

ODP6000B Series Optical Isolated Voltage Probe



Specifications

EN01C



CALTRON PTE LTD

SIGLENT TECHNOLOGIES CO.,LTD

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Introduction

ODP6000B series is the latest optical isolated voltage probe with remarkably high CMRR. The CMRR of traditional differential probe decreases fast in high-frequency range, as a result, measuring the small voltage signal waveform (e.g., the driving voltage when measuring the upper MOSFET of the half-bridge circuit) under high CM interference voltage accurately become an extremely hard task. ODP6000B series applies optical isolation technologies and gains remarkably high CMRR in all working bandwidth, helping our customers to deal with these kinds of challenging measurement with low cost.

Product Characteristics:

- 2 chargeable batteries that can be replaced to keep the probe work continuously.
- Can be calibrated and zeroed online without disconnecting from the tested equipment.
- Multiple attenuators available, able to meet the measurement requirement of different voltage.
- Extremely high CMRR.
- Bandwidth over 1 GHz.
- Isolation voltage over 60 kV.
- High accuracy and stability in wide temperature range.
- Smaller size.

Application

ODP6000B series can be widely applied in the R&D, debugging or maintenance of switching power supply, motor driver, new energy inverter, converter, LED power supply, household appliances and other electrical power devices.

- Floating signal test.
- Measure the gate voltage drive of power devices like Si/SiC/GaN.
- Small signal measurement of differential mode under high common mode voltage.

Electric Specifications

Model	ODP6050B	ODP6100B
Bandwidth (-3 dB)	500 MHz	1 GHz
Rise time	≤0.7 ns	≤0.4 ns
Terminal load	50 Ω	50 Ω
Output voltage range	±0.5 V	±0.5 V
Typical values of host noise (Vrms)	1.5 mV	1.5 mV
DC accuracy	≤ ±1%	
Isolation voltage (DC + Peak AC)	±60 kV	
Host delay	Around 14 ns	
CMRR typical values (using standard attenuators)	DC-10 MHz: 160 dB	
	10 MHz-100 MHz: 110 dB	
	100 MHz-300 MHz: 100 dB	
	300 MHz-500 MHz: 90 dB	
	500 MHz-800 MHz: 80 dB	
	800 MHz-1000 MHz: 70 dB	
Power supply method	Front end: battery powered, with a working time of approximately 8 hours and a standby time of approximately 30 days	
	Rear end: USB 5 V/2 A	
Auto calibration	Yes	
Optical fiber length	Around 2 m	

Attenuator Specifications

Probe Model	Attenuator Model	Connector Type	Attenuation Ratio	Measurement Range	Input Impedance
ODP6050B ODP6100B	CK-AT5X-2	SSMB	5:1	±2.5 Vpk	1 MΩ 28 pF
	CK-AT10X-2	SSMB	10:1	±5 Vpk	1 MΩ 6 pF
	CK-AT20X-2	SSMB	20:1	±10 Vpk	5 MΩ 6 pF
	CK-AT50X-2	SSMB	50:1	±25 Vpk	10 MΩ 4 pF
	CK-AT100X-2	SSMB	100:1	±50 Vpk	10 MΩ 2 pF
	CK-AT200X-2	SSMB	200:1	±100 Vpk	10 MΩ 2 pF
	CK-AT500X-2	2.54 mm socket	500:1	±250 Vpk	10 MΩ 2 pF
	CK-AT1000X-2	2.54 mm socket	1000:1	±500 Vpk	20 MΩ 2 pF
	CK-AT2000X-2	5.08 mm socket	2000:1	±1000 Vpk	20 MΩ 2 pF
	CK-AT5000X-2	5.08 mm socket	5000:1	±2500 Vpk	40 MΩ 2 pF
	CK-AT10000X-2	5.08 mm socket	10000:1	±5000 Vpk	40 MΩ 2 pF

PS: ODP6050B/ODP6100B with standard CK-AT50X-2 / CK-AT1000X-2 / CK-AT2000X-2 / CK-AT5000X-2;
If you need other models of attenuators, please purchase them independently.

Optional Attenuator Packing List

Connector Type	SSMB	2.54 mm Socket	5.08 mm Socket
CK-201 (2.54_2p)	-	5	-
CK-202 (5.08_2p)	-	-	5

Mechanical Specifications

Model		Parameter
Probe dimensions	Front-end E/O transmitter	Around 102*45*33 mm
	Rear-end O/E receiver	Around 106*49*23 mm
Attenuator length		Around 200 mm
Optical fiber length		Around 2 m
Probe weight		Around 400 g

Packing List

Name	ODP6050B	ODP6100B
Voltage probe	1	1
50X attenuator (CK-AT50X-2)	1	1
1000X attenuator (CK-AT1000X-2)	1	1
2000X attenuator (CK-AT2000X-2)	1	1
5000X attenuator (CK-AT5000X-2)	1	1
SSMB male socket to DuPont cable connector (CK-321)	2	2
SSMB male socket (CK-23)	10	10
2.54 mm socket (CK-201)	5	5
5.08 mm socket (CK-202)	5	5
USB power supply cable TYPE-C 1.5 m (CK-314A)	1	1
Power supply adaptor 5 V/2 A (CK-605)	2	2
OE transmitter support frame (CK-690A)	1	1
BNC male to SSMB male (CK-25)	1	1
Input extension cable (CK-322)	3	3
Output extension cable (CK-325)	1	1
Battery charger set (CK-691)	1	1
Instruction manual	1	1
Warranty card	1	1
Test report	1	1

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