

**Features:**

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

Switching

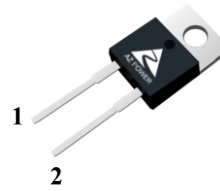
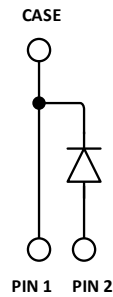
**Benefits:**

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

Symbol	Value	Unit
$V_{RRM}$	650	V
$I_F$ ( $T_C = 161^\circ\text{C}$ )	6	A
$Q_C$	26	nC

**Applications:**

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

**Outline**

**TO-220-2L**
**Circuit**

**Maximum Ratings**

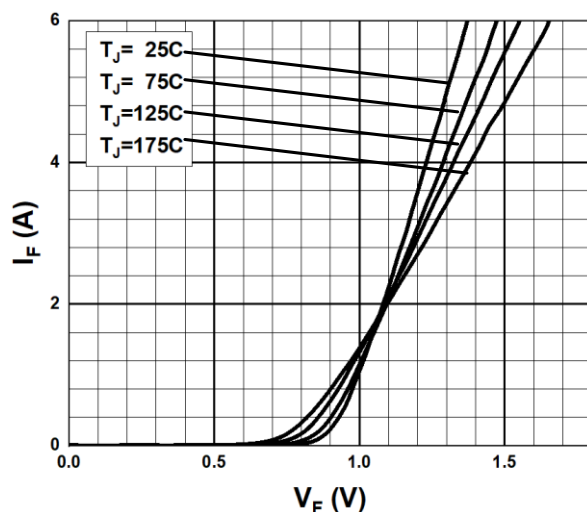
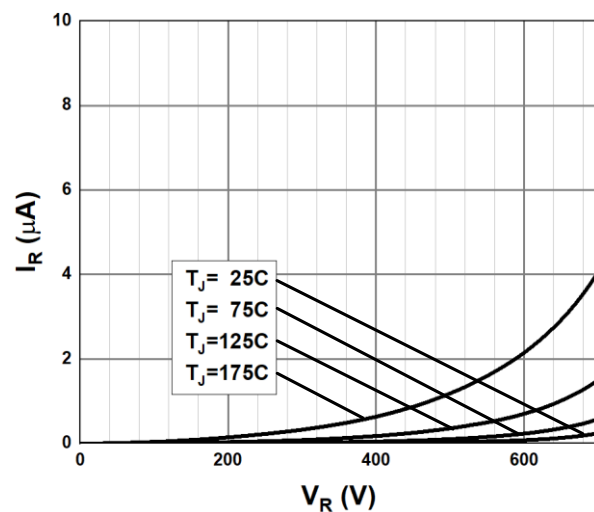
Symbol	Parameter	Value	Unit	Test Conditions
$V_R$	DC Peak Reverse Voltage	650	V	$T_J = 25^\circ\text{C}$
$V_{RRM}$	Repetitive Peak Reverse	650	V	$T_J = 25^\circ\text{C}$
$V_{RSM}$	Surge Peak Reverse Voltage	650	V	$T_J = 25^\circ\text{C}$
$I_F$	Continuous Forward Current	24.8	A	$T_C = 25^\circ\text{C}$
		12.6		$T_C = 135^\circ\text{C}$
		6		$T_C = 161^\circ\text{C}$
$I_{FRM}$	Repetitive Peak	56	A	$T_C = 25^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$
	Forward Surge Current	50		$T_C = 125^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$
$I_{FSM}$	Non-Repetitive Peak	74	A	$T_C = 25^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$
	Forward Surge Current	67		$T_C = 125^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$
$P_D$	Power Dissipation	125	W	$T_C = 25^\circ\text{C}$
		41.7		$T_C = 125^\circ\text{C}$
$T_{J,max}$	Operating Junction Temperature	175	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	

**Thermal characteristics**

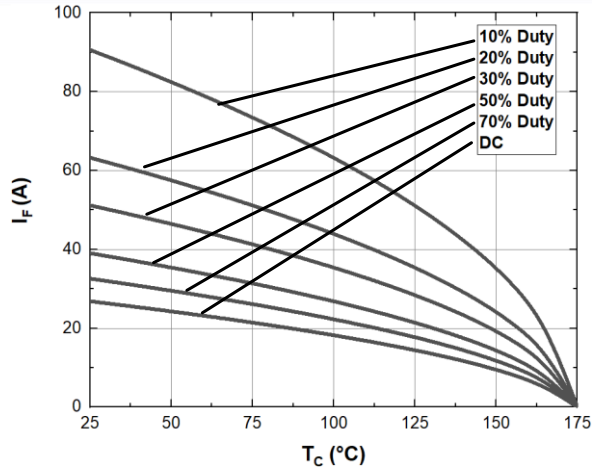
Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{thJC}$	Thermal Resistance		1.2		$^{\circ}\text{C}/\text{W}$

**Electrical Characteristics**

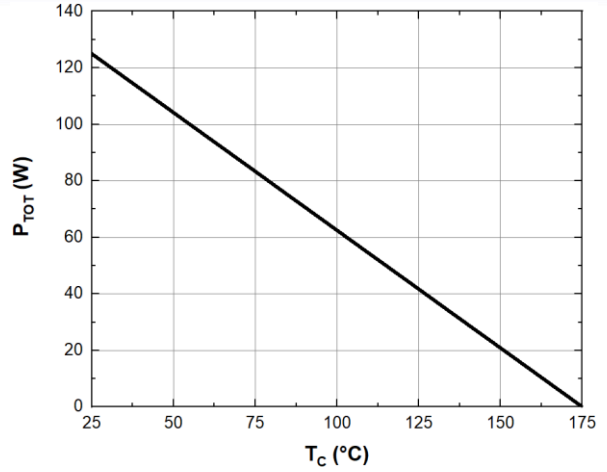
Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
$V_{DC}$	DC Blocking Voltage	650			V	$I_R = 100\mu\text{A}$ , $T_J = 25^{\circ}\text{C}$
$V_F$	Forward Voltage		1.4 1.65	1.6 1.9	V	$I_F = 6\text{A}$ , $T_J = 25^{\circ}\text{C}$ $I_F = 6\text{A}$ , $T_J = 175^{\circ}\text{C}$
$I_R$	Reverse 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		26		nC	$I_F = 6\text{A}$ , $dI/dt = 400\text{A}/\mu\text{s}$ $T_J = 25^{\circ}\text{C}$ , $V_R = 400\text{V}$
$C$	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**

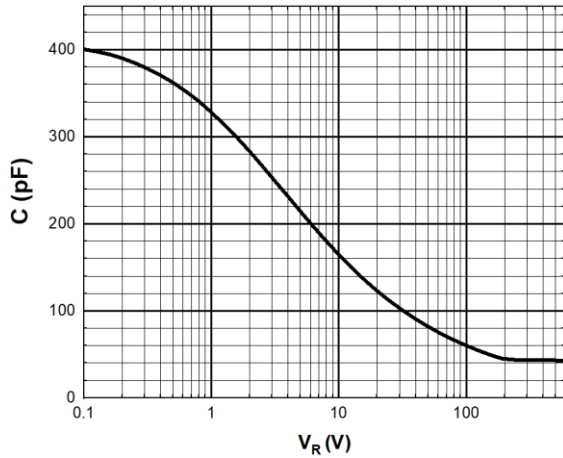
**Typical Performance**



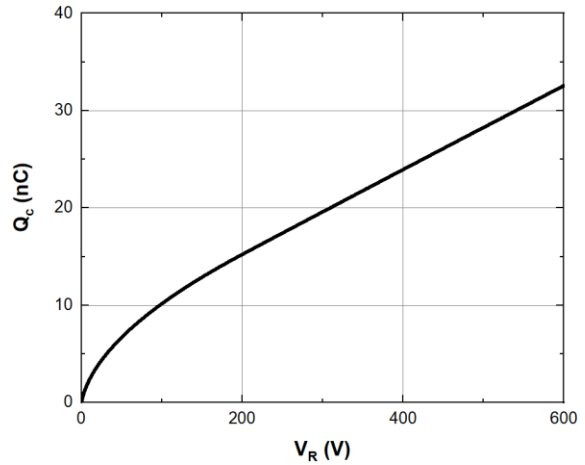
**Fig. 3 Current Derating**



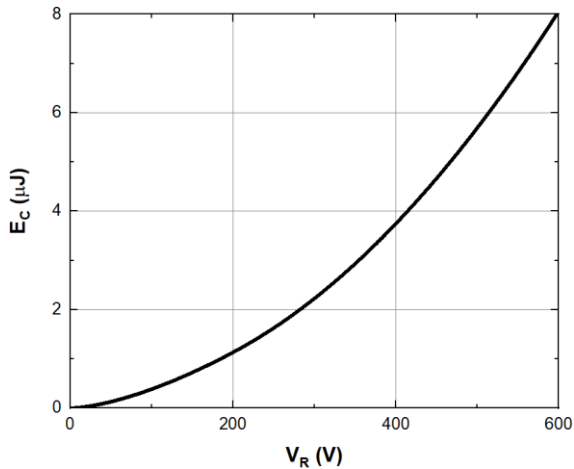
**Fig. 4 Power Derating**



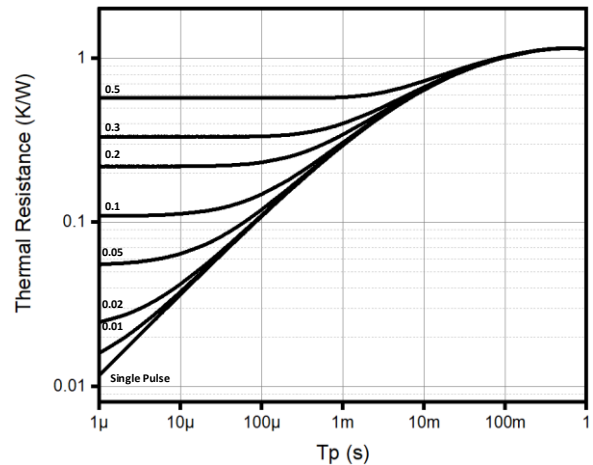
**Fig. 5 Capacitance vs. Reverse Voltage**



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

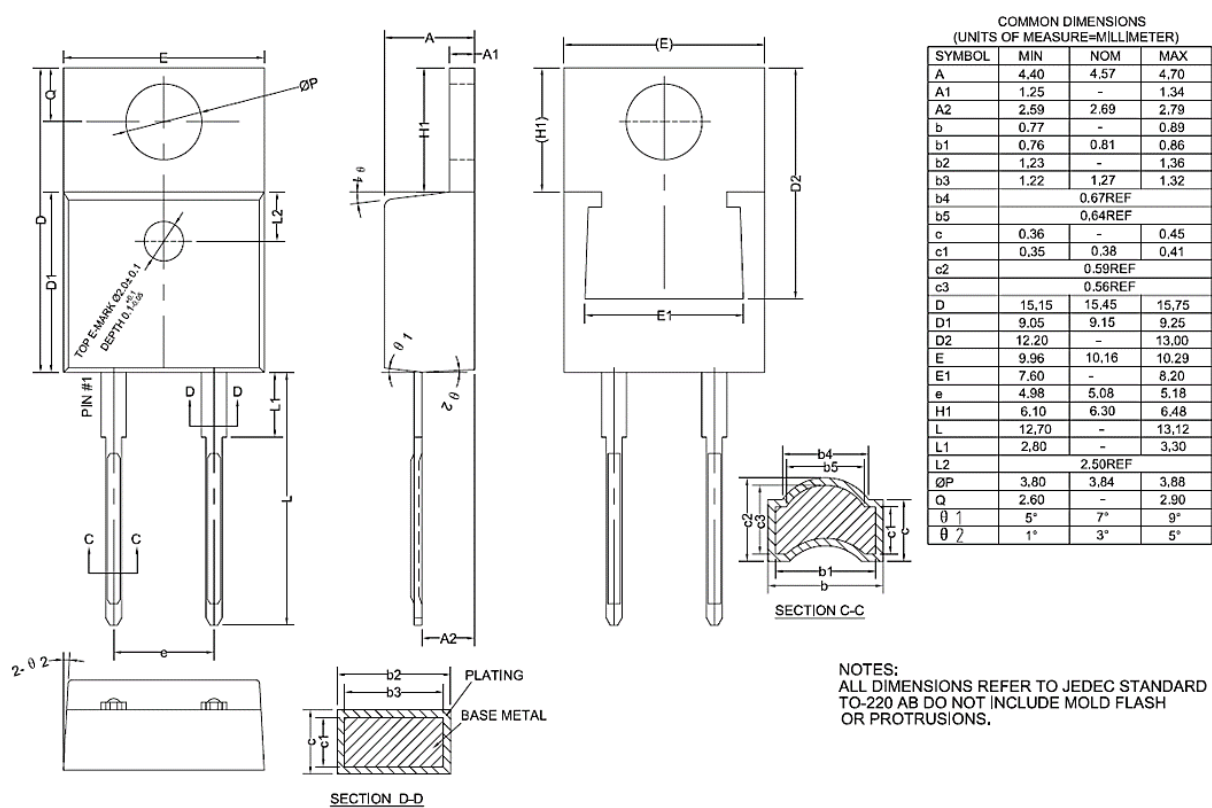


**Fig. 7 Capacitance stored Energy**



**Fig. 7 Thermal Impedance**

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



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