

**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

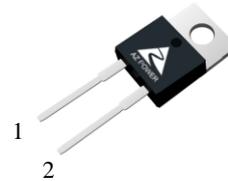
**Characteristic**

Symbol	Value	Unit
$V_{RRM}$	650	V
$I_F (AV)$	6	A
$Q_C$	13	nC

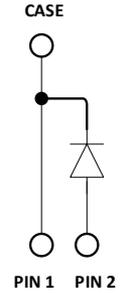
**Applications:**

- 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	18	A	$T_c=25\text{ }^\circ\text{C}$
		8.5		$T_c=135\text{ }^\circ\text{C}$
		6		$T_c=152\text{ }^\circ\text{C}$
$I_{FRM}$	Repetitive Peak Forward Surge Current	38	A	$T_c=25\text{ }^\circ\text{C}$ , $T_p=10\text{ms}$ , Half Sine Wave
		34		$T_c=110\text{ }^\circ\text{C}$ , $T_p=10\text{ms}$ , Half Sine Wave
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	49	A	$T_c=25\text{ }^\circ\text{C}$ , $T_p=10\text{ms}$ , Half Sine Wave
		44		$T_c=110\text{ }^\circ\text{C}$ , $T_p=10\text{ms}$ , Half Sine Wave
$P_D$	Power Dissipation	71	W	$T_c=25\text{ }^\circ\text{C}$
		23		$T_c=125\text{ }^\circ\text{C}$
$T_{J,max}$	Operating Junction Temperature	175	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	

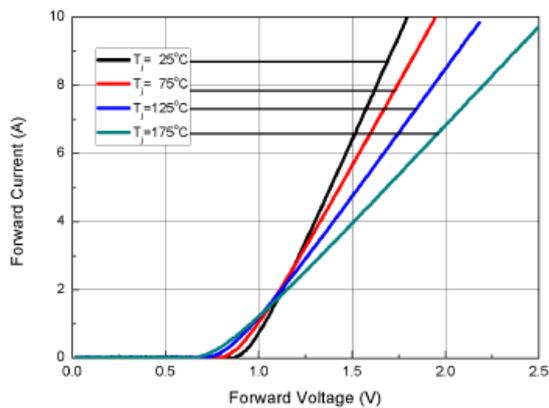
**Thermal characteristics**

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{thJC}$	Thermal resistance		2.1		°C/W

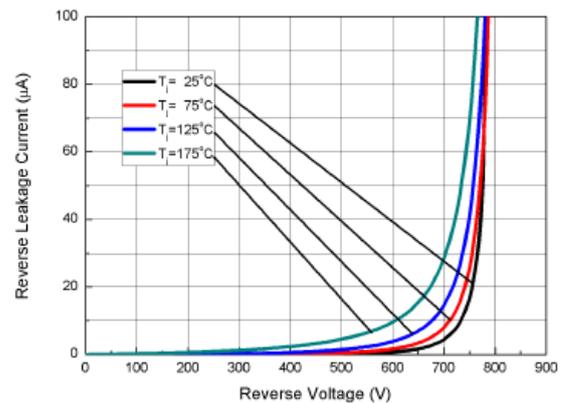
**Electrical Characteristics**

Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
$V_{DC}$	DC Blocking Voltage	650			V	$I_R=100\mu A, T_j=25\text{ }^\circ C$
$V_F$	Forward Voltage		1.5 1.9	1.8 2.2	V	$I_F=12A, T_j=25\text{ }^\circ C$ $I_F=12A, T_j=175\text{ }^\circ C$
$I_R$	Reverse Current		1 10	30 160	$\mu A$	$V_R=1200V, T_j=25\text{ }^\circ C$ $V_R=1200V, T_j=175\text{ }^\circ C$
$Q_C$	Total Capacitive Charge		13		nC	$Q_C = \int_0^{V_R} C dV$ $T_j=25\text{ }^\circ C, V_R=400V$
C	Total Capacitance		244 37 36		pF	$V_R=1V, T_j=25\text{ }^\circ C, f=1\text{ MHz}$ $V_R=200V, T_j=25\text{ }^\circ C, f=1\text{ MHz}$ $V_R=400V, T_j=25\text{ }^\circ C, f=1\text{ MHz}$

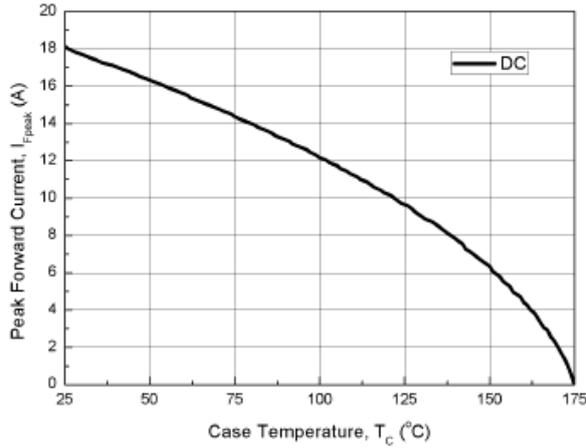
**Typical Performance**



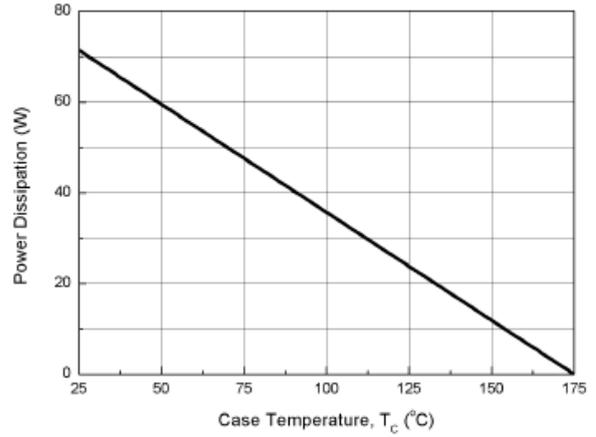
**Fig. 1 Forward Characteristics**



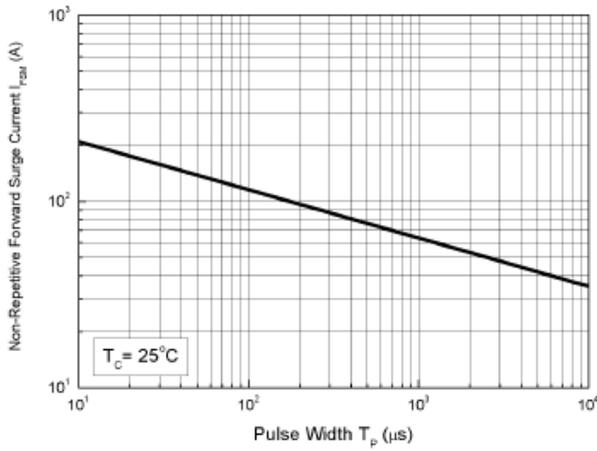
**Fig. 2 Reverse Characteristics**



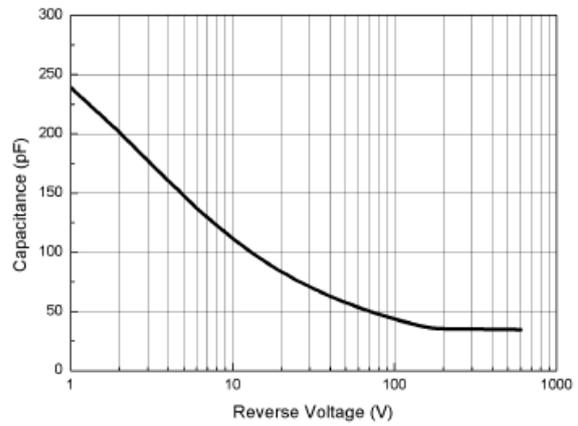
**Fig. 3 Current Derating**



**Fig. 4 Power Derating**

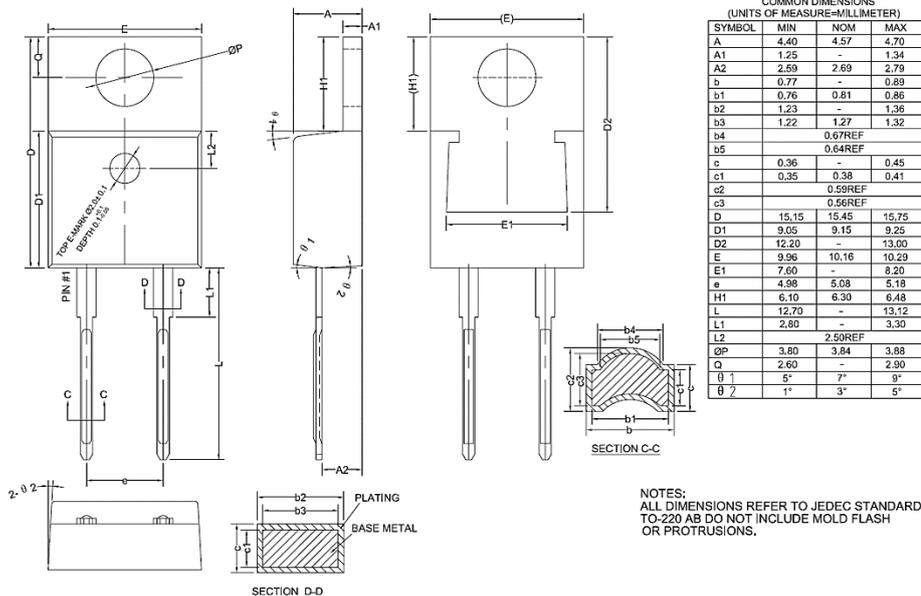


**Fig. 5 Non-repetitive peak forward surge current versus pulse duration (sinusoidal waveform)**



**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 2<sup>nd</sup>, 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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