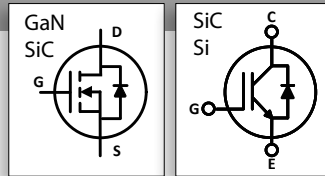


# DL-ISO High Voltage Optically Isolated Probe



## Key Features

- 1 GHz bandwidth
- Ideal for GaN and SiC devices
- 1.5% system accuracy
- 435 ps rise time
- High CMRR - 160 dB
- Flexible connectivity options
- Autozero without disconnection

## Key Applications

- Servers
- Motherboards
- Mobiles
- Lighting and building automation
- Residential inverters
- UPS
- Switch Mode Power Supplies
- Motors in household and commercial appliances

**The DL-ISO enables highest confidence in GaN and SiC device characterization with highest accuracy, best signal fidelity, and comprehensive connectivity.**

### Best Probe for GaN and SiC

With 1 GHz of bandwidth, 2500 V differential input range, and 60 kV common mode, DL-ISO probes are perfect for both GaN and SiC device characterization and system development engineers.

### Highest Accuracy

Combine DL-ISO probes with industry-leading 12-bit resolution High Definition Oscilloscopes (HDOs) to get 1.5% system accuracy, nearly twice as good as the alternate solution in the market.

### Best Signal Fidelity

During measurements, getting the most faithful representation of the signal can be elusive. DL-ISO overcomes that challenge by delivering the industry's best signal fidelity with the fastest rise time, lowest overshoot, and low DUT loading.

### Comprehensive Connectivity

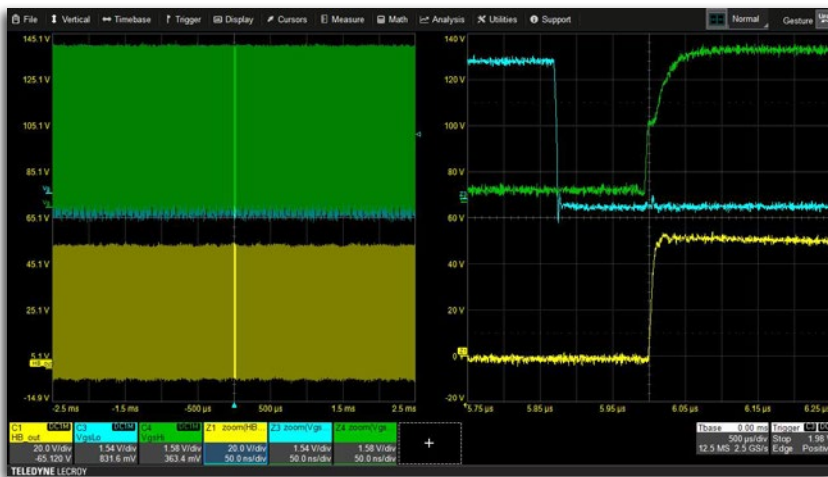
DL-ISO probes increase measurement confidence by employing high-quality coaxial attenuating tips that reject unwanted noise and terminate into test boards using industry standard MMCX connectors or high-voltage safe square pin headers.

# MOST ACCURATE GAN AND SiC CHARACTERIZATION



## Highest Accuracy

- Best system accuracy – 1.5%
- High 160 dB CMRR for superior noise rejection
- Precision Gain Calibration on 12-bit High Definition Oscilloscopes gives best results



## Best Signal Fidelity

- Most faithful representation of the signal
- Low probe loading and minimal overshoot
- Fastest rise times (435 ps) – ideal for capturing high dV/dt GaN and SiC waveforms

## Comprehensive Connectivity

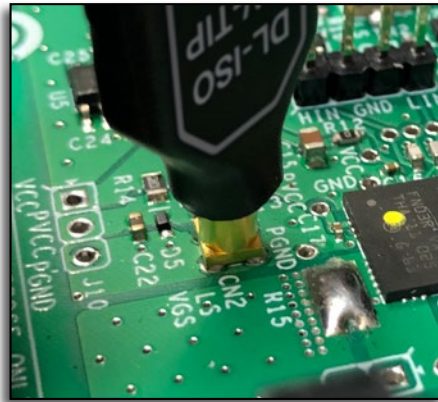
- Easily interface with test boards using industry standard MMCX connectors
- Safely connect to 1000 and 2500 V using compatible square pin headers
- Improve EMI/RF immunity and reduce stray noise pickup with high-quality coaxial leads



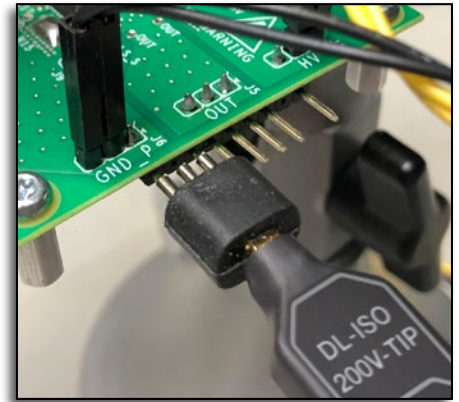
# HIGHEST CONFIDENCE FOR WIDE BANDGAP MEASUREMENTS



DL-ISO with flexible interfaces to DUTs



MMCX connector for measuring gate-drive signals



Square pin header for safe high-voltage measurement



## Flexible In-Circuit Debug

- All purpose probe for DC bus, device (Vgs & Vds), and inverter output measurements
- Large common-mode and wide differential swing to handle very large DC bus voltages
- Device-Power software automatically calculates various device losses as defined by JEDEC®

## Interested In More Power Electronic Probes?

### Lower Voltage GaN Measurement

With 60 V of common mode, 80 V of differential input range, and 1 GHz of bandwidth, DL-HCM probes provide the bandwidth and performance necessary for testing various low-power GaN systems.



### Compact, Simple, Affordable

With 150 MHz of bandwidth, the HVF0108 fits into tight spaces as well as tight budgets without sacrificing performance.



# SPECIFICATIONS AND ORDERING INFORMATION

Electrical	DL03-ISO	DL07-ISO	DL10-ISO
Bandwidth	350 MHz	700 MHz	1 GHz
Rise Time (10-90%)	1.1 ns	575 ps	435 ps
Differential Voltage Range (Pk to Pk)	2 V to 2500 V with different attenuating tips		
Common Mode Voltage Range	±60 kV (DC+Peak AC) (not for hand-held use, with adequate spacing between probe components and earth ground)		
Maximum Input Voltage to Earth	±60 kV (DC+Peak AC) (not for hand-held use, with adequate spacing between probe components and earth ground)		
Maximum Non-destruct Voltage (DC+Peak AC)	DL-ISO-2V-TIP: 50 V DL-ISO-40V-TIP: 250 V	DL-ISO-10V-TIP: 100 V DL-ISO-200V-TIP: 300 V	
Sensitivity	DL-ISO-2V-TIP: 20 mV/div to 250 mV/div DL-ISO-40V-TIP: 400 mV/div to 5 V/div	DL-ISO-10V-TIP: 100 mV/div to 1.3 V/div DL-ISO-200V-TIP: 2 V/div to 25 V/div	
DC Gain Accuracy	1.5% (after Precision Gain Calibration)		
DC Gain Drift	< 1 %/°C		
Offset	DL-ISO-2V-TIP: ±25 V DL-ISO-40V-TIP: ±150 V	DL-ISO-10V-TIP: ±50 V DL-ISO-200V-TIP: ±150 V	
Input Impedance	DL-ISO-2V-TIP: 200 kΩ    3.6 pF DL-ISO-40V-TIP: 1 MΩ    2.1 pF	DL-ISO-10V-TIP: 1 MΩ    2.1 pF DL-ISO-200V-TIP: 7.5 MΩ    2 pF	
Output Termination	50 Ω		
Input/Output Coupling	DC only		
Interface	ProBus		
Cable Length	3.375 m (11 feet) from probe tip to oscilloscope connection		

## Noise, Rejection, and Electromagnetic Compatibility (EMC)

Noise				CMRR						
DL-ISO-2V-TIP	1 GHz	700 MHz	350 MHz	Probe Tip	DC	1 MHz	100 MHz	200 MHz	500 MHz	1 GHz
50 mV/div	1.98 mVrms	1.78 mVrms	1.12 mVrms	DL-ISO-2V-TIP	160 dB	110 dB	90 dB	90 dB	80 dB	75 dB
100 mV/div	3.37 mVrms	3.00 mVrms	2.25 mVrms	DL-ISO-10V-TIP	160 dB	100 dB	75 dB	75 dB	65 dB	65 dB
200 mV/div	9.22 mVrms	7.12 mVrms	4.49 mVrms	DL-ISO-40V-TIP	150 dB	100 dB	70 dB	60 dB	60 dB	50 dB
				DL-ISO-200V-TIP	140 dB	95 dB	55 dB	50 dB	45 dB	35 dB

Noise scales proportional to 2 V tip voltage capability  
10 V tip noise will be 10/2 = 5x of 2 V tip

Electrostatic Discharge (ESD) Immunity	8 kV contact discharge and 10 kV air discharge per IEC61000-4-2, criteria A
Radiated RF Electromagnetic Field Immunity	Up to 25 V/m (80 MHz to 2.7 GHz) per IEC61000-4-3, criteria A when operating in standard configuration
Immunity to Conducted Disturbance Induced by RF Fields	Up to 10 V (150 kHz to 80 MHz) per IEC61000-4-6, criteria A when operating in standard configuration

## Environmental

Temperature	5°C to 40°C (operating in standard configuration), -20°C to 70°C (non-operating)
Humidity	5% to 95% RH (non-condensing), 75% RH above 30°C, 45% RH above 40°C
Altitude	Up to 3000 m (operating), 10,000 m (non-operating)
Pollution Degree	2, Indoor Use Only

## Certifications

CE Declaration of Conformity	Low Voltage Directive 2014/35/EU (IEC/EN 61010-1:2010; IEC/EN 61010-2-030:2010) EMC Directive 2014/30/EU (IEC/EN 61326-1:2013; IEC/EN 61326-2-1:2013) RoHS2 Directive 2011/65/EU (IEC/EN 63000:2018)
Laser Product certifications	IEC/EN 60825-1:2014; US 21CFR Part 1010; US 21CFR Part 1040

## Ordering Information

Product Description	Product Code
<b>High Voltage Optically Isolated Probe Models</b>	
High Voltage Optically Isolated Probe, 350 MHz Bandwidth	DL03-ISO
High Voltage Optically Isolated Probe, 700 MHz Bandwidth	DL07-ISO
High Voltage Optically Isolated Probe, 1 GHz Bandwidth	DL10-ISO
<b>Accessories (must be ordered separately)</b>	
DL-ISO 2 V MMCX Tip	DL-ISO-2V-TIP
DL-ISO 10 V MMCX Tip	DL-ISO-10V-TIP
DL-ISO 40 V MMCX Tip	DL-ISO-40V-TIP
DL-ISO 200 V MMCX Tip	DL-ISO-200V-TIP
DL-ISO MMCX to high-voltage 0.1" square pin adapter	DL-ISO-M2S
DL-ISO 1000/2500 V high-voltage 0.2" square pin Tip	Coming soon

For more information, please contact:

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[www.admess.de](http://www.admess.de)

## Customer Service

Teledyne LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year. This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge



1-800-5-LeCroy  
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