

Product Datasheet - Technical Specifications



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Micsig

Micsig

High Voltage Differential Probe

MDP Series

Originated from Micsig's cutting-edge SigOFIT™ technology, the MDP series high-voltage differential probe has very low noise floor, excellent amplitude-frequency characteristics and industry-leading common mode rejection capability, allow users to test high-frequency and high-voltage signals with ease.

200MHz

Bandwidth

±3000V

Max. Voltage

<0.5dB

Amplitude
Fluctuation

USB-C

Power Supply

5MHz

Bandwidth
Limit

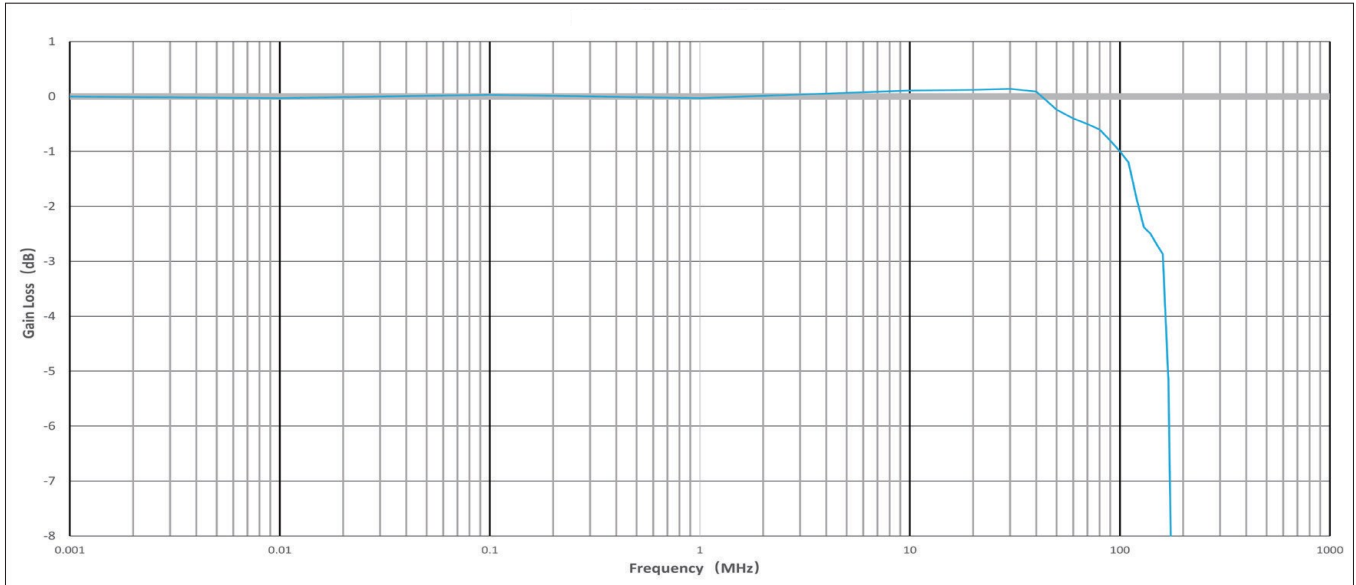
BNC

Interface

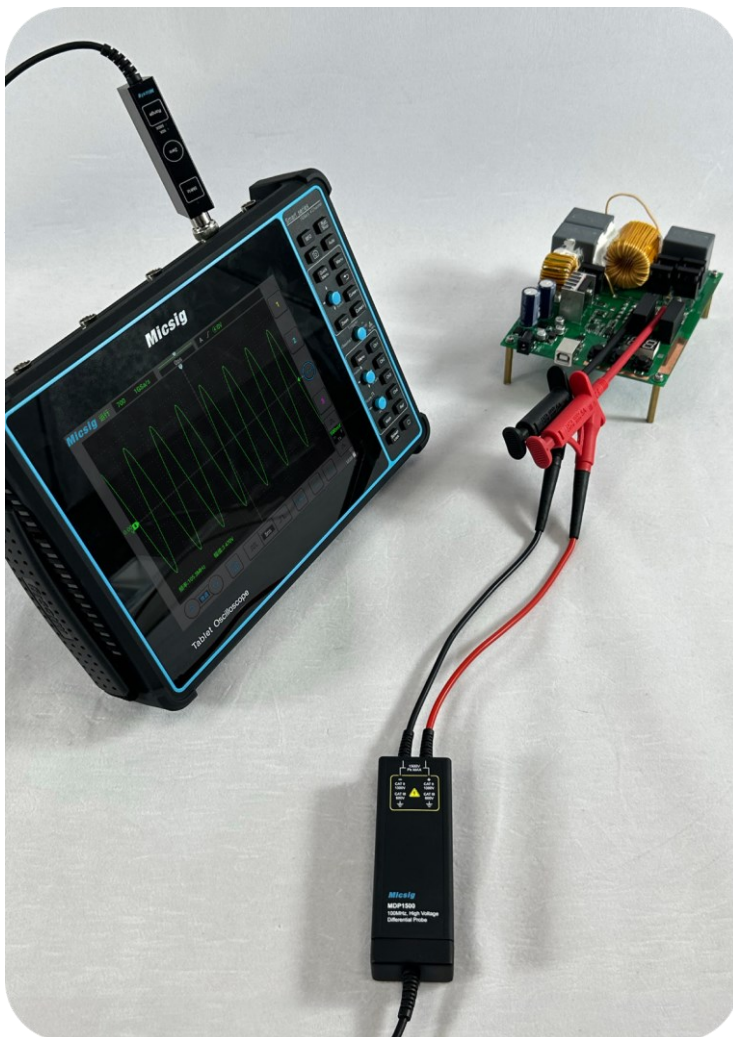


Key Features

The MDP series probe has excellent bandwidth flatness, amplitude fluctuation less than 0.5dB within its half bandwidth range, even in high frequency bands can also maintain high accuracy.



▲ MDP1500 (50X) Amplitude-frequency Characteristic Curve

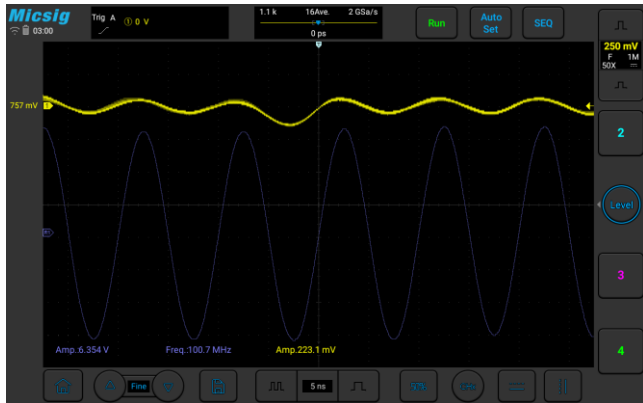


Features

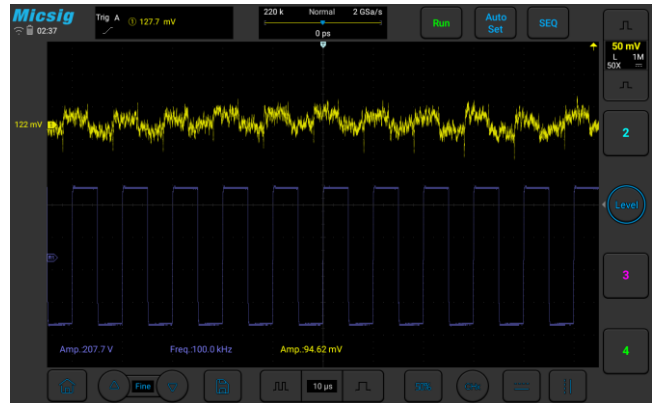
- **5MHz Bandwidth Limit**
Effectively eliminates high-frequency noise when measuring FET switching frequency in most switching power supplies.
- **Quick Zero**
Short-circuit the test leads, press Zero button, the probe can be zeroed quickly.
- **Dual Range Selection**
Improves signal-to-noise ratio, meet more test requirements.
- **BNC Interface**
Standard BNC interface, work with any oscilloscope.
- **USB Power Supply**
Powered directly from oscilloscope USB port.
- **Over-Range Alarm**
LED flashes, buzzer "beeps" rapidly, indicating an over-range alert.
- **Compact & Exquisite**
Much smaller than other differential probes.

High Accuracy, High CMRR

High input impedance and low input capacitance, minimized load effect, greatly improved the accuracy of the differential signal. High common mode rejection capability, able to meet floating measurements of high common mode voltage at high frequencies.



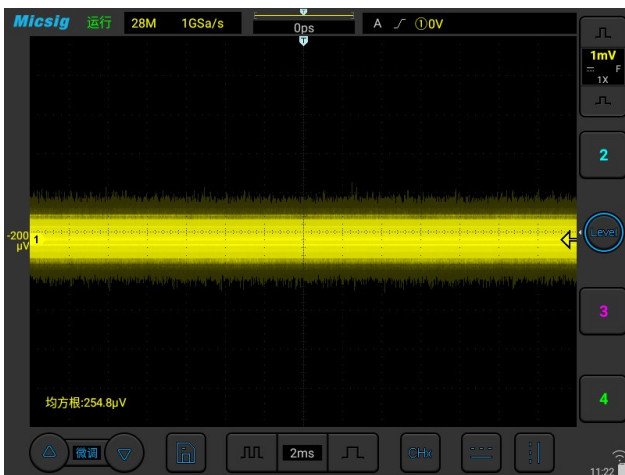
CH1: @ 100MHz, 6.354V, output common mode signal amplitude 223.1mV, CMRR > -26dB



CH1: @ 100KHz, 207.7V, output common mode signal amplitude 94.62mV, CMRR > -60dB

Low Noise

Short circuit the input ends, connect to CH1. Attenuation ratio at 1X, vertical scale at 1mV/div, time base at 2ms, input impedance is 1M Ω , observe the noise floor:



* Noise at full bandwidth: 254.8 μ Vrms

Applications

- ◆ Floating measurements
- ◆ High voltage isolation measurements
- ◆ Switching power supply design
- ◆ Power converter design
- ◆ Inverter, UPS power supply
- ◆ Welding, electroplating power supply
- ◆ Electronic ballast design
- ◆ Motor drive design
- ◆ Induction heating, induction cooker
- ◆ CRT display design
- ◆ Low-voltage electrical appliances
- ◆ Electronic power and electric drive experiments



Specifications

Model	MDP700	MDP701	MDP702	MDP1500	MDP1501	MDP1502	MDP3000	MDP3001	MDP3002
Bandwidth	100MHz	150MHz	200MHz	100MHz	150MHz	200MHz	100MHz	150MHz	200MHz
Rise time	≤3.5ns	≤2.33ns	≤1.75ns	≤3.5ns	≤2.33ns	≤1.75ns	≤3.5ns	≤2.33ns	≤1.75ns
Attenuation	20X / 200X			50X / 500X			100X / 1000X		
Accuracy	±2%			±2%			±2%		
Max. Differential Voltage (DC+AC PK)	70V (20X) 700V (200X)			150V (50X) 1500V (500X)			300V (100X) 3000V (1000X)		
Max. Common Mode Input Voltage	CAT I 600V CAT II 450V			CAT II 1000V CAT III 600V			CAT III 1000V		
Noise	Full Bandwidth: 20X: ≤ 0.9mVrms 200X: ≤ 0.4mVrms 5MHz Limit: 20X: ≤ 0.4mVrms 200X: ≤ 0.35mVrms			Full Bandwidth: 50X: ≤ 0.9mVrms 500X: ≤ 0.4mVrms 5MHz Limit: 50X: ≤ 0.4mVrms 500X: ≤ 0.35mVrms			Full Bandwidth: 100X: ≤ 0.9mVrms 1000X: ≤ 0.4mVrms 5MHz Limit: 100X: ≤ 0.4mVrms 1000X: ≤ 0.35mVrms		
CMRR	DC: >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB			DC: >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB			DC: >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB		
Delay	11.99ns at 20X 12.27ns at 200X			11.99ns at 50X 12.27ns at 500X			11.99ns at 100X 12.27ns at 1000X		
Input impedance	16MΩ / 1.5pF(differential) 8MΩ / 3pF(each input to ground)			16MΩ / 1.5pF(differential) 8MΩ / 3pF(each input to ground)			20MΩ / 1.5pF(differential) 10MΩ / 3pF(each input to ground)		
Output voltage	≤3V								
Power supply	2W, USB Type-C								
Overrange	LED flashes, Buzzer beeps								
Dimensions	Control module: L*W*H: 91 *33 *15 /mm Signal box: L*W*H: 100 * 36 * 20 /mm								
Cable length	Approx. 8 cm (Input); Approx. 120cm (Output)								
Temperature	Operating: 0℃ ~ 40 ℃ Non-operating: -30 ℃ ~ 70 ℃								
Humidity	Operating: 5 ~ 85% RH (0℃ ~ 40 ℃) Non-operating: 5% ~ 85% RH (≤40 ℃) ; 5% ~ 45% RH (40 ℃ ~70 ℃)								

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