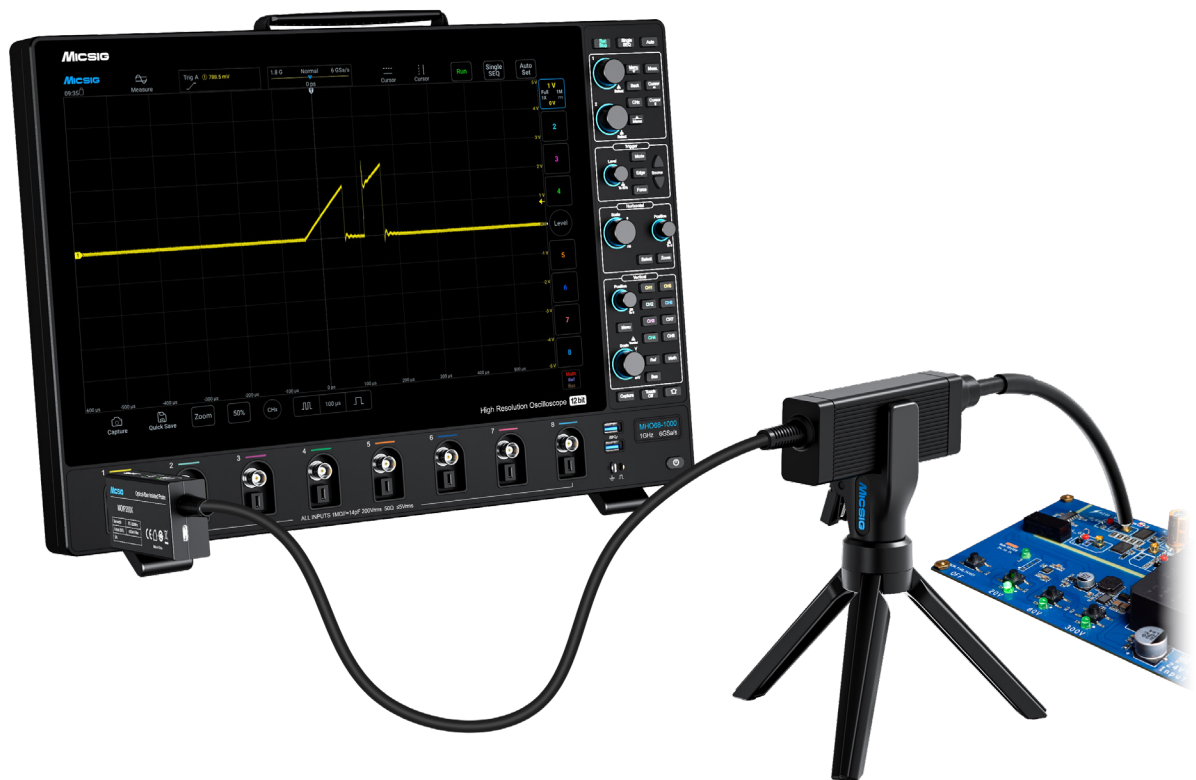


# SigOFIT Gen 3 Optical Isolated Probe

MOIP Series



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## Product Overview

The third-generation Micsig SigOFIT™ optical isolated probe, MOIP Series, offers a bandwidth range from 200 MHz to 350 MHz, enabling differential measurements from  $\pm 0.01$  V up to  $\pm 20$  kV. Built on Micsig's exclusive SigOFIT™ leading technology, MOIP Series delivers an exceptionally high CMRR, reaching up to 128 dB at 100 MHz, with an isolation voltage of up to 85 kV and an ultra-low noise floor of less than 0.3 mVrms. It reveals the complete truth of signals across its bandwidth range, serving as the ultimate referee for verifying the fidelity of signals measured by other voltage probes.

## Product Features

- Automatic calibration throughout, no manual calibration required
- Complete electrical isolation with an isolation voltage up to 85 kV
- High CMRR (up to 180 dB)
- Accurate measurement of high-speed, high-frequency signals
- With different attenuator, support differential signal testing from  $\pm 0.01$  V to  $\pm 20$  kV (Voltage ranges can be customized)
- Bandwidth options from 200 MHz to 350 MHz
- Low noise and excellent EMI immunity
- DC gain accuracy better than 1%
- Optical fiber length 2m (Fiber lengths can be customized)



High Voltage Differential Probe      SigOFIT Optical-fiber Isolated Probe

### Present True Signal

SigOFIT probe delivers highest CMRR: over 128dB at 100MHz. It's the ultimate referee of signal fidelity measured by other voltage probes.

### Best Probe for Third-Gen Semiconductor

Devices like SiC and GaN can switch high voltages in a few nanoseconds and generate very high-energy, high-frequency harmonics. Even at its highest bandwidth, the SigOFIT probe still maintains over 100dB CMRR and perfectly suppresses oscillations caused by high-frequency common-mode noise, making it the best choice for third-generation semiconductor test and measurement.

### Highest Accuracy

SigOFIT probe has excellent amplitude-frequency characteristics. DC gain accuracy  $\leq 1\%$ , while noise  $\leq 0.3$  mVrms. Zero drift  $< 0.1\%$  (works 5 mins later), gain drift also  $< 1\%$ .

### Calibration-Free Throughout the Entire Test Process

Real-time optical power compensation ensures continuous high-fidelity waveform output in complex 24/7 measurement environments, with no manual calibration required.



### Switching between 0dB and 20dB

SigOFIT optical isolation probe can be switched between 0dB and 20dB. Besides, different attenuators can be replaced to improve the signal-to-noise ratio, so that a single attenuator also has two range gears to improve the signal-to-noise ratio.



### Key Solution for Wide Semiconductor Testing

The test leads of SigOFIT probe are short and with coaxial cable transmission, the input capacitance is as low as 1pF minimum, making it very safe for testing GaN devices.

### Wide Measurement Range

Unlike traditional differential probes can only test high-voltage signals, the SigOFIT probe can be used with different attenuator tips to test differential mode signals from  $\pm 0.01V$  to  $\pm 20kV$ , achieving full-range output and very high signal-to-noise ratio.

## Product Specifications

Model	MOIP200X	MOIP350X
Bandwidth	200MHz	350MHz
Rise time	$\leq 1.75ns$	$\leq 1ns$
CMRR	DC: 180dB 200MHz: 122dB	DC: 180dB 350MHz: 118dB
Differential Voltage Range	Standard: OP50(MMCX), $\pm 25V$  Other test ranges customizable.	Standard: OP50(MMCX), $\pm 25V$ OP5000(MCX), $\pm 2500V$  Other test ranges customizable.
Noise	$< 0.3mVrms$	
DC Gain Accuracy	1%	
Common Mode Voltage Range	85kVpk	
Power Supply	DC 12V	
Fiber cable length	2m (Customizable)	
Interface	Universal BNC	

\* Fiber length and test voltage range are customizable.

## Mechanical Characteristics

Characteristic	Parameter
Optical-Electrical (O-E) converter size	9.8*4.5*2.3cm
Electrical-Optical (E-O) converter size	11*4*2.4cm
Optical cable length	2m (Customizable)

## Attenuator

Attenuator Model	Jack type	Attenuation ratio	Voltage range	Non-destructive voltage (Max.)	Input impedance
OP20-3	MMCX	20:1 @0dB	±10V	1000Vpk	4.47MΩ    4pF
		2:1 @20dB	±1V		
OP50-3	MMCX	50:1 @0dB	±25V	1000Vpk	4.19MΩ    2pF
		5:1 @20dB	±2.5V		
OP100-3	MMCX	100:1 @0dB	±50V	1000Vpk	4.10MΩ    2pF
		10:1 @20dB	±5V		
OP1000-3	MCX	1000:1 @0dB	±500V	2500Vpk	20.94MΩ    1pF
		100:1 @20dB	±50V		
OP2000-3	MCX	2000:1 @0dB	±1000V	2500Vpk	20.52MΩ    1pF
		200:1 @20dB	±100V		
OP5000-3	MCX	5000:1 @0dB	±2500V	2500Vpk	40.82MΩ    1pF
		500:1 @20dB	±250V		
OP10000-3	LCX	10000:1 @0dB	±5000V	8000Vpk	40.82MΩ    1pF
		1000:1 @20dB	±500V		

\* OPXX-\*, where XX indicates the attenuation ratio and \* indicates the bandwidth.

\* Attenuators for different measurement ranges can be customized.

## Attenuator Connector

The MOIP Series Gen 3 supports multiple connector types for DUT connection. Different connector choices may influence measurement accuracy, so the standard connector is recommended whenever possible. Optional connector accessories are available upon request through customer service.

Accessory Type	Voltage range	Non-destructive voltage (Max.)
MCX jack	±2500V	≤ 2500Vpk
MMCX jack	±50V	≤ 1000Vpk
MCX coaxial lead	±2500V	≤ 2500Vpk
MMCX coaxial lead	±50V	≤ 1000Vpk
MCX IC clip	±2500V	≤ 2500Vpk
MMCX IC clip	±50V	≤ 1000Vpk
LCX coaxial lead	±5000V	≤ 8000Vpk

## Attenuator Configuration

Accessories	MOIP200X	MOIP350X
50X Attenuator OP50-3	Standard 1 pc	Standard 1 pc
5000X Attenuator OP5000-3	X	Standard 1 pc
MMCX jack	Standard 5 pcs	Standard 5 pcs
MMCX coaxial lead	Standard 1 pc	Standard 1 pc
MMCX five-hole connector	Standard 1 pc	Standard 1 pc
MCX jack	X	Standard 5 pcs
MCX jack	X	Standard 1 pc
LCX coaxial lead	X	X
Other Attenuator	Optional	

- \* For attenuators with MMCX: Includes 5 MMCX female sockets, 1 MMCX coaxial extension cable, and 1 five-port MMCX connector block.
- \* For attenuators with MCX: Includes 5 MCX female sockets and 1 MCX coaxial extension cable.
- \* For attenuators with LCX: Includes 1 LCX coaxial extension cable.

## Optional Accessories for Attenuator Connectors

Set type	Set included
MCX set	5 x MCX jacks + 1 x MCX coaxial lead
MMCX set	5 x MMCX jacks + 1 x MMCX coaxial lead
LCX set	1 x LCX coaxial lead
MCX dupont line set	1 x MCX dupont line + pin header
MMCX dupont line set	1 x MMCX dupont line + pin header
MCX IC clip set	1 x MCX dupont line + 1 pair of IC clip
MMCX IC clip set	1 x MMCX dupont line + 1 pair of IC clip
MMCX five-hole connector set	1 x MMCX five-hole connector + pin header
RS-485 Data converter set	1 x RS-485 Data converter + power adapter

## Applications

- \* Design of motor drive, power converter, electronic ballast
- \* Design of GaN, SiC, IGBT Half/Full bridge devices
- \* Design of inverter, UPS and switching power supply
- \* Safety test for high voltage, high bandwidth applications
- \* Power device evaluation
- \* Current shunt measurements
- \* EMI & ESD troubleshooting
- \* Floating measurements



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