TPSMC, TPSMD, and TP5.0SMDJ Series

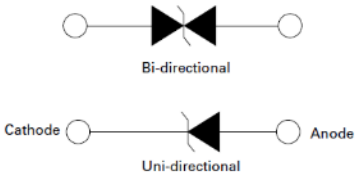
Automotive TVS Diodes High-Voltage Extension for BDU, PTC HVAC Protection

Problem/Solution

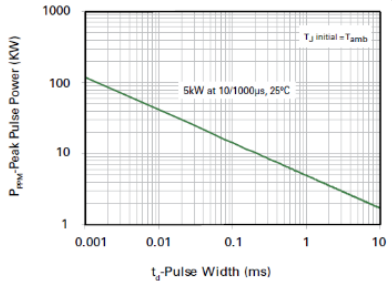
Modern automotive electronics face severe electrical transients from load dumps and other high-voltage/high-power events that can destroy sensitive components like IGBTs and power MOSFETs. Traditional protection methods often require multiple devices, consuming valuable PCB space while adding cost and complexity. Littelfuse addresses this challenge with three new automotive-grade TVS diodes. They offer high standoff voltages and exceptional peak pulse power dissipation in compact DO-214AB surface-mount packages.

Technical Resources

Series Page | TPSMC Datasheet | TPSMD Datasheet | TP5.0SMDJ Datasheet | Video

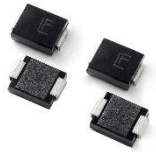


TP5.0SMDJ Peak Pulse Power Rating



Benefits

- Only one TVS diode required for high voltage circuits, decreasing BOM cost
- Withstands high surge current and peak pulse power
- IEC-61000-4-2 ESD compliant
- Fast response time
- Space-saving package
- Automotive-grade reliability



Features

- High maximum standoff voltage: ≥400 V
- Peak surge current as high as 300 A, peak pulse power as high as 5 kW
- Withstands 30 kV ESD strikes
- Typically, less than 1 ps response time
- DO-214AB surface mount package
- AEC-Q101-qualified and PPAP capable

Markets/Applications

- Battery Disconnected Unit (BDU)
- High-voltage air conditioner
- Positive-temperature coefficient heater