

Features:

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

Switching

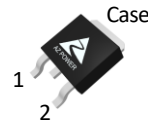
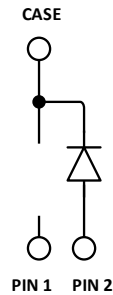
Benefits:

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

Symbol	Value	Unit
V_{RRM}	650	V
I_F ($T_C=155^\circ\text{C}$)	4	A
Q_C	19	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	15	A	$T_C=25^\circ\text{C}$
		6.8		$T_C=135^\circ\text{C}$
		4		$T_C=155^\circ\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	40	A	$T_C=25^\circ\text{C}$, $T_P=10\text{ms}$, Half Sine Wave
		36		$T_C=125^\circ\text{C}$, $T_P=10\text{ms}$, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	53	A	$T_C=25^\circ\text{C}$, $T_P=10\text{ms}$, Half Sine Wave
		48		$T_C=125^\circ\text{C}$, $T_P=10\text{ms}$, Half Sine Wave
P_D	Power Dissipation	54	W	$T_C=25^\circ\text{C}$
		18		$T_C=125^\circ\text{C}$
$T_{J,max}$	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		2.8		$^{\circ}\text{C}/\text{W}$

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		1.35 1.6	1.6 1.9	V	$I_F=4\text{A}$, $T_J=25^{\circ}\text{C}$ $I_F=4\text{A}$, $T_J=175^{\circ}\text{C}$
I_R	Reverse Current		1 5	50 200	μA	$V_R=650\text{V}$, $T_J=25^{\circ}\text{C}$ $V_R=650\text{V}$, $T_J=175^{\circ}\text{C}$
Q_C	Total Capacitive Charge		19		nC	$I_F=4\text{A}$, $di/dt=300\text{A}/\mu\text{s}$ $T_J=25^{\circ}\text{C}$, $V_R=400\text{V}$
C	Total Capacitance		174 33 30		pF	$V_R=1\text{V}$, $T_J=25^{\circ}\text{C}$, $f=1\text{ MHz}$ $V_R=200\text{V}$, $T_J=25^{\circ}\text{C}$, $f=1\text{ MHz}$ $V_R=400\text{V}$, $T_J=25^{\circ}\text{C}$, $f=1\text{ MHz}$

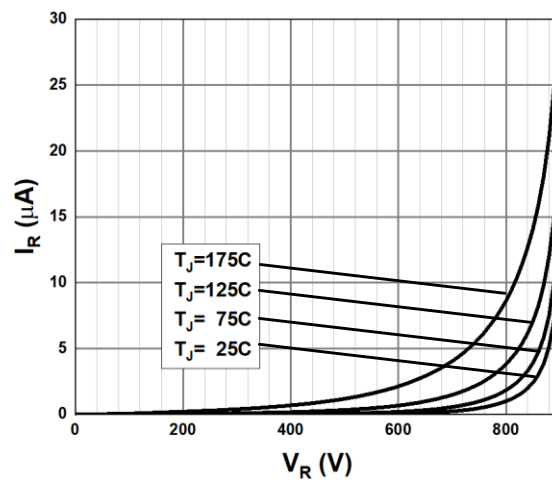
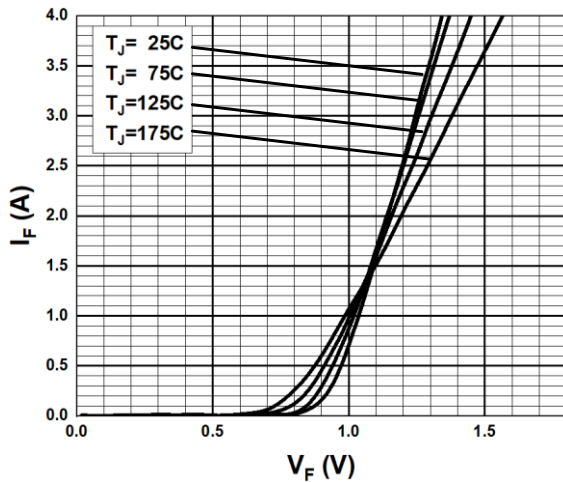
Typical Performance


Fig. 1 Forward Characteristics

Fig. 2 Reverse Characteristics

Typical Performance

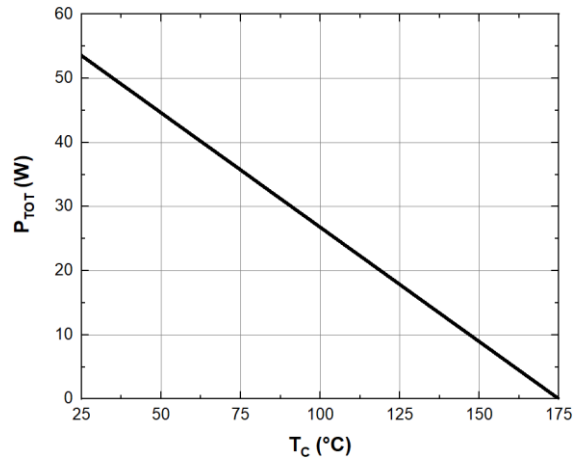
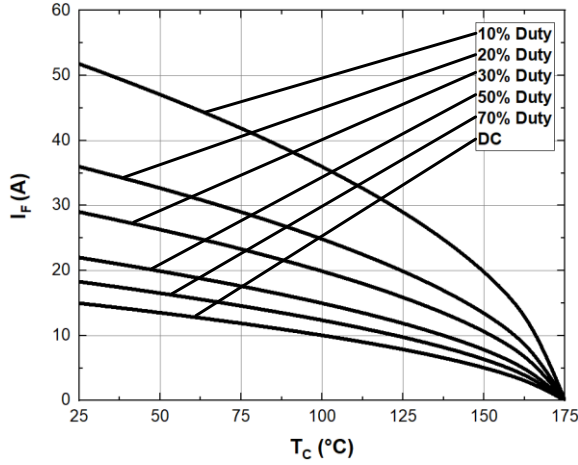


Fig. 3 Current Derating

Fig. 4 Power Derating

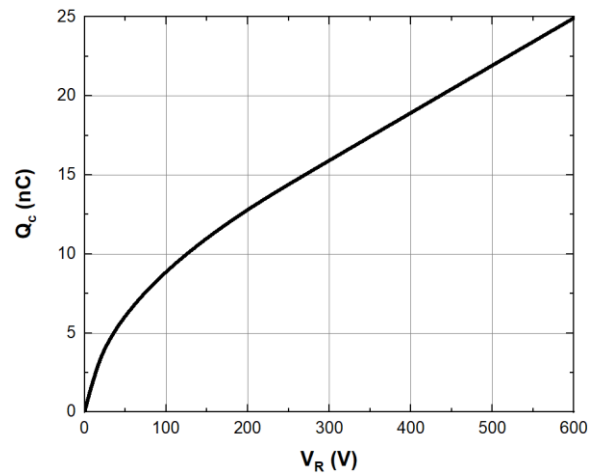
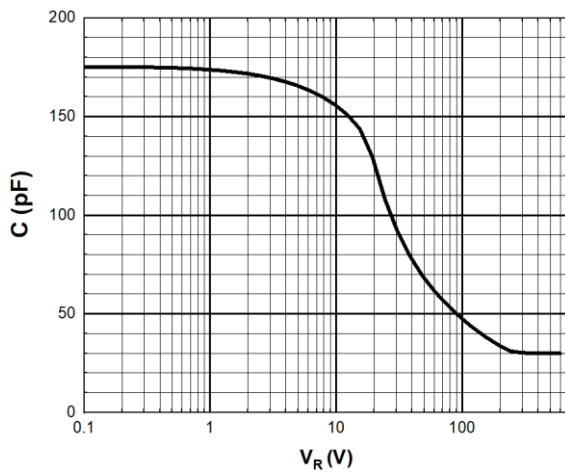


Fig. 5 Capacitance vs. Reverse Voltage

Fig. 6 Recovery Charge vs. Reverse Voltage

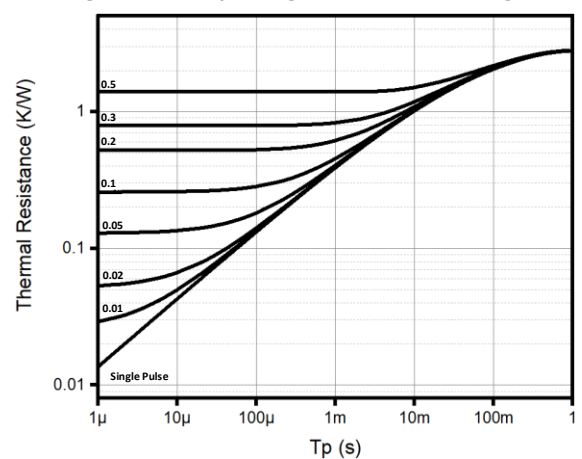
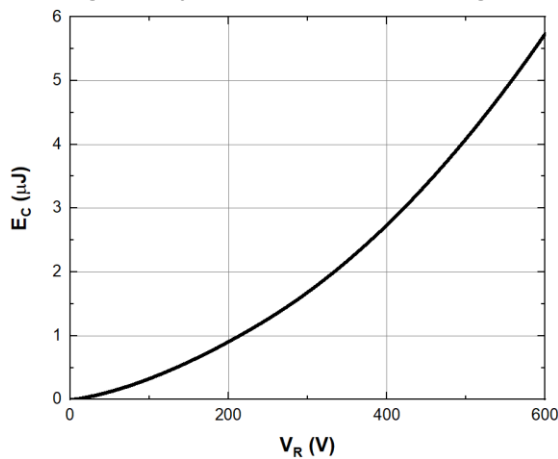
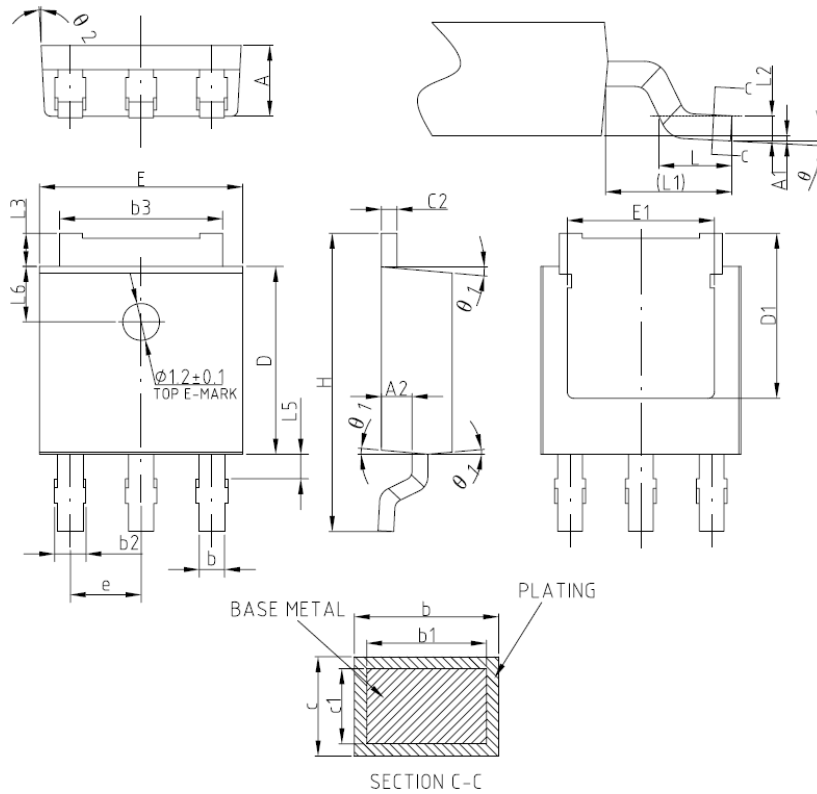


Fig. 7 Capacitance stored Energy

Fig. 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.

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