

**Features:**

- 1200V Schottky Diode
- Zero Reverse Recovery Current
- High Frequency Operation
- Positive Temperature Coefficient
- Temperature independent

Switching

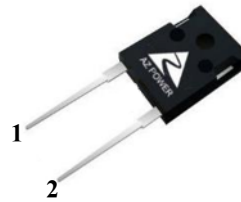
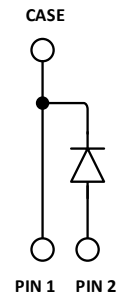
**Benefits:**

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

Symbol	Value	Unit
$V_{RRM}$	1200	V
$I_F$ ( $T_C=155^\circ\text{C}$ )	20	A
$Q_C$	110	nC

**Applications:**

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

**Outline**

**TO-247-2**
**Circuit**

**Maximum Ratings**

Symbol	Parameter	Value	Unit	Test Conditions
$V_R$	DC Peak Reverse Voltage	1200	V	$T_J = 25^\circ\text{C}$
$V_{RRM}$	Repetitive Peak Reverse	1200	V	$T_J = 25^\circ\text{C}$
$V_{RSM}$	Surge Peak Reverse Voltage	1300	V	$T_J = 25^\circ\text{C}$
$I_F$	Continuous Forward Current	68	A	$T_C = 25^\circ\text{C}$
		32		$T_C = 135^\circ\text{C}$
		20		$T_C = 155^\circ\text{C}$
$I_{FRM}$	Repetitive Peak Forward Surge Current	222	A	$T_C = 25^\circ\text{C}, T_p = 10\text{ms}, \text{Half Sine Wave}$
		178		$T_C = 125^\circ\text{C}, T_p = 10\text{ms}, \text{Half Sine Wave}$
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	261	A	$T_C = 25^\circ\text{C}, T_p = 10\text{ms}, \text{Half Sine Wave}$
		235		$T_C = 125^\circ\text{C}, T_p = 10\text{ms}, \text{Half Sine Wave}$
$P_D$	Power Dissipation	312	W	$T_C = 25^\circ\text{C}$
		104		$T_C = 125^\circ\text{C}$
$T_{J,max}$	Operating Junction Temperature	175	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	

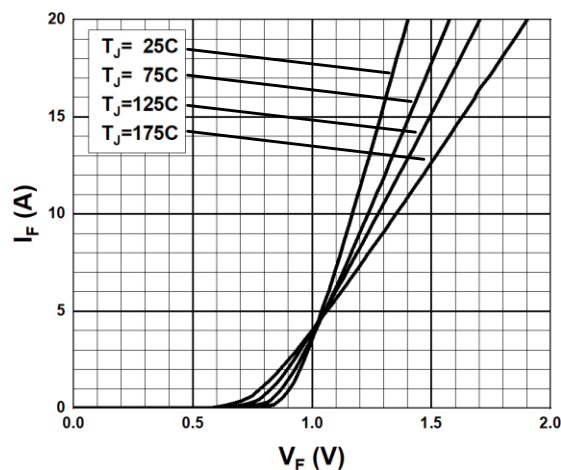
### Thermal characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{thJC}$	Thermal resistance		0.48		$^{\circ}C/W$

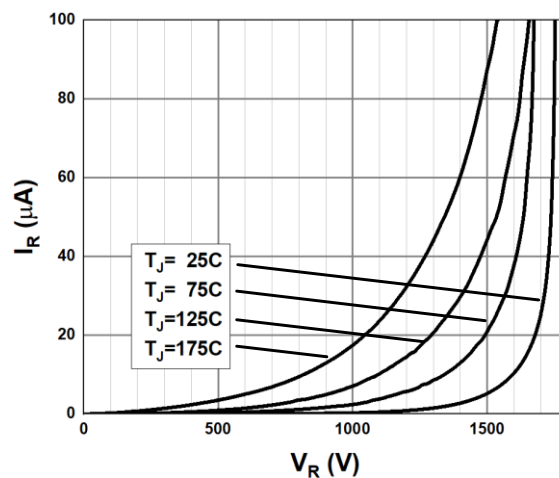
### Electrical Characteristics

Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
$V_{DC}$	DC Blocking Voltage	1200			V	$I_R = 400\mu A, T_J = 25^{\circ}C$
$V_F$	Forward Voltage		1.4 1.9	1.7 2.4	V	$I_F = 20A, T_J = 25^{\circ}C$ $I_F = 20A, T_J = 175^{\circ}C$
$I_R$	Reverse Current		5 35	100 500	$\mu A$	$V_R = 1200V, T_J = 25^{\circ}C$ $V_R = 1200V, T_J = 175^{\circ}C$
$Q_C$	Total Capacitive Charge		110		nC	$I_F = 20A, dI/dt = 400A/\mu s$ $T_J = 25^{\circ}C, V_R = 800V$
$C$	Total Capacitance		1665 146 123		pF	$V_R = 1V, T_J = 25^{\circ}C, f = 1\text{ MHz}$ $V_R = 400V, T_J = 25^{\circ}C, f = 1\text{ MHz}$ $V_R = 800V, T_J = 25^{\circ}C, f = 1\text{ MHz}$

### Typical Performance

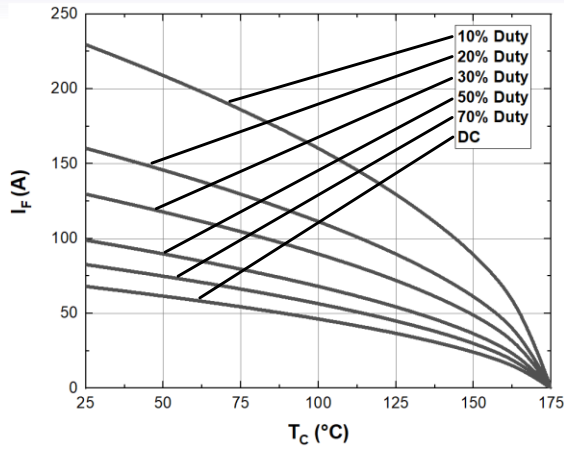


**Fig. 1 Forward Characteristics**

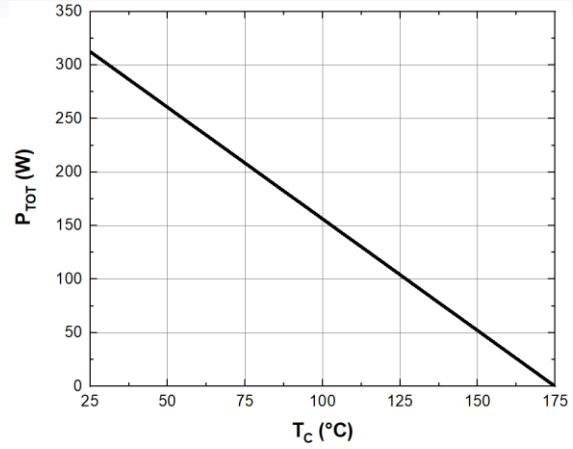


**Fig. 2 Reverse Characteristics**

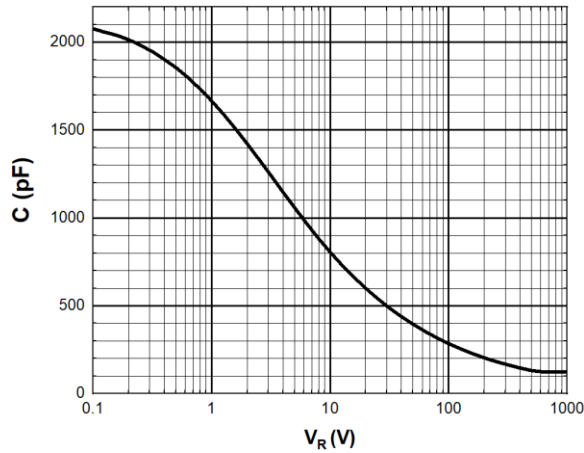
**Typical Performance**



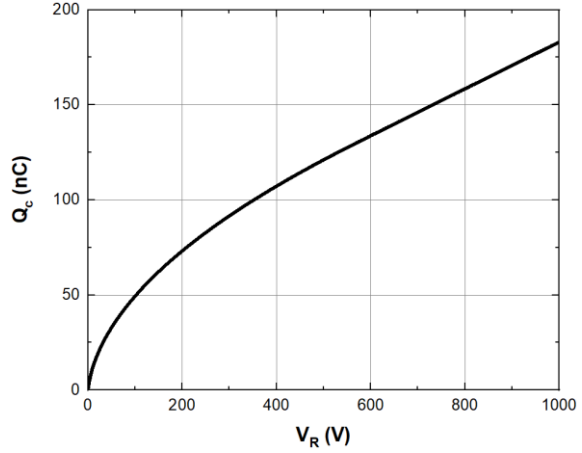
**Fig. 3 Current Derating**



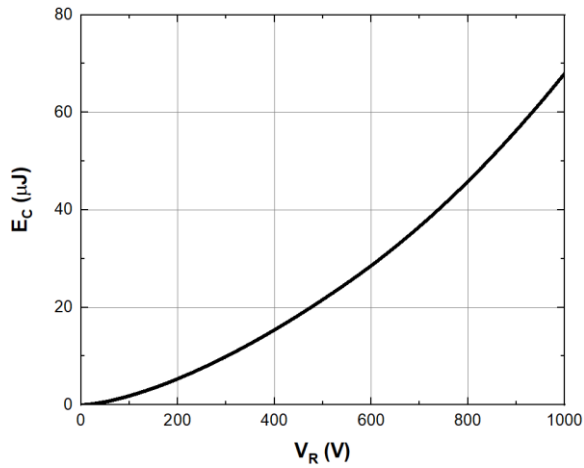
**Fig. 4 Power Derating**



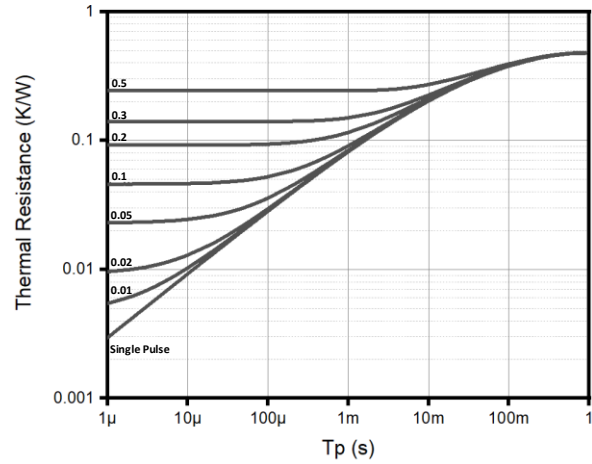
**Fig. 5 Capacitance vs. Reverse Voltage**



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

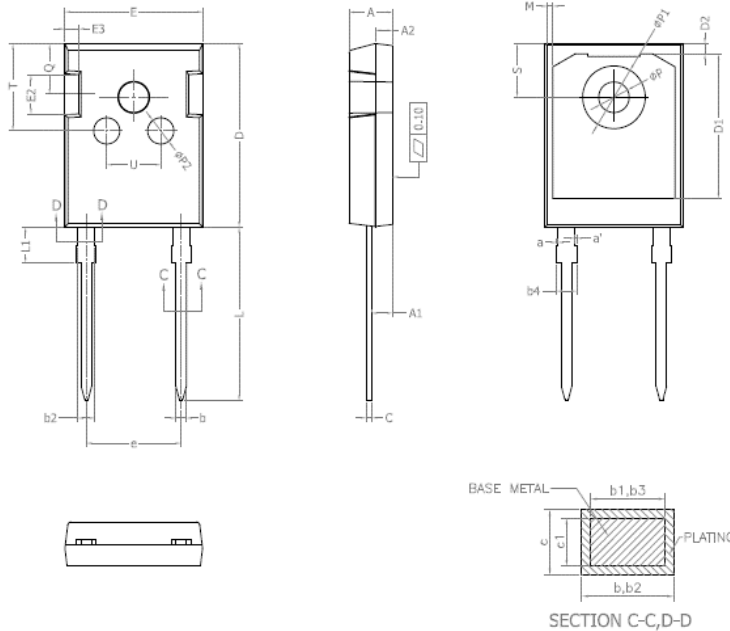


**Fig. 7 Capacitance stored Energy**



**Fig. 8 Transient Thermal Impedance**

**Package TO-247-2 (Unit: mm)**



COMMON DIMENSIONS  
(UNITS OF MEASURE = MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	4.90	5.00	5.10
A1	2.31	2.41	2.51
A2	1.90	2.00	2.10
a	0	—	0.15
a'	0	—	0.15
b	1.16	—	1.26
b1	1.15	1.2	1.22
b2	1.96	—	2.06
b3	1.95	2.00	2.02
b4	—	—	2.25
c	0.59	—	0.66
c1	0.58	0.60	0.62
D	20.90	21.00	21.10
D1	16.25	16.55	16.85
D2	1.05	1.17	1.35
E	15.70	15.80	15.90
E2	4.40	4.50	4.60
E3	2.40	2.50	2.60
e	—	10.872 BSC	—
L	19.80	19.92	20.10
L1	—	—	4.30
M	0.35	—	0.95
P	3.40	3.50	3.60
P1	7.00	—	7.40
P2	2.40	2.50	2.60
Q	5.60	—	6.00
S	6.05	6.15	6.25
T	9.80	—	10.20
U	6.00	—	6.40

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