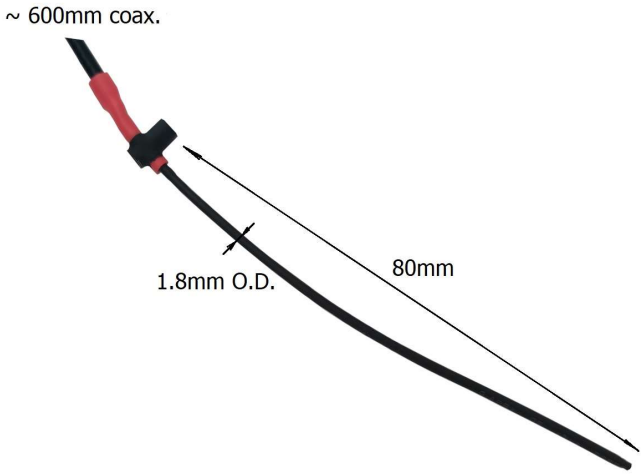
RP8025 Rogowski coil current probe Datasheet

RP8025 Rogowski Coil-based Current Probe, engineered to provide precise measurements of high-frequency AC currents in tight spaces without breaking the bank. This innovative probe boasts a compact sensing coil, perfectly suited for slipping between the leads of a TO-220 transistor or wrapping around the leads of various through-hole power components. The RP8025 includes both the Rogowski Coil and an integrator/amplifier, expertly engineered to condition the signal from the coil and produce an output voltage reflecting the current flow within a conductor encircled by the Rogowski Coil. Particularly useful for investigating Switching Mode Power Supplies (SMPS), unlock exceptional accuracy and versatility with our cost-effective Rogowski Coil-based Current Probe.

Miniature Rogowski Coil, boasting a sleek design with a compact ~30mm diameter for seamless non-intrusive current measurements.

- 80mm long Rogowski coil
- 1.8mm outer diameter
- 600mm coax cable to the instrument



Crafted with a sturdy aluminum enclosure, featuring a convenient BNC connector for direct attachment to your oscilloscope.

Effortlessly powered via the oscilloscope's USB connector, utilizing a dependable USB-C connection on the instrument side.

Fine-tune both the sensitivity and impulse slope compensation, ensuring most accurate representation of what you are measuring.

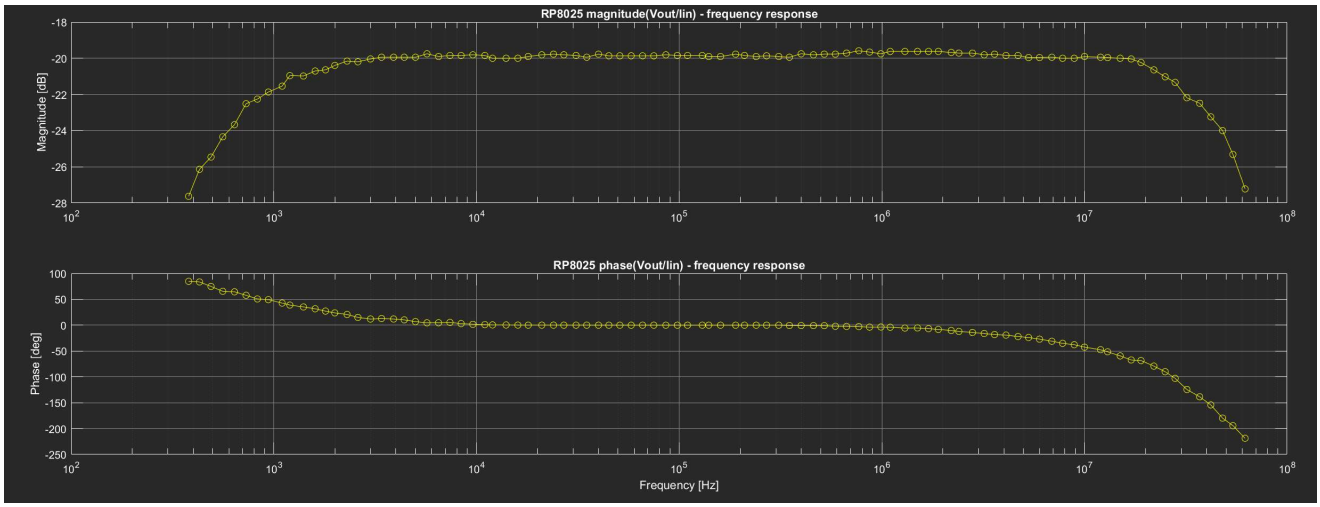
Specification

Parameter	Value	Unit
Electrical		
Bandwidth	0.8 - 25000	kHz
Sensitivity	0.1	V/A
Current Range	+/- 25	A
Noise RMS vlue	6	mA
Slew Rate	1	A/ns
Mechanical		
Coil length	80	mm
Coil outer diameter	1.8	mm
Coax cable length	600	mm
Enclosure dimensions	25 x 25 x 53	mm
Environment		
Working temperature of the enclosure	0 - +55	°C
Working temperature of the coil	-10 - +100	°C
Storage temperature	-20 - +70	°C

Operation

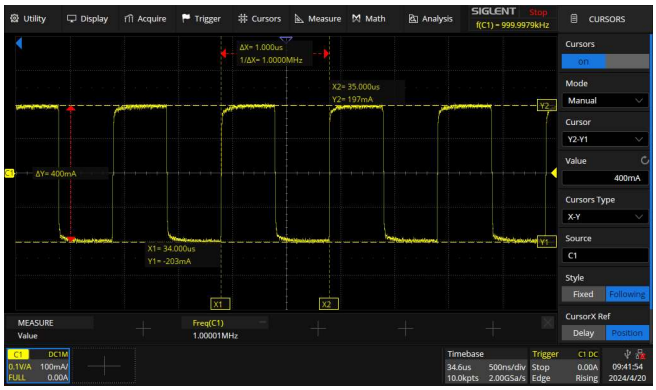
- Connect the RP8025 to the oscilloscope's BNC connector.
- Set the oscilloscope input to high impedance (1MΩ).
- Power the RP8025 using the provided USB cable. Connect it to the USB-A connector on your oscilloscope. Verify that the RP8025 power LED illuminates.
- Adjust the oscilloscope sensitivity for 1:10 probe.
- Set the oscilloscope unit to Amperes.
- Clip the coil around the wire/pin carrying the current of interest.

Measurements

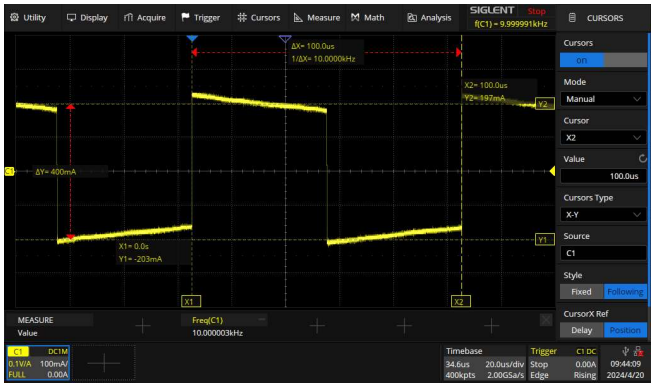


RP8025 – Measured frequency response

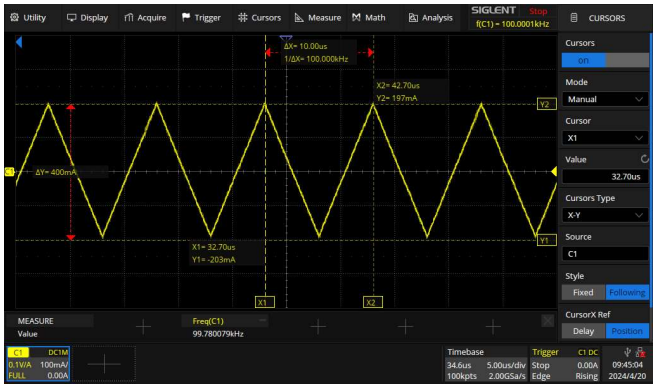
Ideal 400mApp 100KHz square wave current measurement



Ideal 400mApp 1MHz square wave current measurement



Ideal 400mApp 10KHz square wave. Due to low frequency cut-off the tops and bottoms are tilt.



400mApp ideal 100KHz triangle wave current measurement