High Frequency **Rogowski AC Current Probe**

HRCP Series Brochure



HRCP-XS Series

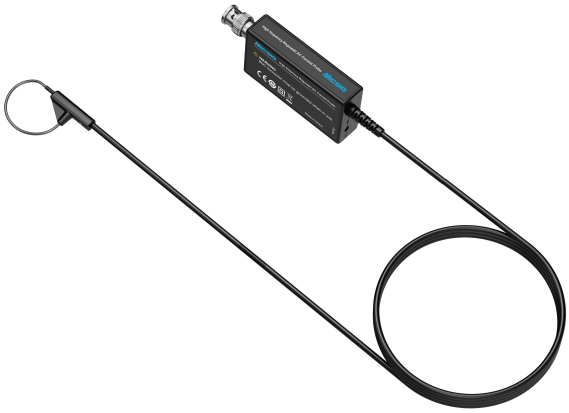
Shenzhen Micsig Technology Co., Ltd.
Tel: +86-(0)755-88600880 Email: sales@micsig.com Website: www.micsig.com
Add: 6F, Jinhuanyu Building, No. 56, Tiezai Rd, Bao'an District, Shenzhen, Guangdong, China.

Product Overview

The Micsig HRCP series Rogowski current probe measures AC currents up to 12000Apk, offers a maximum bandwidth of 100MHz. With nearly zero insertion impedance, the probes minimize interference to the circuit under test. The coil features extremely high voltage resistance (up to 3 kVpk). Customization is available for cable length, coil circumference, coil cross-sectional diameter, coil voltage withstand rating, and coil operating temperature, enabling the probe to be adapted to complex measurement setups.

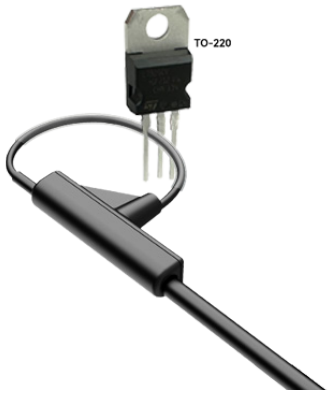
Product Features

- Temperature range from 0° C to 40° C （customizable）
- Maximum bandwidth up to 100MHz, capable of observing high-frequency switching waveforms
- Near-zero insertion impedance
- HRCP-XS series withstands up to 3kVpk（customizable）
- Wire diameter as thin as 1.6mm, enabling direct pin-level measurement
- Peak current range: 60Apk to 12000Apk
- Accuracy up to 2%
- Sensor section is shielded, minimizing interference from external noise environments



Smallest Coil Cross-section

HRCP-XS series coil has a cross-sectional diameter of just 1.6 mm, effortlessly passing through the narrow lead pitch of semiconductor devices such as TO-220 and TO-47 .



Accurate High-Frequency Harmonic Capture

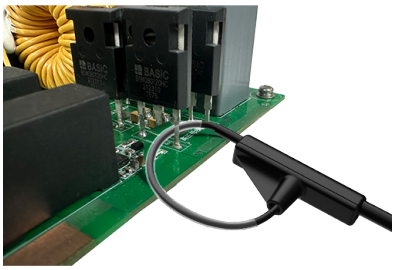
Excellent high-frequency measurement capabilities, easily measures high-speed signals, able to observe HF harmonic components when measuring the Id current of MOSFET (as shown the oscillation section).



Figure: Signal measured with the HRCP600XS-80.

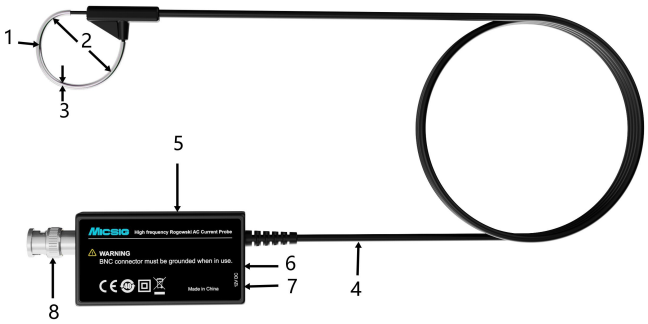
Applications

- Measuring current in motor drives and in particular power quality measurements in VSD, UPS or SMPS circuits
- Double-pulse testing to measure the pin currents of MOSFET and IGBT chips made of materials such as SiC and GaN.
- Monitoring currents in small inductors, capacitors, snubber circuits, etc
- Measurement of load current and high-order harmonic current in power electronics
- Measuring small AC currents in the presence of large DC currents
- Measuring high frequency sinusoidal, pulsed or transient currents
- Measuring AC currents in 3-phase supply system
- Measuring the power consumption in semiconductors
- Measurement of 50/60Hz power frequency current
- Power converter development and diagnostics



Product Specifications

The coil includes a removable silicone sleeve that provides robust mechanical protection.



Model	HRCP-XS Series
Coil length (Typical)	80mm（customizable）
Measurable conductor diameter	≤ 20mm
Coil cross-section diameter (Typical)	1.6mm
Wire length (Typical)	1.5m (integrator to Rogowski coil，customziable)
Integrator size	70*40*17mm
Power supply	DC 12V
Interface	1MΩ BNC
Working temperature	Host temperature: 0℃ to 40℃
Storage temperature	-30°C -70°C
Working humidity	⩽ 85%RH
Storage humidity	⩽ 90%RH
CE standard	EN IEC 61010-2-032
EMC standard	EN IEC 61326-1:2021，EN IEC 61326-2-1:2021，EN IEC 61000-3-2:2019+A1:2021，EN 61000-3-3:2013+A1:2019+A2:2021

※Coil inner diameter, coil circumference, cable length, coil operating temperature, and coil voltage withstand rating are customizable.

Parameters

H**RCP-XS Series** (Typical coil cross-section diameter: 1.6 mm)

Model	Bandwidth	Peak current	Output sensitivity	Output noise	Peak di/dt	Droop	Accuracy (typical)	Peak coil isolation voltage
HRCP60XS-80	150Hz-100MHz	60Apk	50mV/A (20x)	< 1.5mV-rms	8kA/μs	85%/ms	2%	3kVpk (Rogowski coil part)
HRCP120XS-80	80Hz-100MHz	120Apk	20mV/A (50x)	< 1.5mV-rms	20kA/μs	50%/ms		
HRCP300XS-80	40Hz-100MHz	300Apk	10mV/A (100X)	< 1.5mV-rms	40kA/μs	25%/ms		
HRCP600XS-80	20Hz-100MHz	600Apk	5mV/A (200X)	< 1.5mV-rms	80kA/μs	15%/ms		
HRCP1200XS-80	10Hz-100MHz	1200Apk	2mV/A (500X)	< 1.5mV-rms	100kA/μs	8%/ms		
HRCP3000XS-80	5Hz-100MHz	3000Apk	1mV/A (1000X)	< 1.5mV-rms	100kA/μs	5%/ms		
HRCP6000XS-80	3Hz-100MHz	6000Apk	0.5mV/A (2000X)	< 1.5mV-rms	100kA/μs	2%/ms		
HRCP12000XS-80	3Hz-100MHz	12000Apk	0.2mV/A (5000X)	< 1.5mV-rms	100kA/μs	2%/ms		

※ HRCP***XS-80: 80 mm coil length.

Accessories

Model	Standard Accessories
Rogowski AC Current Probe H**RCP Series**	HRCP Series Probe ×
	1Power Adapter × 1
	Suitcase × 1
	Calibration Certificate
	×1Quick Guide × 1

Product Notes

Operation steps

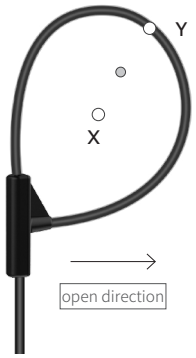
1) Connect to the oscilloscope: Set the oscilloscope input impedance to 1MΩ, connect the probe BNC end to oscilloscope (make sure the oscilloscope is properly grounded);
2) Power the probe: Use standard adapter to power the probe. Indicator light turns green after power on;
3) Connect the DUT: make sure that the coil plug is inserted in place and the wire or pin under test passes through the appropriate position of the coil.
4) Power up the DUT.
5) After test, disconnect the circuit first, then unplug the coil.
6) Disconnect probe power.

Precautions

※ to ensure accuracy, the wire being measured should be positionedas much as possible between X and Y in the right diagram, where X is the center of coil and Y is the midpoint of the coil length.

※ try to stay away from strong magnetic field interference sources asmuch as possible to avoid measurement errors.

※ the coil can be placed around the wire being measured to measurethe interference signals in the surrounding area, to determinewhether there is strong interference nearby.



Warranty

1) Micsig warrants the main body of this current probe for 3 year. During the warranty period, Micsig will be responsible for free maintenance for anyfailure caused by the quality of the product under normal use.
2) Under the following circumstances, Micsig will refuse to provide maintenance services or charge for a fee:
   - No packaging or anti-counterfeiting label.
   - Anti-counterfeit label has been altered or blurred beyond recognition.
   - Unauthorized disassembly, such as: changing wires, dismantling internal components, etc.
   - No sales voucher or the content of sales voucher does not match the product.

Shenzhen Micsig Technology Co., Ltd.

Tel: +86-(0)755-88600880 Email: sales@micsig.com Website: www.micsig.com

The final interpretation of this content is vested in Shenzhen Micsig Technologies Co., Ltd. For any updates to relevant information, please follow the official Micsig website.

Official Website