

SigOFIT™ Optical-fiber Isolated Probe MOIP Series Datasheet

- ▶ Bandwidth: 100MHz-1GHz
- ▶ Differential Voltage Range: $\pm 6250V$
- ▶ Common Mode Voltage: 85kVpk
- ▶ CMRR: up to 180dB
- ▶ DC Gain Accuracy: 1%
- ▶ Interface: Universal BNC



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Micsig Website

Technical Specifications

Model & Ordering Name	MOIP100P	MOIP200P	MOIP350P	MOIP500P	MOIP800P	MOIP1000P
Bandwidth	100MHz	200 MHz	350 MHz	500 MHz	800 MHz	1 GHz
Rise time	≤3.5ns	≤1.75n	≤1ns	≤700ps	≤438ps	≤350ps
Output Voltage Range	±1.25V	±1.25V	±1.25V	±500mV	±500mV	±500mV
Noise	<450μVrms			<450μVrms		
Propagation delay	15.42ns (2m fiber length)			16ns (2m fiber length)		
Power supply	DC 12V					
DC Gain accuracy	1%					
Common mode voltage range	85kVpk					
Fiber cable length	2m (Customizable)					

Attenuating tips

SigOFIT model	Atten. Tip model	Adapter type	Attenuation ratio	Voltage range	Non-destructive voltage (Max.)	Input impedance
MOIP100P MOIP200P	OP20-2 (Standard)	MMCX	20:1 @0dB	±25V	1000Vpp	4.47MΩ 4pF
			2:1 @20dB	±2.5V		
	OP50-2	MMCX	50:1 @0dB	±62.5V	1000Vpp	4.19MΩ 2pF
			5:1 @20dB	±6.25V		
	OP200-2	MCX	200:1 @0dB	±250V	2500Vpp	9.03MΩ 2pF
			20:1 @20dB	±25V		
	OP1000-2	MCX	1000:1 @0dB	±1250V	2500Vpp	20.94MΩ 1pF
100:1 @20dB			±125V			
OP2000-2	MCX	2000:1 @0dB	±2500V	2500Vpp	20.52MΩ 1pF	
		200:1 @20dB	±250V			
OP5000-2	LCX	5000:1 @0dB	±6250V	8000Vpp	40.82MΩ 2.4pF	
		500:1 @20dB	±625V			
MOIP350P	OP20-3 (Standard)	MMCX	20:1 @0dB	±25V	1000Vpp	4.47MΩ 4pF
			2:1 @20dB	±2.5V		
	OP50-3	MMCX	50:1 @0dB	±62.5V	1000Vpp	4.19MΩ 2pF
			5:1 @20dB	±6.25V		
	OP200-3	MCX	200:1 @0dB	±250V	2500Vpp	9.03MΩ 2pF
			20:1 @20dB	±25V		
	OP1000-3 (Standard)	MCX	1000:1 @0dB	±1250V	2500Vpp	20.94MΩ 1pF
100:1 @20dB			±125V			
OP2000-3	MCX	2000:1 @0dB	±2500V	2500Vpp	20.52MΩ 1pF	
		200:1 @20dB	±250V			
OP5000-3	LCX	5000:1 @0dB	±6250V	8000Vpp	40.82MΩ 2.4pF	
		500:1 @20dB	±625V			
MOIP500P	OP20-5	MMCX	20:1 @0dB	±10V	1000Vpp	4.47MΩ 4pF
			2:1 @20dB	±1V		
	OP50-5 (Standard)	MMCX	50:1 @0dB	±25V	1000Vpp	4.19MΩ 2pF
			5:1 @20dB	±2.5V		
	OP100-5	MMCX	100:1 @0dB	±50V	1000Vpp	4.10MΩ 2pF
			10:1 @20dB	±5V		
	OP2000-5 (Standard)	MCX	2000:1 @0dB	±1000V	2500Vpp	20.52MΩ 1pF
200:1 @20dB			±100V			
OP5000-5	MCX	5000:1 @0dB	±2500V	3600Vpp	40.92MΩ 1pF	
		500:1 @20dB	±250V			
OP10000-5	LCX	10000:1 @0dB	±5000V	8000Vpp	40.82MΩ 2.4pF	
		1000:1 @20dB	±500V			



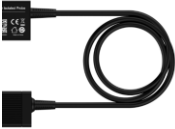
MOIP800P MOIP1000P	OP20-1G	MMCX	20:1 @0dB	±10V	1000Vpp	4.47MΩ 4pF
			2:1 @20dB	±1V		
	OP50-1G (Standard)	MMCX	50:1 @0dB	±25V	1000Vpp	4.19MΩ 2pF
			5:1 @20dB	±2.5V		
	OP100-1G	MMCX	100:1 @0dB	±50V	1000Vpp	4.10MΩ 2pF
			10:1 @20dB	±5V		
	OP2000-1G (Standard)	MCX	2000:1 @0dB	±1000V	2500Vpp	20.52MΩ 1pF
			200:1 @20dB	±100V		
	OP5000-1G	MCX	5000:1 @0dB	±2500V	3600Vpp	40.92MΩ 1pF
			500:1 @20dB	±250V		
OP10000-1G	LCX	10000:1 @0dB	±5000V	8000Vpp	40.82MΩ 2.4pF	
		1000:1 @20dB	±500V			

*According to the adapter type of the attenuator, for the MMCX type, it is standardly equipped with 5 MMCX adapters and 1 MMCX coaxial lead; for the MCX type, it is standardly equipped with 5 MCX adapters and 1 MCX coaxial lead; for the LCX type, it is standardly equipped with 1 LCX coaxial lead

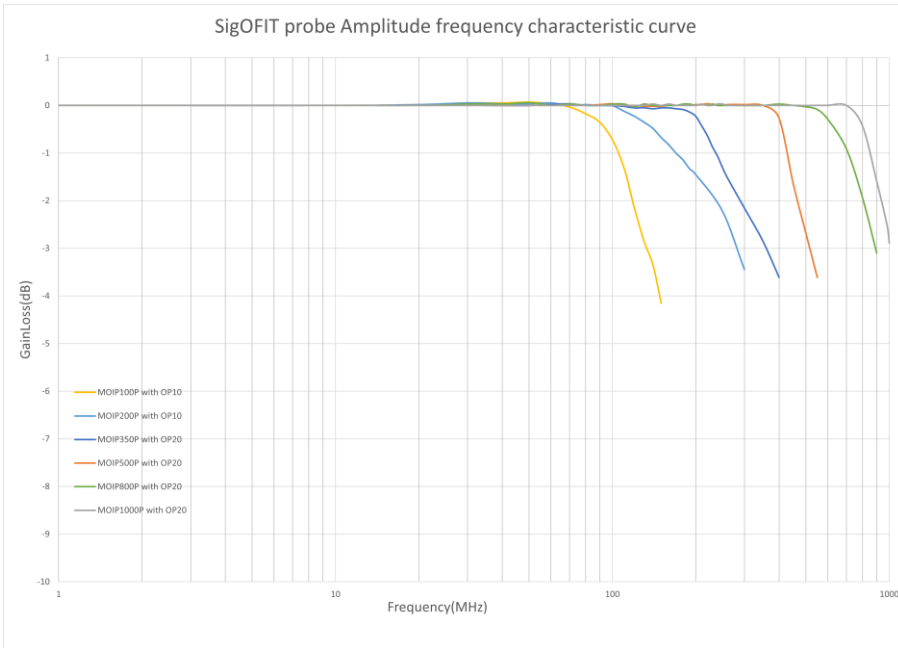
Adapters and coaxial lead

Accessory name	Withstand voltage range
MMCX-adapter	< 300 Vpp
MCX-adapter	< 3000 Vpp
MCX five-hole connector	< 3000 Vpp
MMCX coaxial lead	< 300 Vpp
MCX coaxial lead	< 3000 Vpp
LCX coaxial lead	< 8000 Vpp

Mechanical characteristics

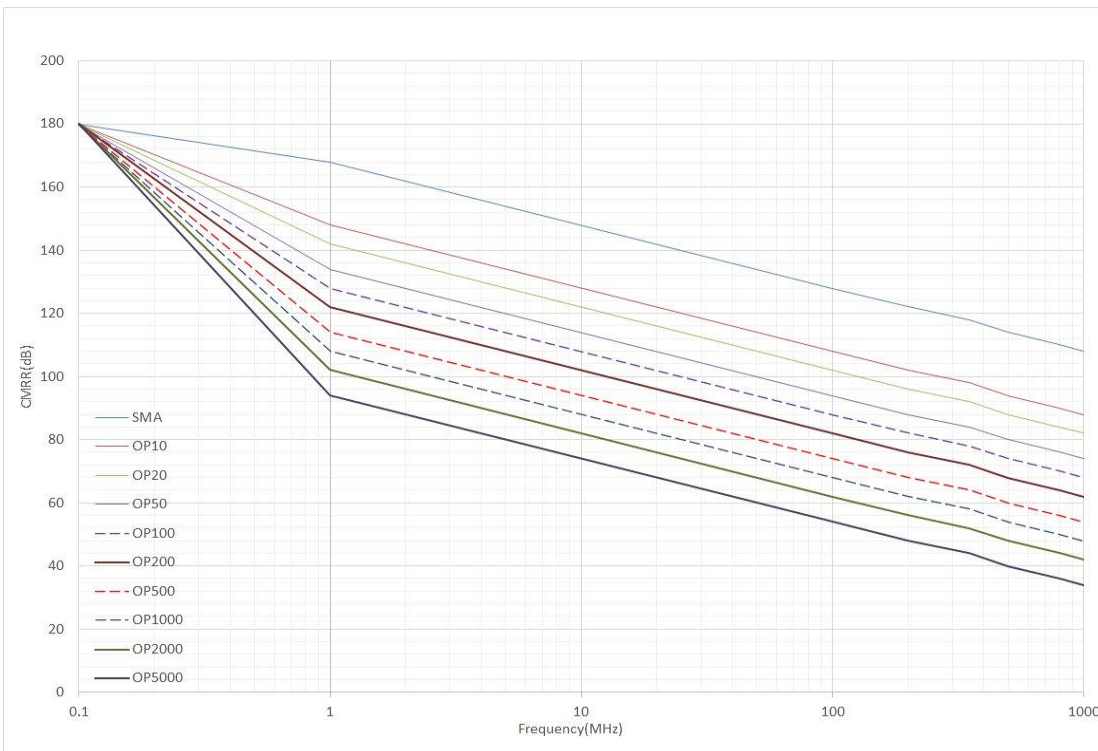
	Characteristics	Parameters
	Optical-Electrical (O-E) converter size	9.8 x 4.5 x 2.1 cm
	Electrical-Optical (E-O) converter size	11 x 4 x 2.3 cm
	Optical cable length	2m

Amplitude frequency characteristic curve



▲ Amplitude-frequency characteristics of different SigOFIT probes

Attenuating tip CMRR curve



▲ Common mode rejection capabilities of different attenuators (0dB) at various frequencies.

Ordering Information

Accessories	MOIP100P	MOIP200P	MOIP350P	MOIP500P	MOIP800P	MOIP1000P
20X Attenuator OP20-2	Standard 1 pc	Standard 1 pc	X	X	X	X
20X Attenuator OP20-3	X	X	Standard 1 pc	X	X	X
1000X Attenuator OP1000-3	X	X	Standard 1 pc	X	X	X
50X Attenuator OP50-5	X	X	X	Standard 1 pc	X	X
2000X Attenuator OP2000-5	X	X	X	Standard 1 pc	X	X
50X Attenuator OP50-1G	X	X	X	X	Standard 1 pc	Standard 1 pc
2000X Attenuator OP2000-1G	X	X	X	X	Standard 1 pc	Standard 1 pc
MMCX-adapter	Standard 5 pcs	Standard 5 pcs	Standard 5 pcs	Standard 5 pcs	Standard 5 pcs	Standard 5 pcs
MMCX coaxial lead	Standard 1 pc	Standard 1 pc	Standard 1 pc	Standard 1 pc	Standard 1 pc	Standard 1 pc
MCX-adapter	Optional	Optional	Standard 5 pcs	Standard 5 pcs	Standard 5 pcs	Standard 5 pcs
MCX coaxial lead	Optional	Optional	Standard 1 pc	Standard 1 pc	Standard 1 pc	Standard 1 pc
LCX coaxial lead	Optional					
MCX five-hole connector	Optional					
IC clip	Optional					
MCX extension cable	Optional					
RS-485 Data converter	Optional					
Carrying Case	Standard					
Probe Mount	Standard					
USB type-C	Standard					
Power adapter	Standard					
Quick user guide	Standard					
Calibration Certificate	Standard					
Packing list	Standard					
Other Attenuating tip(s)	Please refer to the Attenuating tip configuration table for optional choice					

Attenuator

OP20-x	Attenuator of 20X
OP50-x	Attenuator of 50X
OP100-x	Attenuator of 100X
OP200-x	Attenuator of 200X
OP1000-x	Attenuator of 1000X
OP2000-x	Attenuator of 2000X
OP5000-x	Attenuator of 5000X
OP10000-x	Attenuator of 10000X

Remarks:

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

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

Refer to following Attenuating tip configuration table choose applicable attenuating tip:

Model No.	Standard Tip(s)	Optional Tip(s)
MOIP100P	OP20-2	OP20-2, OP50-2, OP200-2
MOIP200P		OP1000-2, OP2000-2, OP5000-2
MOIP350P	OP20-3 OP1000-3	OP20-3, OP50-3, OP200-3 OP1000-3, OP2000-3, OP5000-3
MOIP500P	OP50-5 OP2000-5	OP20-5, OP50-5, OP100-5 OP2000-5, OP5000-5, OP10000-5
MOIP800P	OP50-1G OP2000-1G	OP20-1G, OP50-1G, OP100-1G
MOIP1000P		OP2000-1G, OP5000-1G, OP10000-1G

Supported oscilloscope

Any oscilloscope with standard BNC interface and 50Ω impedance.

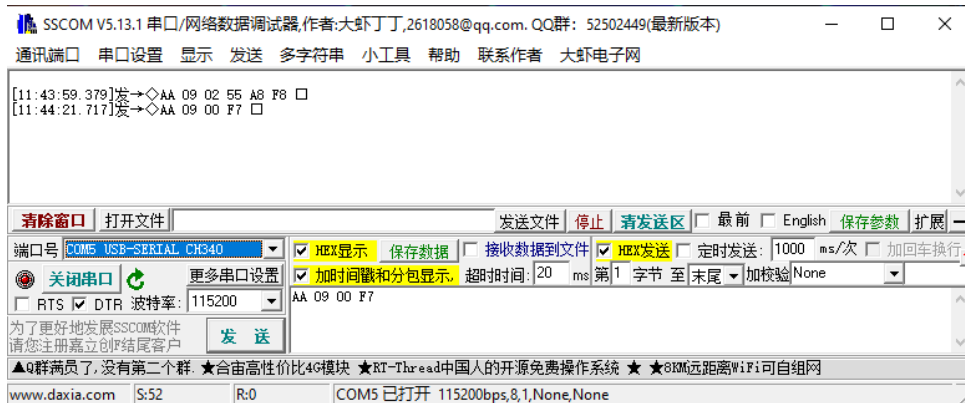
Introduction to other optional attenuator connectors

The MOIP series of optical isolation probes from Micsig support the use of multiple connectors to connect to the circuit under test. The following table shows the introduction of various connectors. Different connectors may affect the accuracy of the test results. Please try to select the standard connector for connection. If you need an optional connector, please consult the customer service for purchase.

Connectors	Adapter type	Note
Adapter	MMCX MCX	Solder the adapter on the circuit, and then insert the attenuator directly into the adapter
Coaxial lead	MMCX MCX LCX	Solder the coaxial extension line to the test point, and then connect the attenuator.
Five-hole connector + Pin header (optional)	MCX	Solder the pin header on the circuit. Then, after the five-hole connector is connected to the attenuator, insert it into the pin header.
Extension cable + Pin header (optional)	MMCX MCX	Solder the pin header on the circuit. Then, after the extension line is connected to the attenuator, insert it into the pin header.
Extension cable + IC clip (optional)	MMCX MCX	The extension line is connected to the IC clip, and then to the attenuator. Just clamp the signal test point with the IC clip.

Remote Control

The MOIP series of optical isolation probes from Micsig supports the combination with the RS-485 data converter (optional) to remotely send serial port commands to achieve self-calibration and 0dB/20dB gear switching functions. Taking SSCOM as an example, select the corresponding port number, turn on HEX sending, and select the baud rate as 115200.



SSCOM sends serial port commands

Serial port command list:

Serial port command	Execute command
AA 09 02 55 A8 F8	0dB/20dB gear switching
AA 09 00 F7	Self-calibration

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.

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