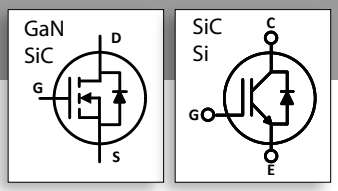
TELEDYNE LECROY
Everywhereyoulook™

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.

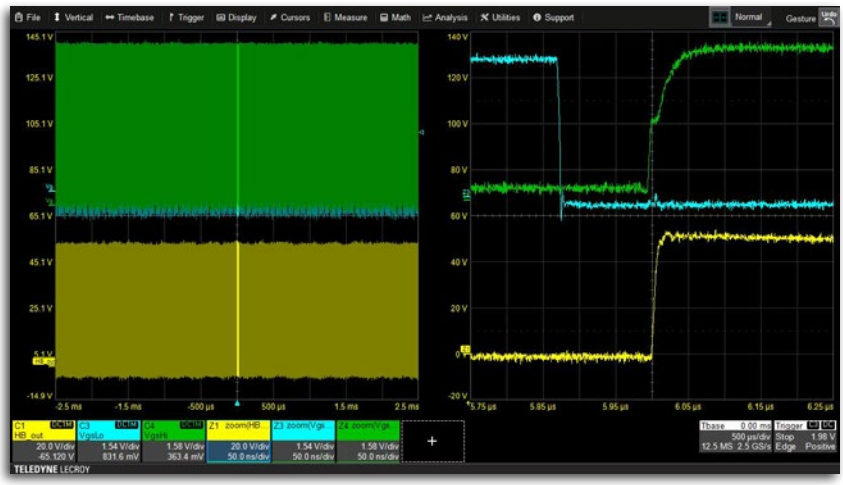
Comprehensive Connectivity

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



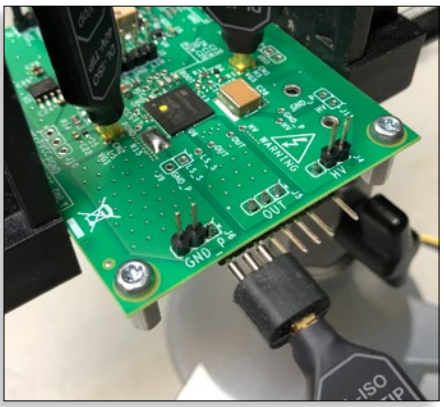
Best Signal Fidelity

- 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

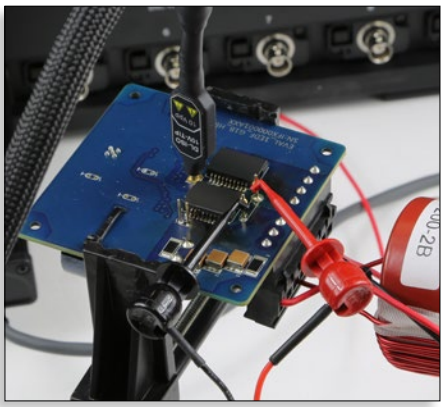
- Easily interface with test boards using industry standard MMCX connectors
- Safely connect to 1000 and 2500 V using compatible square pin headers
- Improve EMI/RF immunity and reduce stray noise pickup with high-quality coaxial leads

HIGHEST CONFIDENCE FOR WIDE BANDGAP MEASUREMENTS



DL-ISO measuring Vgs (MMCX) and Vds (header pins) signals

Optional accessories for convenience



DL-ISO connected directly to MMCX and indirectly using grabbers

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 HVFO108 fits into tight spaces as well as tight budgets without sacrificing performance.

1.800.561.8187 www.itm.com information@itm.com

SPECIFICATIONS AND ORDERING INFORMATION

Electrical

Bandwidth	**DL03-ISO:** 350 MHz	**DL07-ISO:** 700 MHz	**DL10-ISO:** 1 GHz
Rise Time (10-90%)	**DL03-ISO:** 1.1 ns	**DL07-ISO:** 575 ps	**DL10-ISO:** 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, must maintain adequate spacing between probe components & earth ground)		
Maximum Input Voltage to Earth	±60 kV (DC+Peak AC) (not for hand-held use, must maintain adequate spacing between probe components & earth ground)		
Maximum Non-destruct Voltage (DC+Peak AC)	**DL-ISO-2V-TIP:** 50 V **DL-ISO-40V-TIP:** 250 V **DL-ISO-1000V-TIP:** 1,250 V		**DL-ISO-10V-TIP:** 100 V **DL-ISO-200V-TIP:** 300 V **DL-ISO-2500V-TIP:** 3,300 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-1000V-TIP:** 10 V/div to 125 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 **DL-ISO-2500V-TIP:** 25 V/div to 320 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-1000V-TIP**: ±1000 V		**DL-ISO-10V-TIP:** ±50 V **DL-ISO-200V-TIP:** ±150 V **DL-ISO-1000V-TIP:** ±2500 V
Input Impedance	**DL-ISO-2V-TIP:** 200 kΩ || 3.6 pF **DL-ISO-40V-TIP:** 1 MΩ || 2.1 pF **DL-ISO-1000V-TIP:** 8 MΩ || 1.5 pF		**DL-ISO-10V-TIP:** 1 MΩ || 2.1 pF **DL-ISO-200V-TIP:** 7.5 MΩ || 2 pF **DL-ISO-1000V-TIP:** 15 MΩ || 2.1 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

DL-ISO-2V-TIP	1 GHz	700 MHz	350 MHz
50 mV/div	1.98 mVrms	1.78 mVrms	1.12 mVrms
100 mV/div	3.37 mVrms	3.00 mVrms	2.25 mVrms
200 mV/div	9.22 mVrms	7.12 mVrms	4.49 mVrms

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

CMRR

Probe Tip	DC	1 MHz	100 MHz	200 MHz	500 MHz	1 GHz
DL-ISO-2V-TIP	160 dB	110 dB	90 dB	90 dB	80 dB	75 dB
DL-ISO-10V-TIP	160 dB	100 dB	75 dB	75 dB	65 dB	65 dB
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
DL-ISO-1000V-TIP	125 dB	85 dB	30 dB	35 dB	25 dB	20 dB
DL-ISO-2500V-TIP	115 dB	80 dB	25 dB	30 dB	25 dB	15 dB

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+A1:2019; IEC/EN 61010-2-030:2021) 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

Product Description	**Product Code**
High Voltage Optically Isolated Probe Models	
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
Accessories (must be ordered separately)	
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 1000 V high-voltage 0.2" square pin Tip	DL-ISO-1000V-TIP
DL-ISO 2500 V high-voltage 0.2" square pin Tip	DL-ISO-2500V-TIP
DL-ISO accessories kit (Incl MMCX to Y-lead sockets/solder-ins, square pin socket/solder-ins, MMCX-sq pin adapter, grabbers)	DL-ISO-ACC-KIT