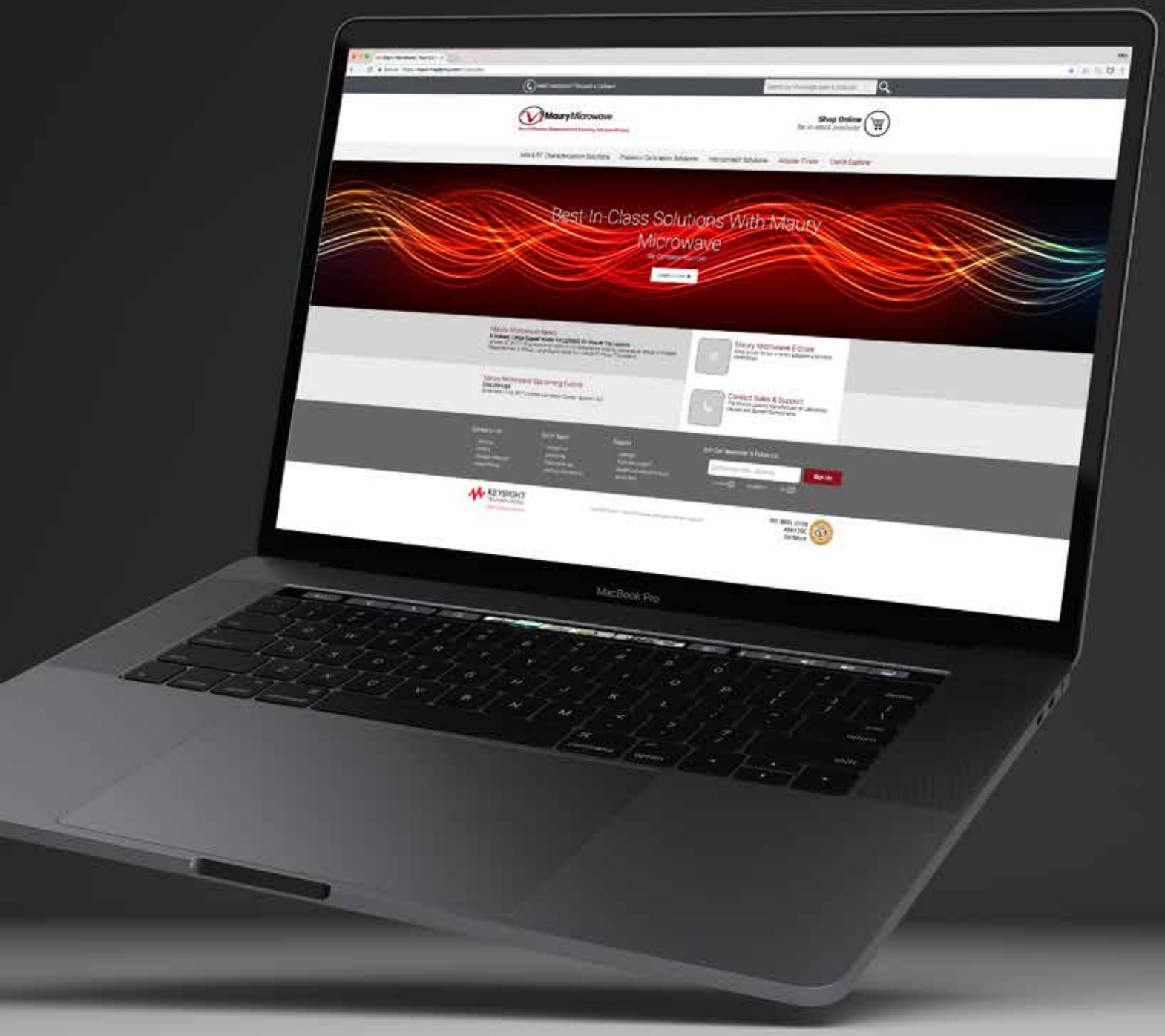

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