

**Features:**

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

## Switching

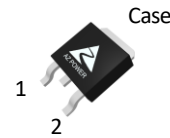
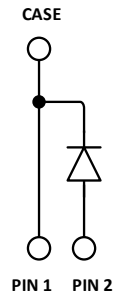
**Benefits:**

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

Symbol	Value	Unit
$V_{RRM}$	650	V
$I_F$ ( $T_C=121^\circ\text{C}$ )	8	A
$Q_C$	28	nC

**Applications:**

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

**Outline**

**TO-252-2**
**Circuit**

**Maximum Ratings**

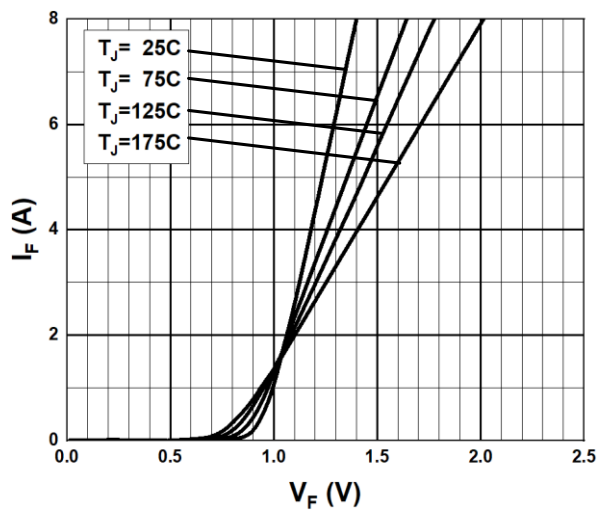
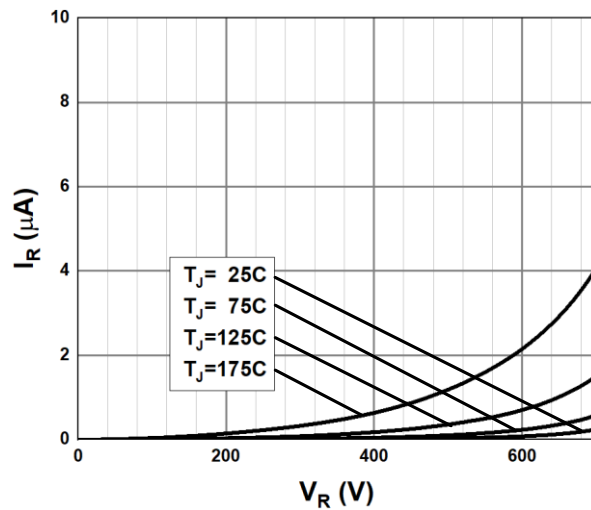
Symbol	Parameter	Value	Unit	Test Conditions
$V_R$	DC Peak Reverse Voltage	650	V	$T_J = 25^\circ\text{C}$
$V_{RRM}$	Repetitive Peak Reverse Voltage	650	V	$T_J = 25^\circ\text{C}$
$V_{RSM}$	Surge Peak Reverse Voltage	650	V	$T_J = 25^\circ\text{C}$
$I_F$	Continuous Forward Current	13.7	A	$T_C = 25^\circ\text{C}$
		10.8		$T_C = 75^\circ\text{C}$
		8		$T_C = 121^\circ\text{C}$
$I_{FRM}$	Repetitive Peak Forward Surge Current	56	A	$T_C = 25^\circ\text{C}$ , $T_P = 10\text{ms}$ , Half Sine Wave
		50		$T_C = 125^\circ\text{C}$ , $T_P = 10\text{ms}$ , Half Sine Wave
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	74	A	$T_C = 25^\circ\text{C}$ , $T_P = 10\text{ms}$ , Half Sine Wave
		67		$T_C = 125^\circ\text{C}$ , $T_P = 10\text{ms}$ , Half Sine Wave
$P_D$	Power Dissipation	44	W	$T_C = 25^\circ\text{C}$
		19		$T_C = 110^\circ\text{C}$
$T_{J,max}$	Operating Junction Temperature	175	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	

**Thermal characteristics**

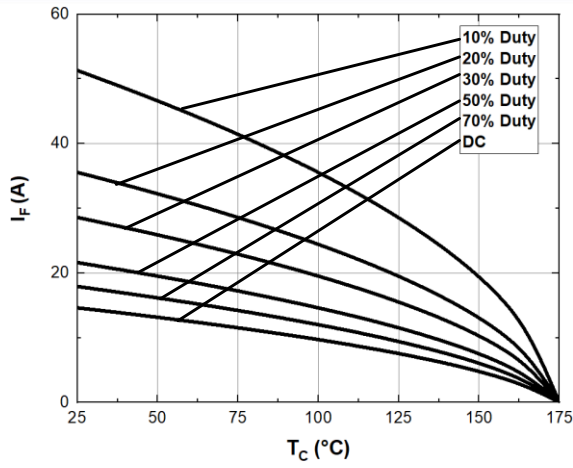
Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{thJC}$	Thermal Resistance		3.4		$^{\circ}\text{C}/\text{W}$

**Electrical Characteristics**

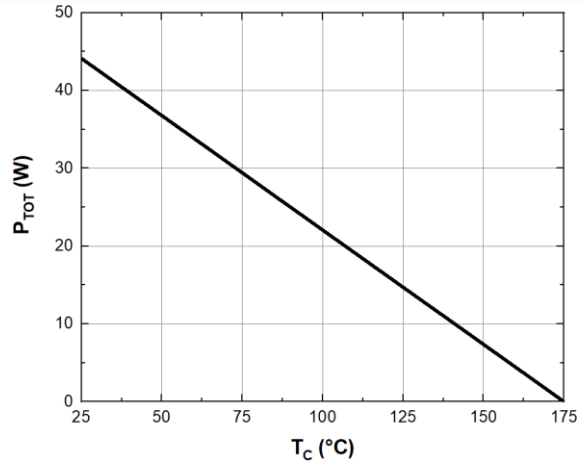
Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
$V_{DC}$	DC Blocking Voltage	650			V	$I_R=100\mu\text{A}$ , $T_J=25^{\circ}\text{C}$
$V_F$	Forward Voltage		1.4 2.0	1.7 2.4	V	$I_F=8\text{A}$ , $T_J=25^{\circ}\text{C}$ $I_F=8\text{A}$ , $T_J=175^{\circ}\text{C}$
$I_R$	Reverse Current		1 10	30 100	$\mu\text{A}$	$V_R=650\text{V}$ , $T_J=25^{\circ}\text{C}$ $V_R=650\text{V}$ , $T_J=175^{\circ}\text{C}$
$Q_C$	Total Capacitive Charge		28		nC	$I_F=8\text{A}$ , $di/dt=400\text{A}/\mu\text{s}$ $T_J=25^{\circ}\text{C}$ , $V_R=400\text{V}$
C	Total Capacitance		329 45 43		pF	$V_R=1\text{V}$ , $T_J=25^{\circ}\text{C}$ , $f=1\text{ MHz}$ $V_R=200\text{V}$ , $T_J=25^{\circ}\text{C}$ , $f=1\text{ MHz}$ $V_R=400\text{V}$ , $T_J=25^{\circ}\text{C}$ , $f=1\text{ MHz}$

**Typical Performance**

**Fig. 1 Forward Characteristics**

**Fig. 2 Reverse Characteristics**

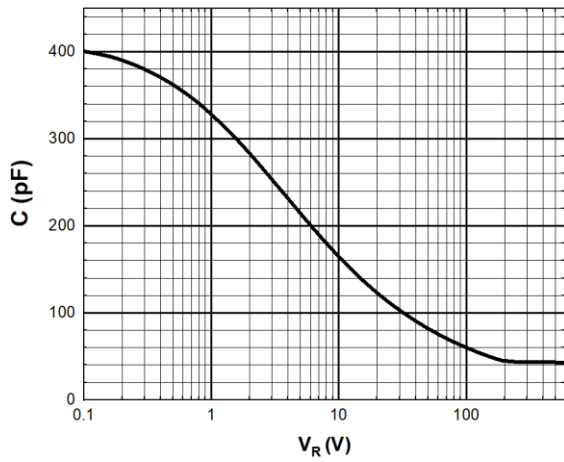
**Typical Performance**



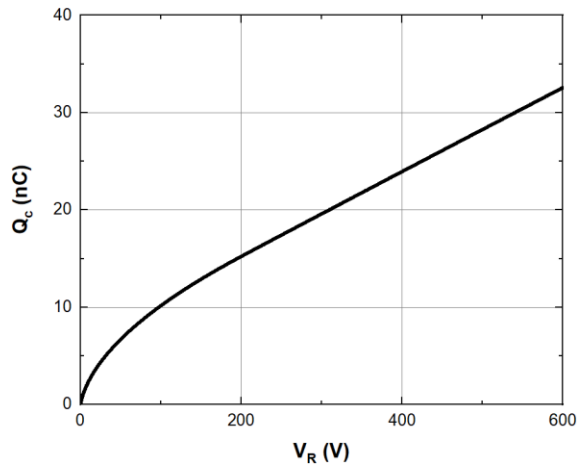
**Fig. 3 Current Derating**



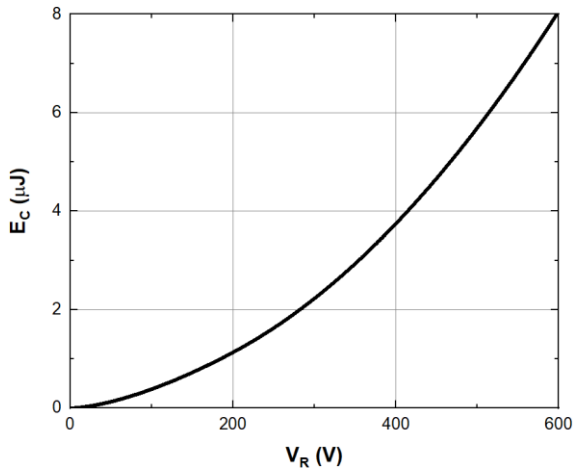
**Fig. 4 Power Derating**



**Fig. 5 Capacitance vs. Reverse Voltage**

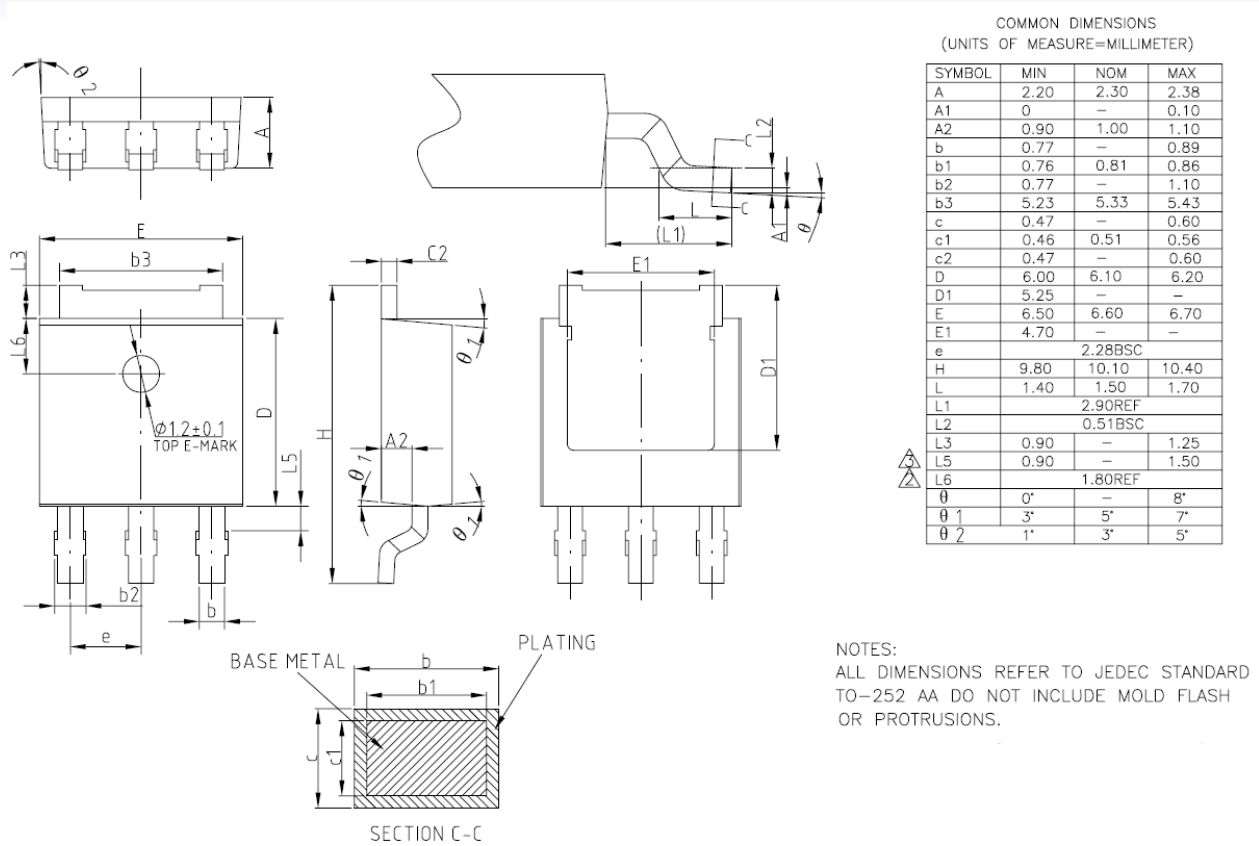


**Fig. 6 Recovery Charge vs. Reverse Voltage**



**Fig. 7 Capacitance stored Energy**

Package TO-252-2 (Unit: mm)



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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