

Features:

- 650V Schottky Diode
- Zero Reverse Recovery Current
- High Frequency Operation
- Positive Temperature Coefficient
- Temperature independent Switching
- Extremely fast Switching

Benefits:

- Unipolar Rectifier
- Minimal switching loss
- Higher Efficiency
- Low cooling

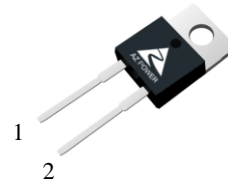
Characteristic

Symbol	Value	Unit
V_{RRM}	650	V
$I_F (AV)$	4	A
Q_C	10.5	nC

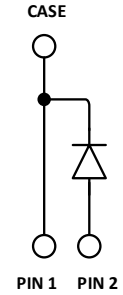
Applications:

- Switch Mode Power Supply
- Booster diodes in PFC, DC/DC
- AC/DC converters

Outline



Inner Circuit



TO-220-2L

Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions
V_R	DC Peak Reverse Voltage	650	V	$T_j=25\text{ }^\circ\text{C}$
V_{RRM}	Repetitive Peak Reverse Voltage	650	V	$T_j=25\text{ }^\circ\text{C}$
V_{RSM}	Surge Peak Reverse Voltage	650	V	$T_j=25\text{ }^\circ\text{C}$
I_F	Continuous Forward Current	13.5	A	$T_c=25\text{ }^\circ\text{C}$
		6.5		$T_c=135\text{ }^\circ\text{C}$
		4		$T_c=157\text{ }^\circ\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	27	A	$T_c=25\text{ }^\circ\text{C}$, $T_p=10\text{ms}$, Half Sine Wave
		24		$T_c=110\text{ }^\circ\text{C}$, $T_p=10\text{ms}$, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	30	A	$T_c=25\text{ }^\circ\text{C}$, $T_p=10\text{ms}$, Half Sine Wave
		26		$T_c=110\text{ }^\circ\text{C}$, $T_p=10\text{ms}$, Half Sine Wave
P_D	Power Dissipation	60	W	$T_c=25\text{ }^\circ\text{C}$
		20		$T_c=125\text{ }^\circ\text{C}$
$T_{J,max}$	Operating Junction Temperature	175	$^\circ\text{C}$	
T_{stg}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	

Thermal characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit
R _{thJC}	Thermal resistance		2.5		°C/W

Electrical Characteristics

Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
V _{DC}	DC Blocking Voltage	650			V	I _R =100 μA, T _j =25 °C
V _F	Forward Voltage		1.5 1.8	1.8 2.2	V	I _F =4A, T _j =25 °C I _F =4A, T _j =175 °C
I _R	Reverse Current		1 4	30 160	μA	V _R =650V, T _j =25 °C V _R =650V, T _j =175 °C
Q _C	Total Capacitive Charge		10.5		nC	$Q_C = \int_0^{V_R} C dV$ T _j =25 °C, V _R =400V
C	Total Capacitance		157 21.5 21		pF	V _R =1V, T _j =25 °C, f=1 MHz V _R =200V, T _j =25 °C, f=1 MHz V _R =400V, T _j =25 °C, f=1 MHz

Typical Performance

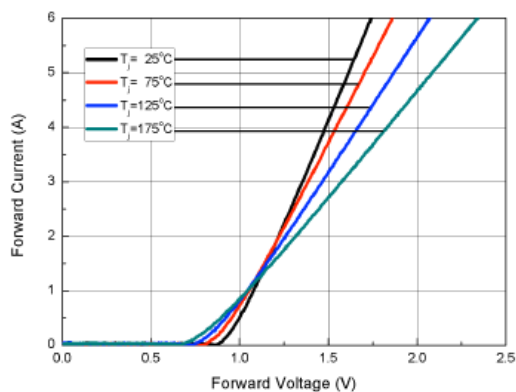


Fig. 1 Forward Characteristics

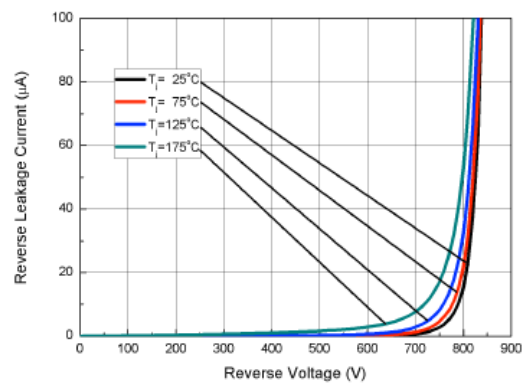


Fig. 2 Reverse Characteristics

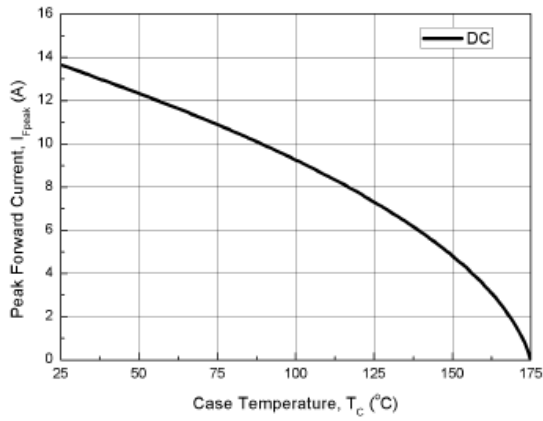


Fig. 3 Current Derating

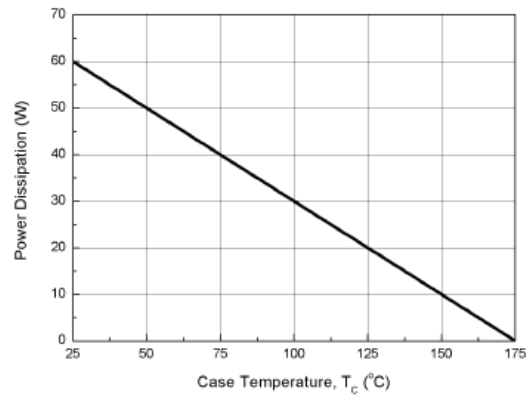


Fig. 4 Power Derating

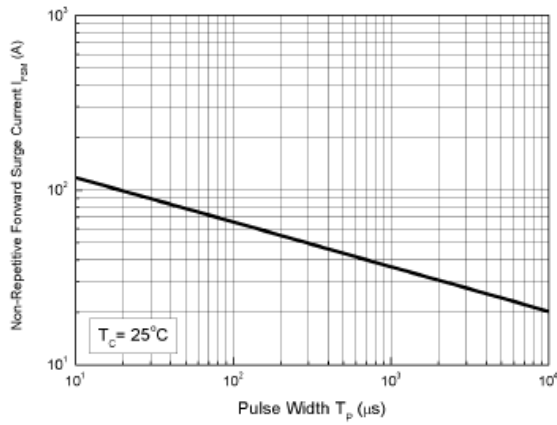


Fig. 5 Non-repetitive peak forward surge current versus pulse duration (sinusoidal waveform)

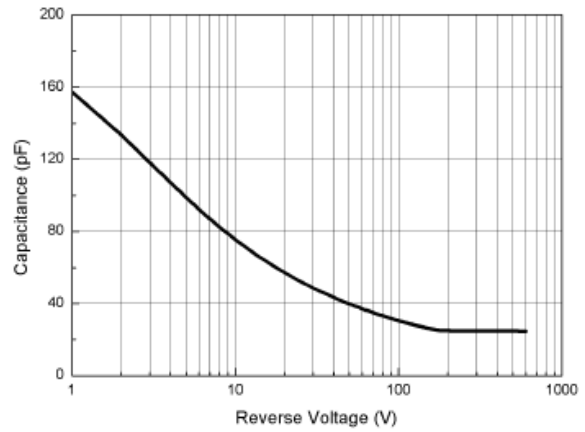
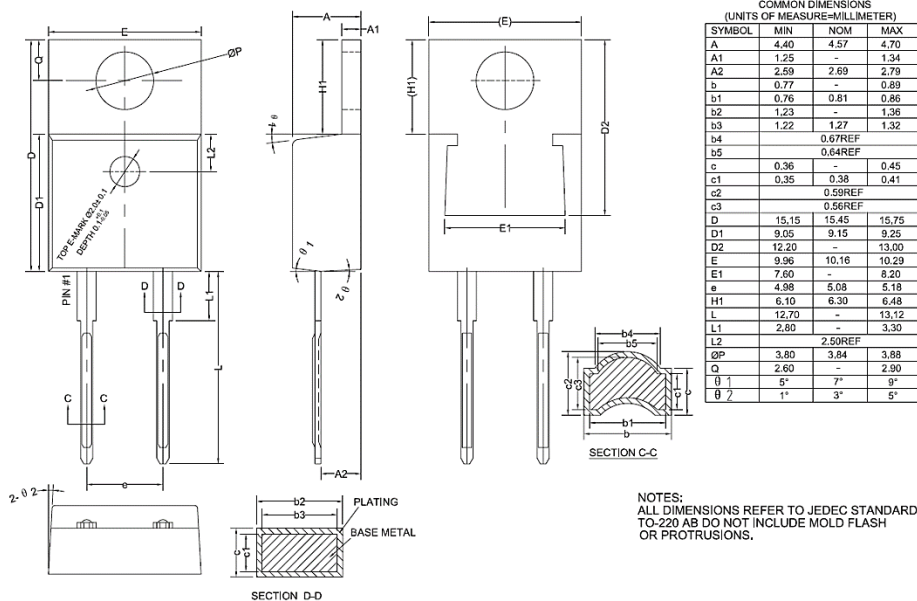


Fig. 6 Capacitance vs. Reverse Voltage

Package TO-220-2L (Unit: mm)



RoHS Compliance

The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2011/65/EC(RoHS2), as implemented January 2nd, 2013.

REACH Compliance

REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, please contact an AZ Power representative to ensure you get the most up-to-date REACH SVHC declaration. REACH banned substance information (Reach Article 67) is also available upon request.

This Product has not been designed or tested for use in, and is not intended for use in, applications implanted into the human body nor in applications in which failure of the product could lead to death, personal injury or property damage, including but not limited to equipment used in the operation of nuclear facilities, life-support machines, systems, or air-traffic control systems.

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