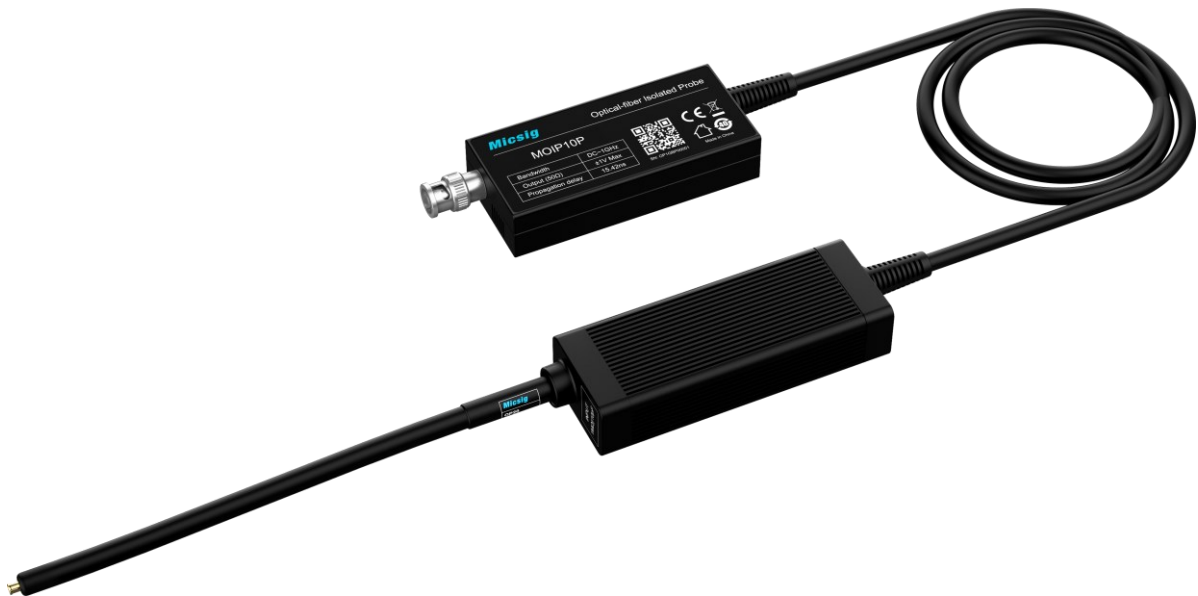


SigOFIT™

Optical-fiber Isolated Probe

Datasheet



Version: V2.3

With Micsig's exclusive SigOFIT™ optical isolation technology, the SigOFIT probe delivers 180dB CMRR at DC, 128dB at 100MHz, up to 108dB at 1GHz, able to test differential mode signals from $\pm 0.1V$ to $\pm 5000V$ when using with attenuators, present true signal you've never seen. It's the most ideal method for isolated probe technology.

Benefits of SigOFIT Probes

The SigOFIT probe is powered over laser, realized complete galvanic isolation between the probe and the DUT.

- Up to 1 GHz bandwidth
- 180dB CMRR at DC
- Over 108dB CMRR at 1GHz
- 85kVpk Common mode voltage range
- Up to $\pm 5000V$ differential input voltage range
- 1% DC gain accuracy
- Auto calibration in 1 second
- Support all BNC-type oscilloscopes

Present True Signal

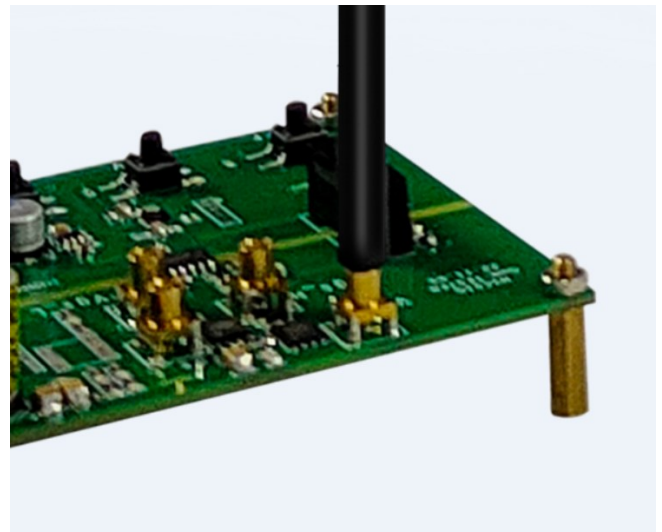


▲ Vgs signal at SiC conduction moment

Best Probe for GaN and SiC

Third-Gen Semiconductor device like SiC and GaN can switch high voltages in a few nanoseconds, containing very high-energy high-frequency harmonics.

SigOFIT probe perfectly suppress oscillation caused by high-frequency common-mode noise by employing high-quality coaxial attenuating tips and industry standard MCX connectors, unveils real signal for every engineers.



10X/20X/50X/500X/1000X/2000X/5000X

Key Applications

- Design of motor drive, power converter
- Design of GaN, SiC, Half/Full bridge devices
- Design of inverter, UPS and switching power supply
- High voltage high bandwidth safety test
- Power device evaluation
- Current shunt measurements
- EMI & ESD troubleshooting
- Floating measurements




Technical Specifications

Model & Ordering Name	MOIP01P	MOIP02P	MOIP03P	MOIP05P	MOIP08P	MOIP10P
Bandwidth	100MHz	200 MHz	350 MHz	500 MHz	800 MHz	1 GHz
Rise time	≤3.5ns	≤1.75n	≤1ns	≤700ps	≤438ps	≤350ps
CMRR	DC: 180dB 100MHz: 128dB	DC: 180dB 200MHz: 122dB	DC: 180dB 350MHz: 118dB	DC: 180dB 500MHz: 114dB	DC: 180dB 800MHz: 110dB	DC: 180dB 1GHz: 108dB
Output Voltage Range	±2.5V	±2.5V	±1.25V	±500mV	±500mV	±500mV
Noise	<1.46mVrms			<450μVrms		
Propagation delay	15.42ns (2m fiber length)			16ns (2m fiber length)		
Power supply	DC: 9V - 12V					
DC Gain accuracy	1%					
Common mode voltage range	85kVpk					
Fiber cable length	2m (Customizable)					
Temperature	0°C to 40°C (operating), -20°C to +70°C (non-operating)					
Humidity	5% to 85% RH (non-condensing), 75% RH above 30°C, 45% RH above 40°C					
Altitude	3000 m (operating), 12,000 m (non-operating)					
Usage	Indoor Use Only					
Package size	37*11*32.5 cm					
Package GW	2.2KG					




Attenuating tips

SigOFIT model	Atten. Tip model	Attenuation ratio	Voltage range	Non-destructive voltage (Max.)	Input impedance	
MOIP01P & MOIP02P	MMCX OP10-2	10:1	±25V	1500Vpp	10MΩ 2.5pF	
	MMCX OP20-2	20:1	±50V	1500Vpp	9.47MΩ 2pF	
	MCX OP500-2	500:1	±1250V	2500Vpp	12.28MΩ 1pF	
	MCX OP1000-2	1000:1	±2500V	3000Vpp	12.28MΩ 1pF	
MOIP03P	MMCX OP20-5	20:1	±25V	1500Vpp	9.47MΩ 2pF	
	MMCX OP50-5	50:1	±62.5V	1500Vpp	9.47MΩ 2pF	
	MCX OP1000-5	1000:1	±1250V	3000Vpp	12.28MΩ 1pF	
	MCX OP2000-5	2000:1	±2500V	4800Vpp	30MΩ 1pF	
MOIP05P	MMCX OP20-5	20:1 @0dB	±10V	1500Vpp	9.47MΩ 2pF	
		2:1 @20dB	±1V			
	MMCX OP50-5	50:1 @0dB	±25V	1500Vpp	9.47MΩ 2pF	
		5:1 @20dB	±2.5V			
	MCX OP1000-5	1000:1 @0dB	±500V	2500Vpp	12.28MΩ 1pF	
		100:1 @20dB	±50V			
	MCX OP2000-5	2000:1 @0dB	±1000V	3000Vpp	12.28MΩ 1pF	
		200:1 @20dB	±100V			
	MCX OP5000-5	5000:1 @0dB	±2500V	4800Vpp	30MΩ 1pF	
		500:1 @20dB	±250V			
	MOIP08P & MOIP10P	MMCX OP20-1 G	20:1 @0dB	±10V	1500Vpp	9.47MΩ 2pF
			2:1 @20dB	±1V		
MMCX OP50-1 G		50:1 @0dB	±25V	1500Vpp	9.47MΩ 2pF	
		5:1 @20dB	±2.5V			
MCX OP1000-1 G		1000:1 @0dB	±500V	2500Vpp	12.28MΩ 1pF	
		100:1 @20dB	±50V			
MCX OP2000-1 G		2000:1 @0dB	±1000V	3000Vpp	12.28MΩ 1pF	
		200:1 @20dB	±100V			
MCX OP5000-1 G		5000:1 @0dB	±2500V	4800Vpp	30MΩ 1pF	
		500:1 @20dB	±250V			

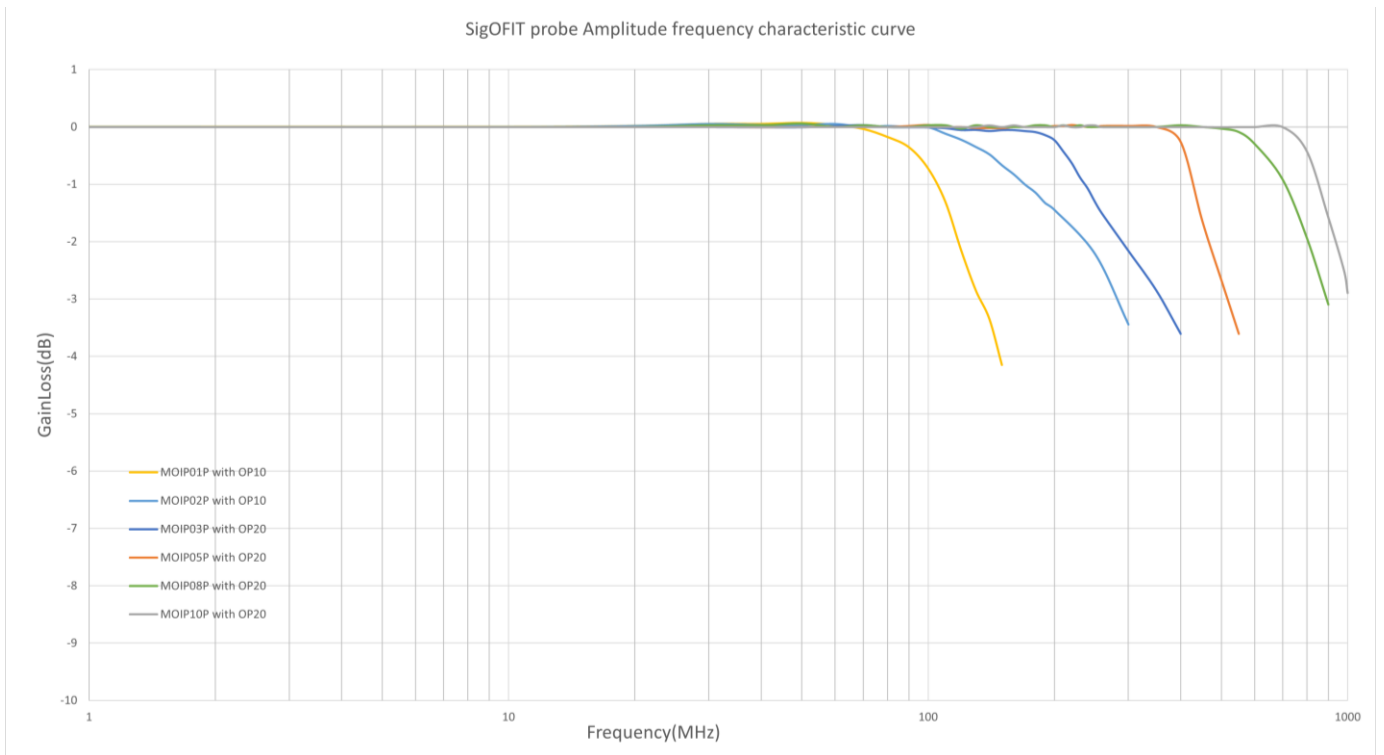
MCX adapters and coaxial lead

	Accessory name	Withstand voltage range
	MCX-adapter-2.54mm	< 300 Vpp
	MCX-adapter-5.08mm	< 3000 Vpp
	MCX coaxial lead	< 3000 Vpp

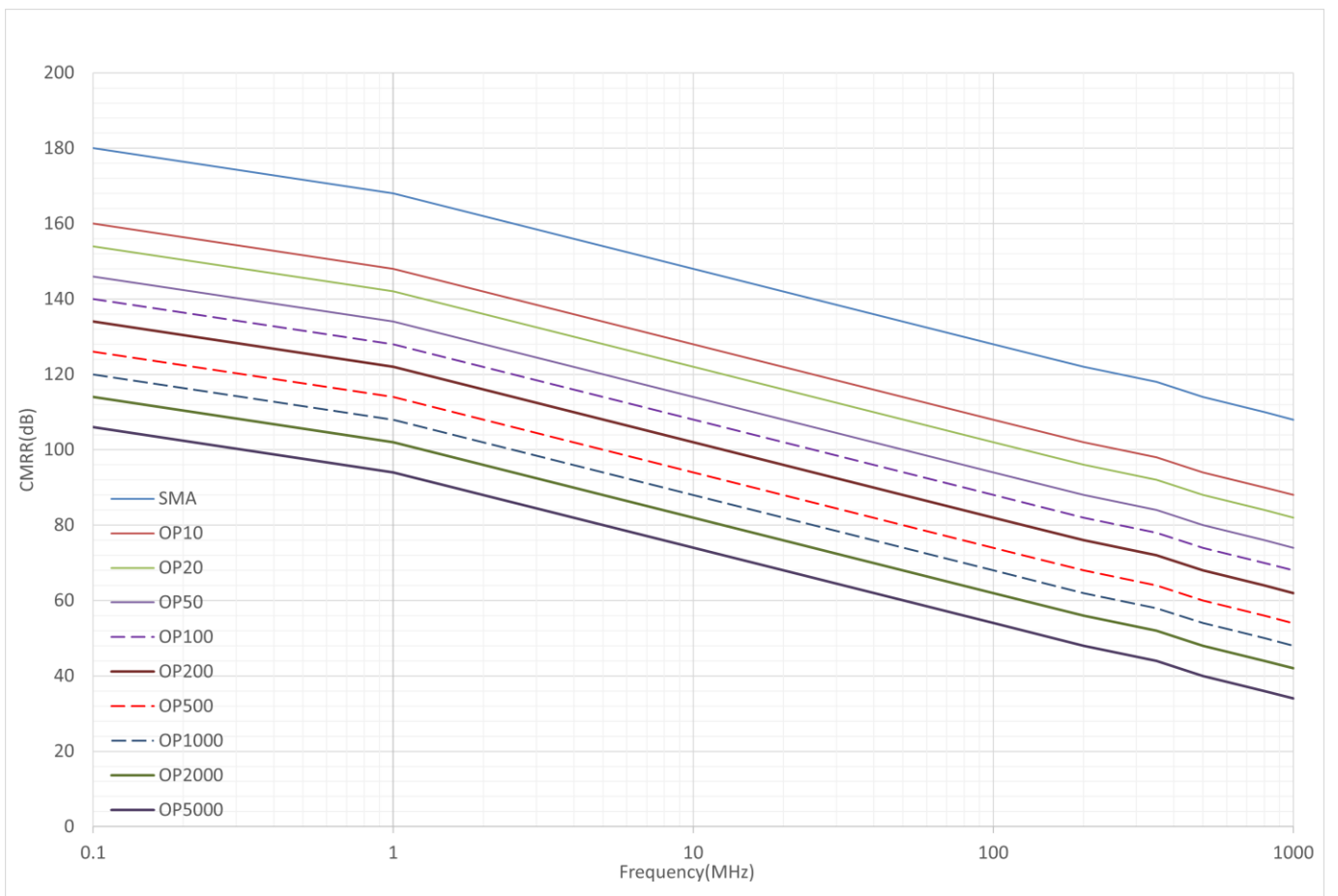
Mechanical characteristics

	Characteristics	Parameters
	Optical-Electrical (O-E) converter size	9.8 x 4.5 x 2.1 cm
	Electrical-Optical (E-O) converter size	11 x 4 x 2.3 cm
	Optical cable length	2m

Amplitude frequency characteristic curve



Attenuating tip CMRR curve



Ordering Information

Models

MOIP01P	SigOFIT 100MHz, Optical-fiber Isolated Probe, 2-meter fiber cable
MOIP02P	SigOFIT 200MHz, Optical-fiber Isolated Probe, 2-meter fiber cable
MOIP03P	SigOFIT 350MHz, Optical-fiber Isolated Probe, 2-meter fiber cable
MOIP05P	SigOFIT 500MHz, Optical-fiber Isolated Probe, 2-meter fiber cable
MOIP08P	SigOFIT 800MHz, Optical-fiber Isolated Probe, 2-meter fiber cable
MOIP10P	SigOFIT 1GHz, Optical-fiber Isolated Probe, 2-meter fiber cable

Standard accessories

MCX connector (2.54mm) *5	Connecting SigOFIT and the circuit under test
MCX connector (5.08mm) *5	Connecting SigOFIT and the circuit under test
MCX coaxial cable *1	Connecting SigOFIT and the circuit under test
Carrying Case *1	Suitcase with EVA foam
Probe Mount *1	Bipod mount to support E-O converter
DC power supply *1	12V 3A, To power the O-E Converter
Attenuating tip(s)	Configured as per specific model
Quick user guide *1	
Calibration Certificate *1	
Packing list *1	

Optional accessories

OP10-x	Attenuating tip of 10X
OP20-x	Attenuating tip of 20X
OP50-x	Attenuating tip of 50X
OP100-x	Attenuating tip of 100X
OP200-x	Attenuating tip of 200X
OP500-x	Attenuating tip of 500X
OP1000-x	Attenuating tip of 1000X
OP2000-x	Attenuating tip of 2000X
OP5000-x	Attenuating tip of 5000X

Remarks:

OPXX-* is attenuator tip, XX refers attenuation ratio, * refers bandwidth.

i.e, OP10-2 is an attenuator tip with 10X, bandwidth of 200MHz.

Refer to following list to choose applicable attenuating tip:

Model No.	Standard Tip(s)	Optional Tip(s)
MOIP01P	OP10-2	OP20-2 OP500-2 OP1000-2 *More on request
MOIP02P		
MOIP03P	OP20-5 OP1000-5	OP50-5 OP2000-5 *More on request
MOIP05P	OP50-5 OP2000-5	OP10-5 OP1000-5 OP5000-5 *More on request
MOIP08P	OP50-1G OP2000-1G	OP10-1G OP1000-1G OP5000-1G *More on request
MOIP10P		

Supported oscilloscope

Any oscilloscope with standard BNC interface and 50Ω impedance.

Service options

Optical-fiber Isolated Probe main unit warranty for **1 year** (extendable with extra charge).

The SigOFIT probe contains high-quality components and should be treated with care, **Damage to the fiber optic cable is NOT covered by the warranty.**

Standard accessories are NOT covered in main unit warranty.

Micsig provides one-on-one exclusive technical support service.

During the warranty period, Micsig will be responsible for providing free maintenance for any malfunctions caused by quality issues within the normal use of the product that have not been disassembled or repaired.

The warranty will be invalid in the following cases, but repair services can be provided, free of labor costs, and only parts fees will be charged:

- a. Any damage to accessories caused by improper use, maintenance, or storage by consumers.
- b. Damage caused by force majeure factors, such as natural disasters.

Micsig will refuse to provide repair services or provide paid repair services in the following situations:

- a. Unauthorized dismantling, such as changing wires, dismantling internal components, etc.
- b. No sales voucher or the content of the sales voucher does not match the product.

* Micsig reserves the right of final interpretation for the content hereinabove;

* It is subject to update without prior notice;

* Please contact local distributor for any inquiry or send us email directly.