



Features:

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

Benefits:

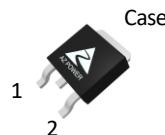
- Unipolar Rectifier
- Minimal switching loss
- Higher Efficiency
- Low cooling requirement

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

Applications:

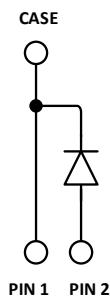
- Switch Mode Power Supply
- Booster diodes in PFC, DC/DC
- AC/DC converters

Outline



TO-252-2

Circuit



Maximum Ratings

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



Thermal characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit
R_{thJC}	Thermal Resistance		3.4		°C/W

Electrical Characteristics

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

Typical Performance

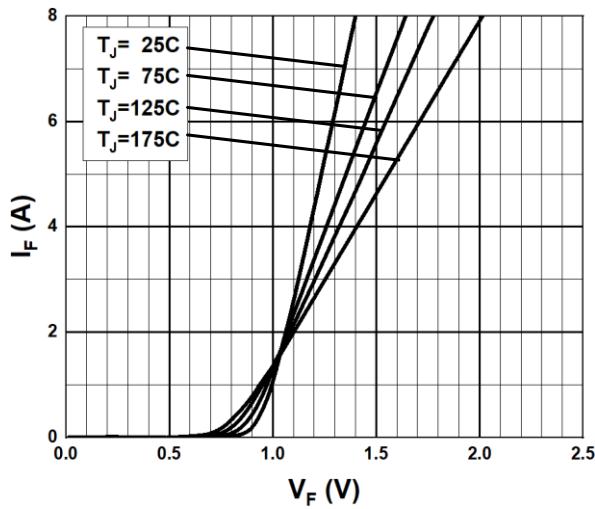


Fig. 1 Forward Characteristics

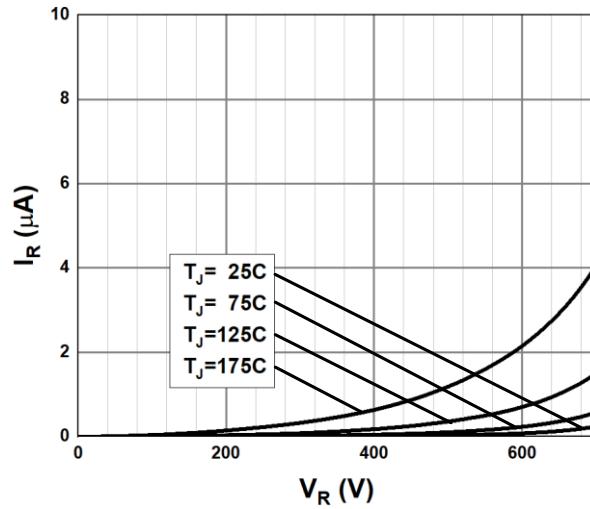


Fig. 2 Reverse Characteristics



Typical Performance

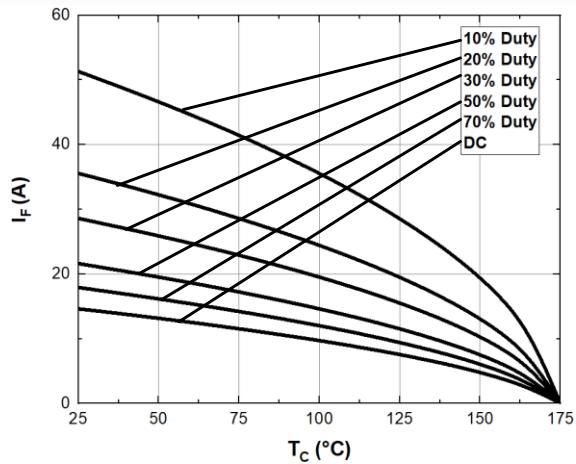


Fig. 3 Current Derating

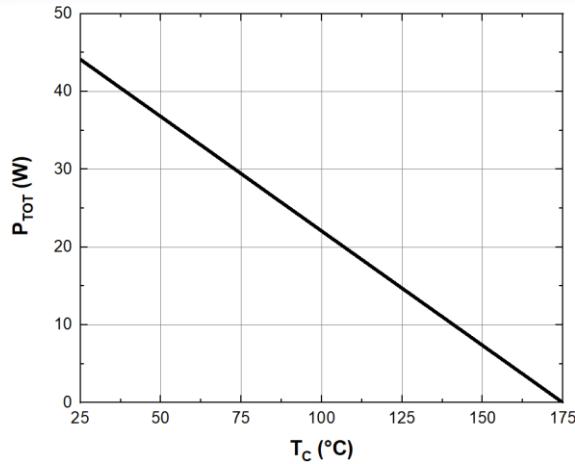


Fig. 4 Power Derating

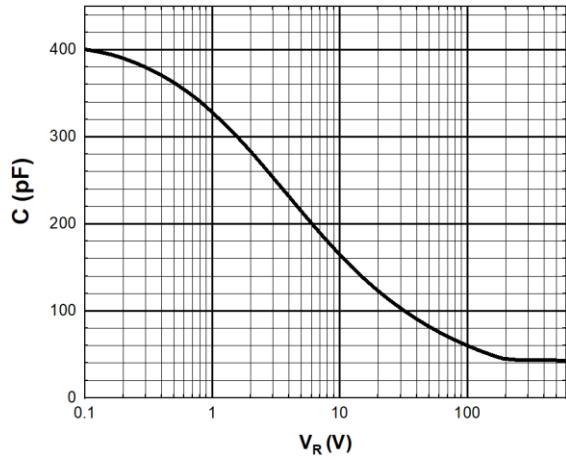


Fig. 5 Capacitance vs. Reverse Voltage

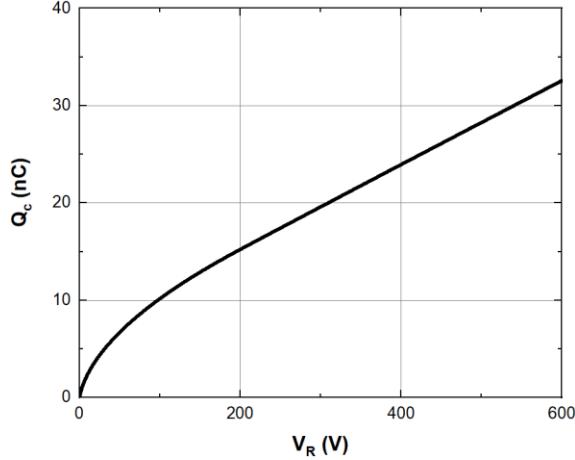


Fig. 6 Recovery Charge vs. Reverse Voltage

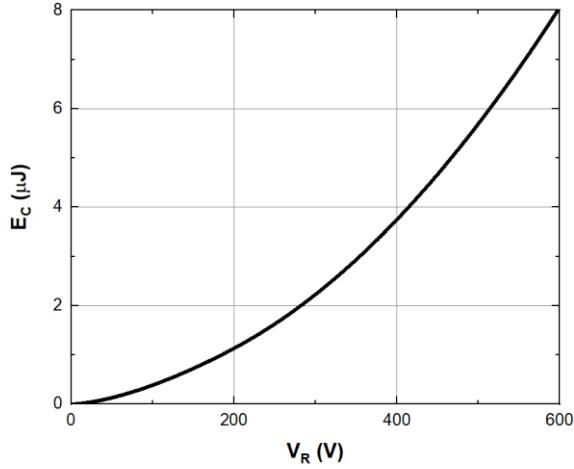
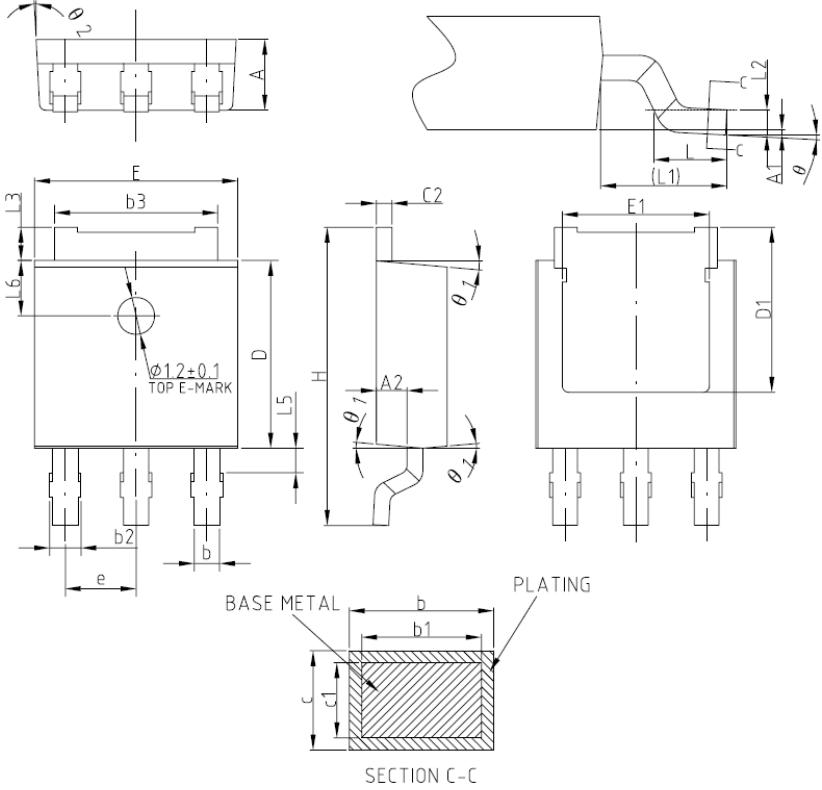


Fig. 7 Capacitance stored Energy

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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