

General Description

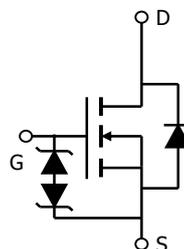
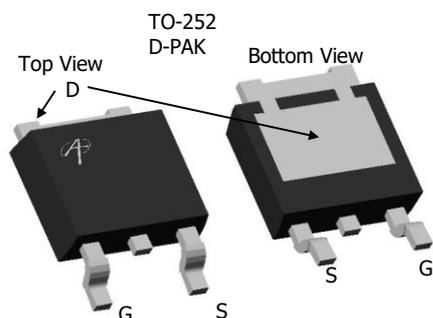
The AOD486A uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. This device is suitable for use in PWM, load switching and general purpose applications.

- RoHS Compliant
- Halogen Free*

Features

V_{DS} (V) = 40V
 I_D = 50 A (V_{GS} = 10V)
 $R_{DS(ON)} < 9.8 \text{ m}\Omega$ (V_{GS} = 10V)
 $R_{DS(ON)} < 13 \text{ m}\Omega$ (V_{GS} = 4.5V)

ESD Protected
 100% UIS Tested
 100% Rg Tested



Absolute Maximum Ratings $T_A=25^\circ\text{C}$ unless otherwise noted

| Parameter | Symbol | Maximum | Units |
|---|----------------|-------------------------|------------------|
| Drain-Source Voltage | V_{DS} | 40 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Continuous Drain Current ^G | I_D | $T_C=25^\circ\text{C}$ | 50 |
| | | $T_C=100^\circ\text{C}$ | 36 |
| Pulsed Drain Current ^C | I_{DM} | 100 | A |
| Avalanche Current ^C | I_{AR} | 30 | A |
| Repetitive avalanche energy $L=0.3\text{mH}$ ^C | E_{AR} | 135 | mJ |
| Power Dissipation ^B | P_D | $T_C=25^\circ\text{C}$ | 50 |
| | | $T_C=100^\circ\text{C}$ | 25 |
| Power Dissipation ^A | P_{DSM} | $T_A=25^\circ\text{C}$ | 2 |
| | | $T_A=70^\circ\text{C}$ | 1.3 |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55 to 175 | $^\circ\text{C}$ |

Thermal Characteristics

| Parameter | Symbol | Typ | Max | Units |
|--|-----------------|--------------|------|--------------------|
| Maximum Junction-to-Ambient ^A | $R_{\theta JA}$ | t #10s | 17.4 | $^\circ\text{C/W}$ |
| Maximum Junction-to-Ambient ^A | | Steady-State | 45 | $^\circ\text{C/W}$ |
| Maximum Junction-to-Case ^B | $R_{\theta JC}$ | Steady-State | 1.2 | $^\circ\text{C/W}$ |

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

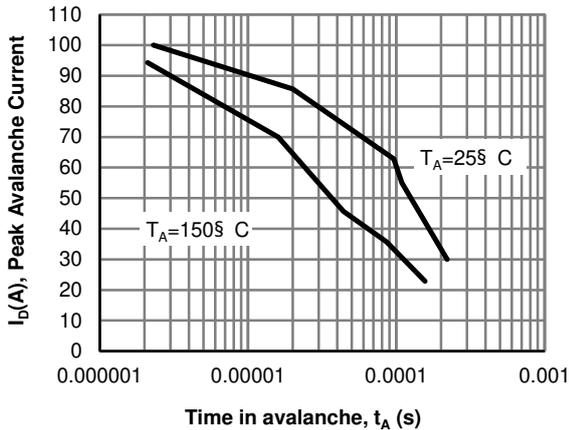


Figure 12: Single Pulse Avalanche capability

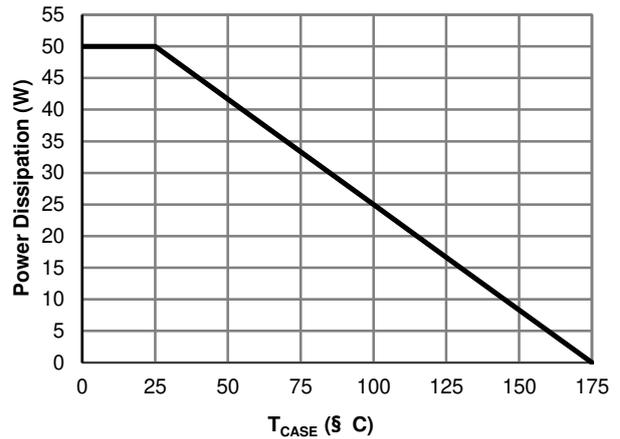


Figure 13: Power De-rating (Note B)

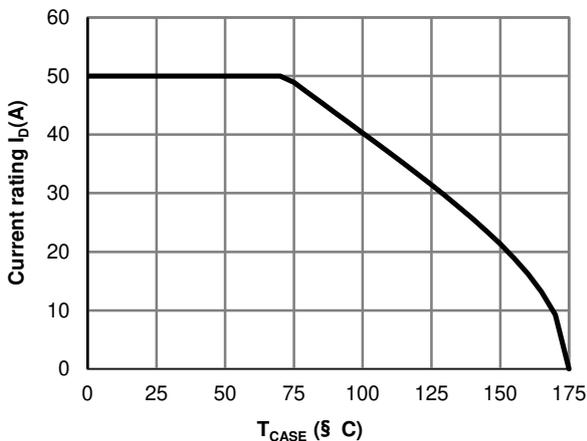


Figure 14: Current De-rating (Note B)

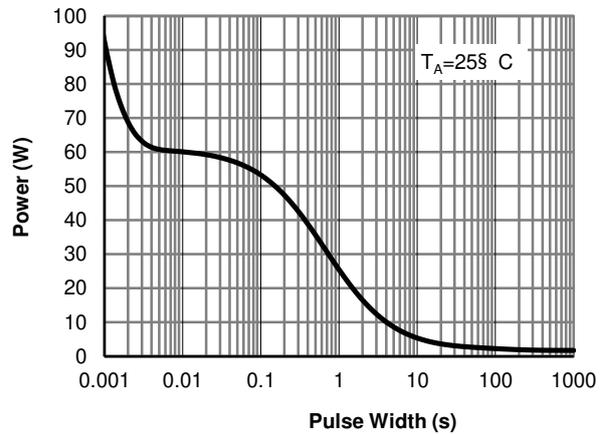


Figure 15: Single Pulse Power Rating Junction-to-Ambient (Note H)

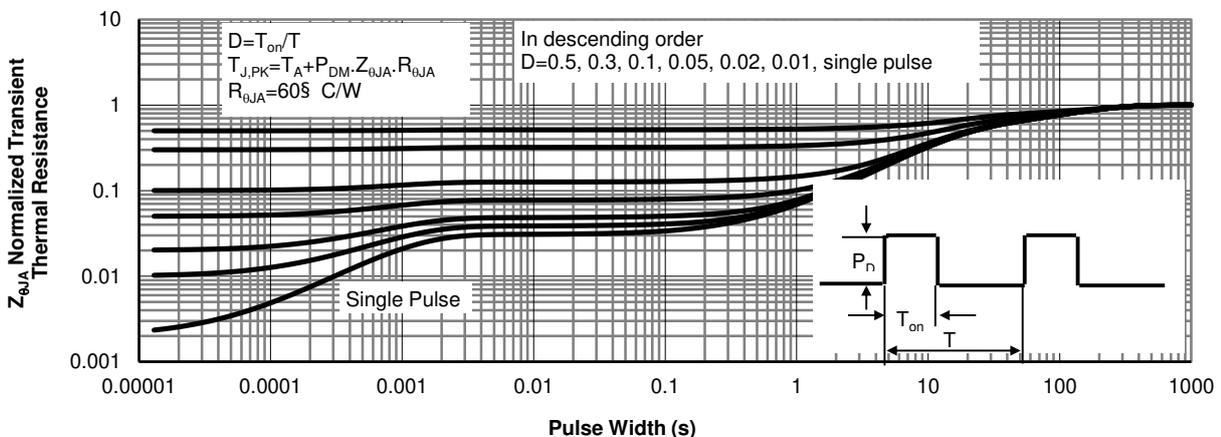
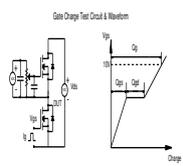
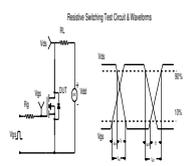


Figure 16: Normalized Maximum Transient Thermal Impedance (Note H)





Uninterruptible Power Supply (UPS) Test Circuit & Waveforms

