

#### Features:

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

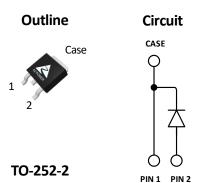
### **Benefits:**

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

Symbol	Value	Unit
$V_{RRM}$	650	V
I <sub>F</sub> (Tc=121ºC)	8	А
Qc	28	nC

# **Applications:**

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



#### **Maximum Ratings**

Symbol	Parameter	Value	Unit	Test Conditions
$V_R$	DC Peak Reverse Voltage	650	V	T <sub>J</sub> =25°C
$V_{RRM}$	Repetitive Peak Reverse Voltage	650	V	T <sub>J</sub> =25°C
$V_{RSM}$	Surge Peak Reverse Voltage	650	V	T <sub>J</sub> =25°C
I <sub>F</sub>	Continuous Forward Current	13.7 10.8 8	А	T <sub>C</sub> =25°C T <sub>C</sub> =75°C T <sub>C</sub> =121°C
I <sub>FRM</sub>	Repetitive Peak Forward Surge Current	56 50	А	$T_C$ =25°C, $T_P$ =10ms, Half Sine Wave Tc=125°C, $T_P$ =10ms, Half Sine Wave
I <sub>FSM</sub>	Non-Repetitive Peak Forward Surge Current	74 67	А	$T_C$ =25°C, $T_P$ =10ms, Half Sine Wave Tc=125°C, $T_P$ =10ms, Half Sine Wave
P <sub>D</sub>	Power Dissipation	44 19	w	T <sub>C</sub> =25°C Tc=110°C
$T_{J,max}$	Operating Junction Temperature	175	°C	
T <sub>stg</sub>	Storage Temperature Range	-55 to 175	°C	

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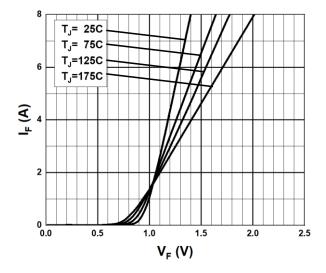
#### **Thermal characteristics**

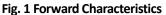
Symbol	Parameter	Min.	Тур.	Max.	Unit
R <sub>thJC</sub>	Thermal Resistance		3.4		°C/W

#### **Electrical Characteristics**

Symbol	Parameter	Value		11	Total Constitutions		
		Min.	Тур.	Max.	Unit	Test Conditions	
$V_{DC}$	DC Blocking Voltage	650			V	I <sub>R</sub> =100μA, Τ <sub>J</sub> =25°C	
V	Forward Voltage		1.4	1.7	V	I <sub>F</sub> =8A, T <sub>J</sub> =25°C	
VF	V <sub>F</sub> Forward Voltage	2.0	2.4	V	I <sub>F</sub> =8A, T <sub>J</sub> =175°C		
	Reverse Current 1 30 μΑ 10 100		V <sub>R</sub> =650V, T <sub>J</sub> =25°C				
I <sub>R</sub>			10	100	μΑ	V <sub>R</sub> =650V, T <sub>J</sub> =175°C	
	Tatal Canadition Change		20		nC	6	I <sub>F</sub> =8A, dI/dt=400A/μs
Q <sub>C</sub> T	Total Capacitive Charge		28			T <sub>J</sub> =25°C, V <sub>R</sub> =400V	
			329			V <sub>R</sub> =1V, T <sub>J</sub> =25°C, f=1 MHz	
С	Total Capacitance		45		pF	$V_R$ =200V, $T_J$ =25°C, f=1 MHz	
			43			V <sub>R</sub> =400V, T <sub>J</sub> =25°C, f=1 MHz	

## **Typical Performance**





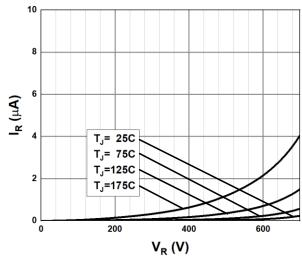
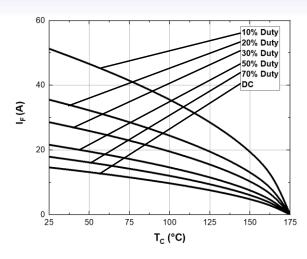


Fig. 2 Reverse Characteristics

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# **Typical Performance**



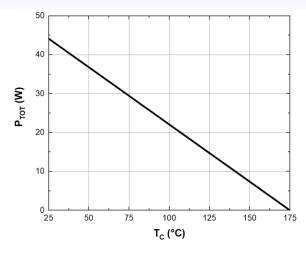


Fig. 3 Current Derating

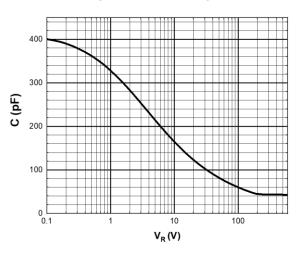


Fig. 4 Power Derating

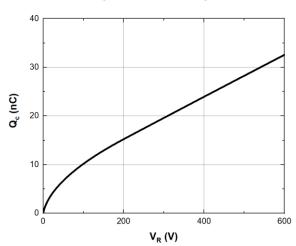


Fig. 5 Capacitance vs. Reverse Voltage

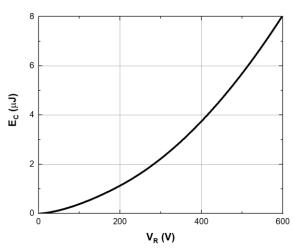


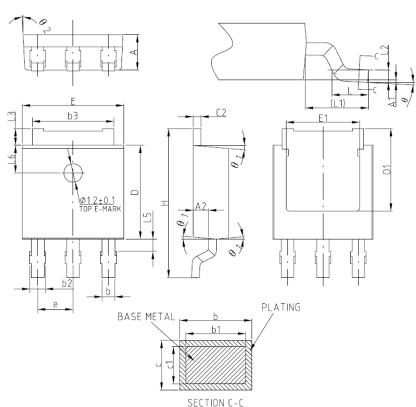
Fig. 6 Recovery Charge vs. Reverse Voltage

Fig. 7 Capacitance stored Energy

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# Package TO-252-2 (Unit: mm)



COMMON DIMENSIONS (UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX			
Α	2.20	2.30	2.38			
A1	0	_	0.10			
A2	0.90	1.00	1.10			
Ь	0.77	-	0.89			
b1	0.76	0.81	0.86			
b2	0.77	-	1.10			
b3	5.23	5.33	5.43			
С	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					
Н	9.80	9.80 10.10				
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° 5°			
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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