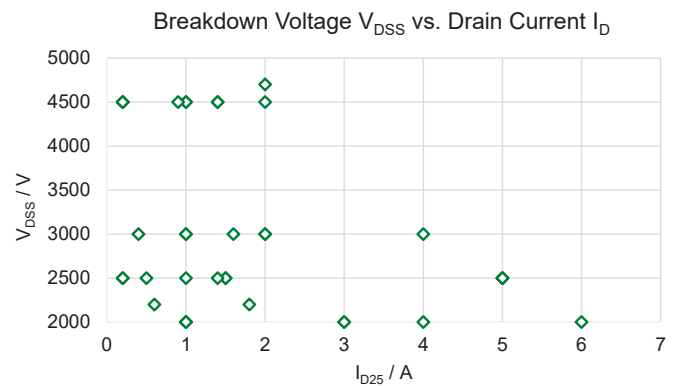


## Very High-Voltage MOSFETs

Littelfuse offers an extensive portfolio of discrete Very High-Voltage (VHV) MOSFETs featuring improved overall device performance, reduced losses, increased avalanche robustness, and reliable operation.

Littelfuse VHV MOSFETs ranging from 2000 V to 4700 V, with nominal current ratings from 200 mA to 6 A and power dissipation capability from 78 W to 960 W, are available in both standard and unique packaging options.

VHV MOSFETs are capable of withstanding high avalanche energies and are specifically designed to address demanding, fast-switching power conversion applications requiring very high blocking voltages.

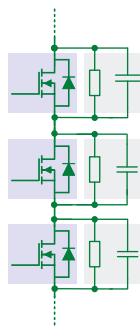


$V_{DSS}$ / kV	$I_{D25}$ / A	$R_{DS(ON)}$ / $\Omega$	$P_D$ / W
2, 2.2, 2.5, 3, 4.5, 4.7	0.2 - 6	4 - 625	78 - 960

### Comparison - HV design with Littelfuse VHV MOSFETs vs. series-connected LV MOSFETs

**Solution A: Using LV MOSFETs**

- Requires several MOSFETs in series
- Higher component count - decreases system reliability - requires sufficient overdesign for acceptable reliability
- Additional RC components are required for uniform voltage sharing
- Complicates gate drive & system design
- Requires additional PCB area
- Cost-inefficient - Not a recommended design

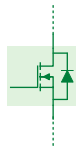


LV MOSFET + RC Element

OR

**Solution B: Using VHV MOSFET**

- A Single MOSFET is sufficient
- Lower component count - improves system reliability
- Isolated packages simplify design and mounting effort
- Simplifies gate driving and design effort
- Saves PCB area - Increases power density
- Cost-efficient design - Recommended design

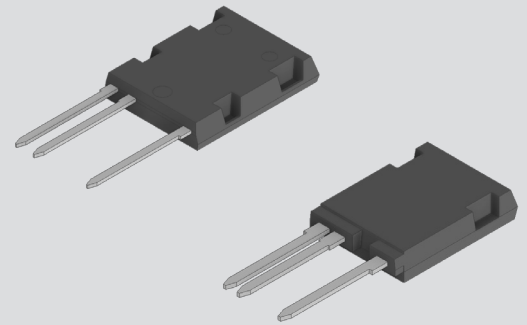


VHV MOSFET



# Littelfuse®

Expertise Applied | Answers Delivered



## Very High-Voltage MOSFETs

### Features

- Very high blocking voltage
- Unique high-voltage packages
- Proprietary isolated packages
- High avalanche energy rating
- High power dissipation capability

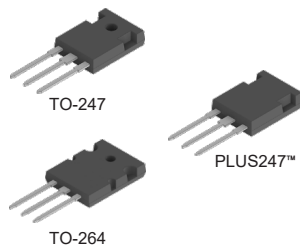
### Benefits

- High power density
- Cost-efficient solution
- Improved reliability
- Easy mounting, PCB space saving

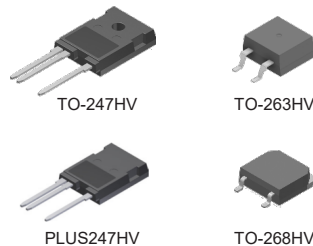
### Applications

- Auxiliary power supplies in industrial motor drives, photovoltaic inverters, HVDC grid systems, uninterruptable power supplies, traction drives, and electric vehicles
- Laser and X-ray generation systems
- High-voltage power supplies
- Pulsed power applications

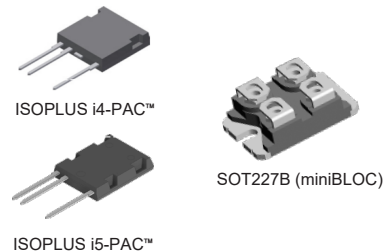
#### Standard & Plus Packages



#### High Voltage Packages



#### Isolated Packages



Unique and Proprietary Packages from Littelfuse



Scan this QR code to access the webpage on Very High Voltage MOSFETs at [littelfuse.com](http://littelfuse.com)



Scan this QR code to access the article on Littelfuse High-Voltage Discrete Silicon MOSFETs and their Applications



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