

Features:

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

Switching

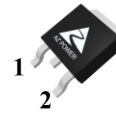
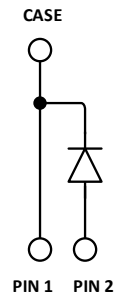
Benefits:

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

Symbol	Value	Unit
V_{RRM}	1200	V
I_F ($T_C = 155^\circ\text{C}$)	5	A
Q_C	27	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	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	17.5	A	$T_C = 25^\circ\text{C}$
		9.5		$T_C = 135^\circ\text{C}$
		5		$T_C = 155^\circ\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	24	A	$T_C = 25^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave
		17		$T_C = 125^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	55	A	$T_C = 25^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave
		51		$T_C = 125^\circ\text{C}$, $T_p = 10\text{ms}$, Half Sine Wave
P_D	Power Dissipation	83	W	$T_C = 25^\circ\text{C}$
		27		$T_C = 125^\circ\text{C}$
$T_{J,max}$	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		1.8		$^{\circ}C/W$

Electrical Characteristics

Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
V_{DC}	DC Blocking Voltage	1200			V	$I_R = 100\mu A, T_J = 25^{\circ}C$
V_F	Forward Voltage		1.55 2.4	1.8 2.7	V	$I_F = 5A, T_J = 25^{\circ}C$ $I_F = 5A, T_J = 175^{\circ}C$
I_R	Reverse Current		1 15	100 500	μA	$V_R = 1200V, T_J = 25^{\circ}C$ $V_R = 1200V, T_J = 175^{\circ}C$
Q_C	Total Capacitive Charge		27		nC	$I_F = 5A, dI/dt = 200A/\mu s$ $T_J = 25^{\circ}C, V_R = 800V$
C	Total Capacitance		262 23 19		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

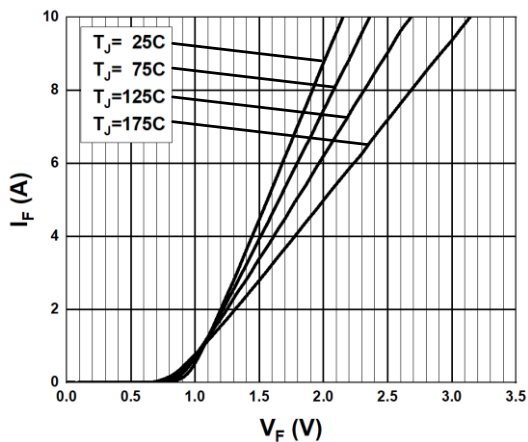


Fig. 1 Forward Characteristics

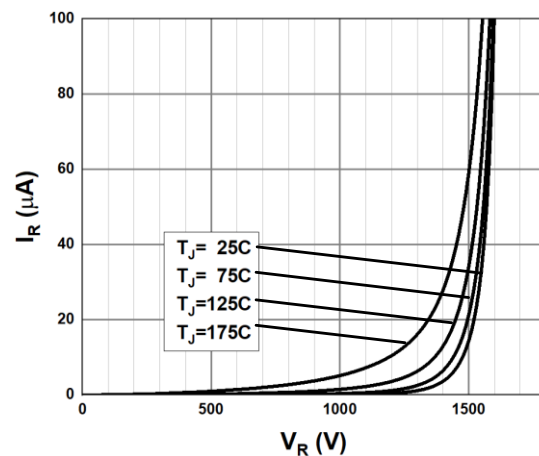


Fig. 2 Reverse Characteristics

Typical Performance

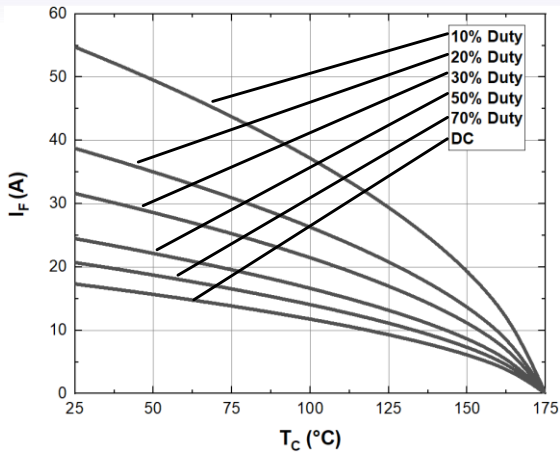


Fig. 3 Current Derating

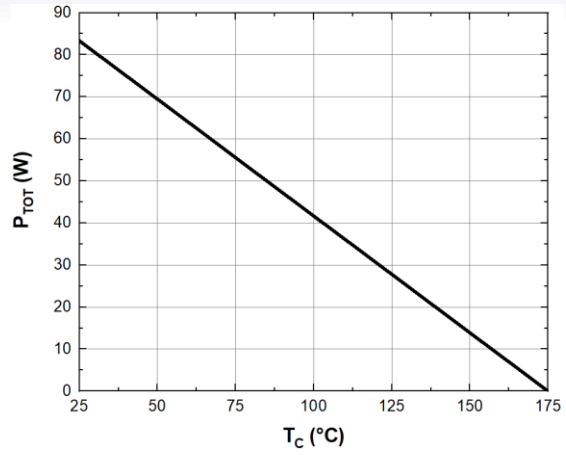


Fig. 4 Power Derating

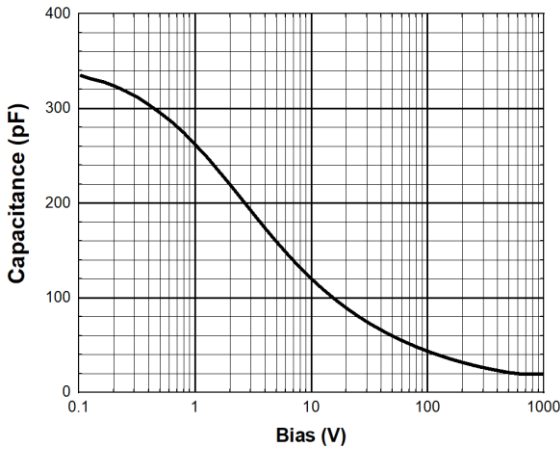


Fig. 5 Capacitance vs. Reverse Voltage

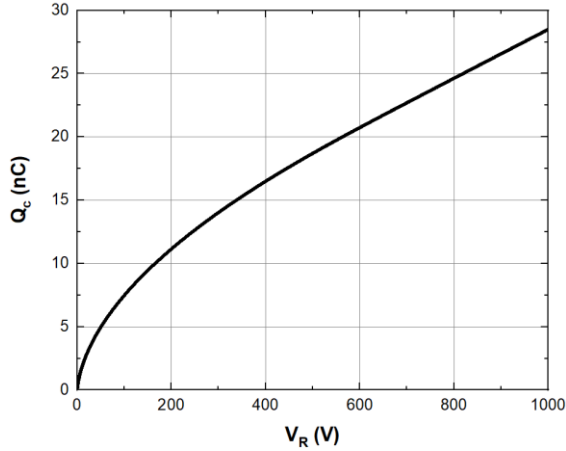


Fig. 6 Recovery Charge vs. Reverse Voltage

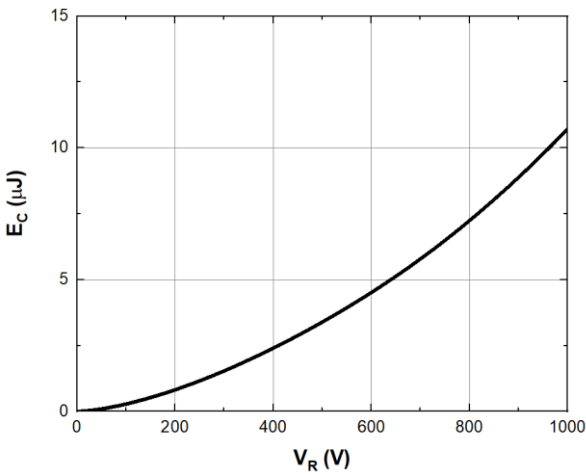


Fig. 7 Capacitance stored Energy

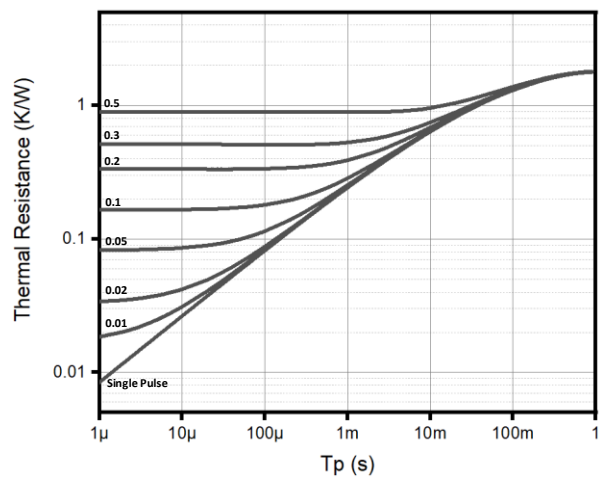
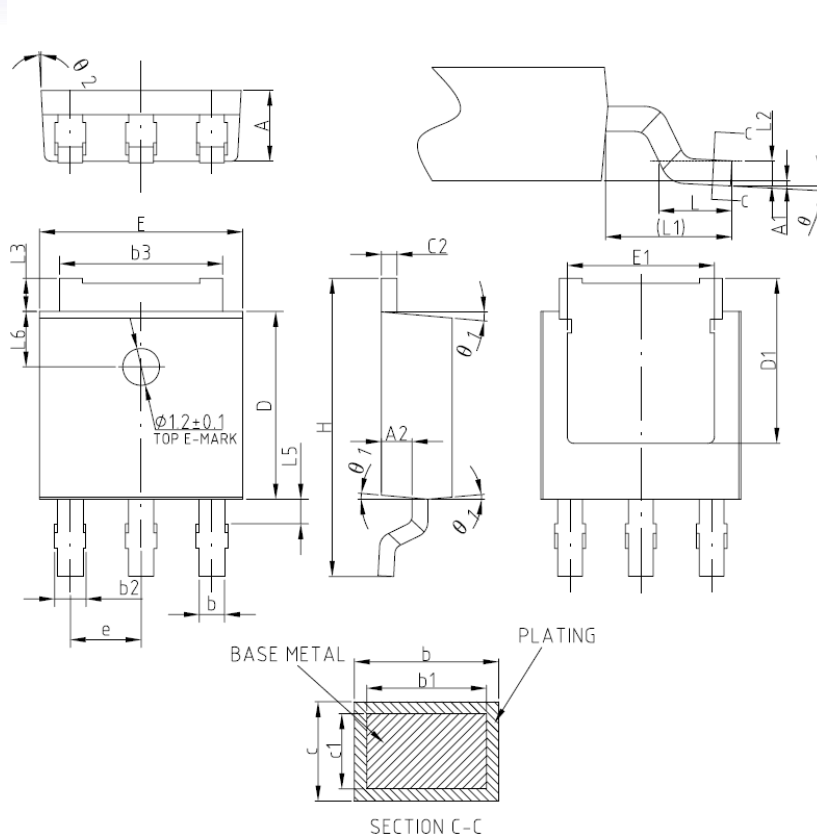


Fig. 8 Thermal Impedance

Package TO-252-2 (Unit: mm)

 COMMON DIMENSIONS
 (UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	2.20	2.30	2.38
A1	0	—	0.10
A2	0.90	1.00	1.10
b	0.77	—	0.89
b1	0.76	0.81	0.86
b2	0.77	—	1.10
b3	5.23	5.33	5.43
c	0.47	—	0.60
c1	0.46	0.51	0.56
c2	0.47	—	0.60
D	6.00	6.10	6.20
D1	5.25	—	—
E	6.50	6.60	6.70
E1	4.70	—	—
e	2.28BSC		
H	9.80	10.10	10.40
L	1.40	1.50	1.70
L1	2.90REF		
L2	0.51BSC		
L3	0.90	—	1.25
L5	0.90	—	1.50
L6	1.80REF		
θ	0°	—	8°
θ 1	3°	5°	7°
θ 2	1°	3°	5°

NOTES:
 ALL DIMENSIONS REFER TO JEDEC STANDARD
 TO-252 AA DO NOT INCLUDE MOLD FLASH
 OR PROTRUSIONS.

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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