

# Isolated Gate Driver Challenges and Solutions

Multiple Choice Quiz

TI Precision Labs – Isolation

# Quiz: Isolated Gate Driver Challenges and Solutions

1. **Drivers with differential inputs can emulate an enable function with no additional circuitry by \_\_\_\_\_**
  - a. Sensing a special pattern on the input
  - b. Dropping the internal supply voltage below the UVLO threshold
  - c. Using one input as the PWM input, and the other input as an enable/disable pin
  - d. This isn't possible, an external logic gate must be used
  
2. **Different undervoltage lockout levels are used for \_\_\_\_\_**
  - a. Logic-level MOSFETs, power MOSFETs, and IGBTs/SiC MOSFETs
  - b. Bipolar junction transistors and MOSFETs
  - c. Power MOSFETs in parallel
  - d. Different undervoltage lockout levels are not used by gate drivers
  
3. **Which of these is NOT a feature designed to help drive IGBTs and SiC MOSFETs?**
  - a. Miller clamp
  - b. Split outputs
  - c. Desaturation/overcurrent detection
  - d. 8V undervoltage lockout options

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4. **The channel-to-channel isolation rating is \_\_\_\_\_**
- a. Only applicable for half-bridge structures
  - b. Unipolar (one channel must be at a higher DC voltage than the other at all times)
  - c. Always the same as the control-to-output isolation rating
  - d. Determined largely by package geometry and pin/leadframe spacing
5. **Integrated dead time control circuits \_\_\_\_\_**
- a. Disable the gate driver when both inputs go high, and raise a fault on the control side
  - b. Hold the outputs low whenever both inputs are high, and for a fixed time after one input goes low
  - c. Measure the duration and order of a sequence of pulses, and repeat those pulses with added dead time inserted
  - d. Power down the gate driver during power converter sleep mode, preventing unnecessary energy expenditure

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