Features

- 1.2kV Schottky Rectifier
- Zero Reverse Recovery Current
- High-Frequency Operation
- Temperature-Independent Switching
- Extremely Fast Switching
- Positive Temperature Coefficient on V_F

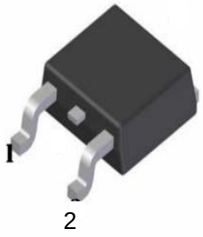
Benefits

- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- Higher Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

Applications

- Switch Mode Power Supplies (SMPS)
- Boost Diodes in PFC or DC/DC stages
- Free Wheeling Diodes in Inverter stages
- LED Lighting Power Supplies
- AC/DC Converters

Package



Maximum Ratings (T_C=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V		
V_{RSM}	Surge Peak Reverse Voltage	1300	V		
V_{DC}	DC Blocking Voltage	1200	V		
I_F	Maximum DC Current	10 5 2	A	T_C=25°C T_C=135°C T_C=165°C	Fig. 3
I_{FRM}	Repetitive Peak Forward Surge Current	13 8.4	A	T_C=25°C, t_P=10 ms, Half Sine pulse T_C=110°C, t_P=10 ms, Half Sine pulse	
I_{FSM}	Non-Repetitive Peak Forward Surge Current	19 16.5	A	T_C=25°C, t_P=10 ms, Half Sine pulse T_C=110°C, t_P=10 ms, Half Sine pulse	Fig. 8
$I_{F,Max}$	Non-Repetitive Peak Forward Current	200 160	A	T_C=25°C, t_P=10 μs, Pulse T_C=110°C, t_P=10 μs, Pulse	Fig. 8
P_{tot}	Power Dissipation	60 26	W	T_C=25°C T_C=110°C	Fig. 4
dV/dt	Diode dV/dt ruggedness	200	V/ns	V_R=0-650V	
$\int i^2dt$	i^2t value	1.8 1.4	A^2s	T_C=25°C, t_P=10 ms T_C=110°C, t_P=10 ms	
T_J , T_{stg}	Operating Junction and Storage Temperature	-55 to +175	°C		

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.4 1.9	1.8 3	V	I_F = 2 A T_J=25°C I_F = 2 A T_J=175°C	Fig. 1
I_R	Reverse Current	10 40	50 150	μA	V_R = 1200 V T_J=25°C V_R = 1200 V T_J=175°C	Fig. 2
Q_C	Total Capacitive Charge	11		nC	V_R = 800 V, I_F = 2A di/dt = 200 A/μs T_J = 25°C	Fig. 5
C	Total Capacitance	167 11 8		pF	V_R = 0 V, T_J = 25°C, f = 1 MHz V_R = 400 V, T_J = 25°C, f = 1 MHz V_R = 800 V, T_J = 25°C, f = 1 MHz	Fig. 6
E_C	Capacitance Stored Energy	3.2		μJ	V_R = 800 V	Fig. 7

Note: This is a majority carrier diode, so there is no reverse recovery charge.

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	2.5	°C/W	Fig. 9

Typical Performance

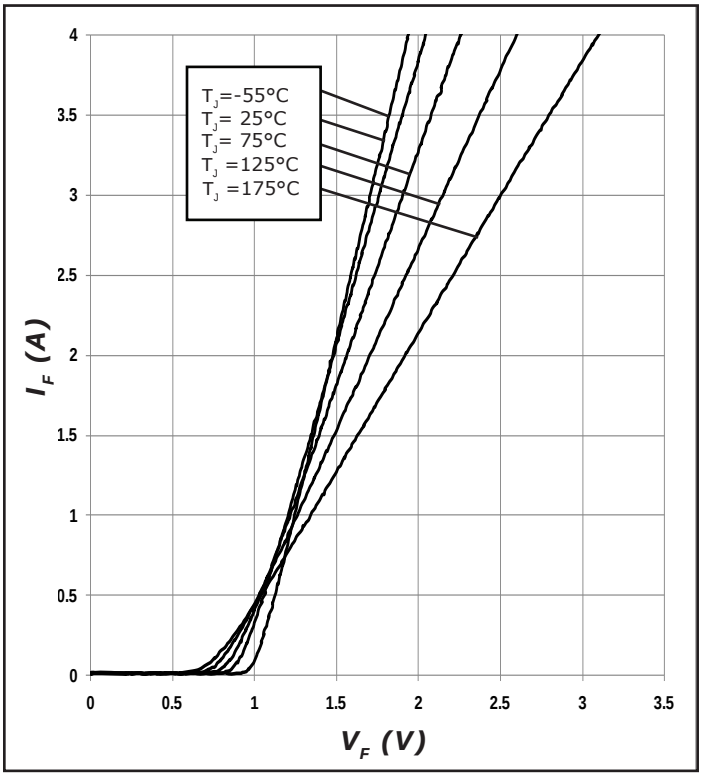


Figure 1. Forward Characteristics

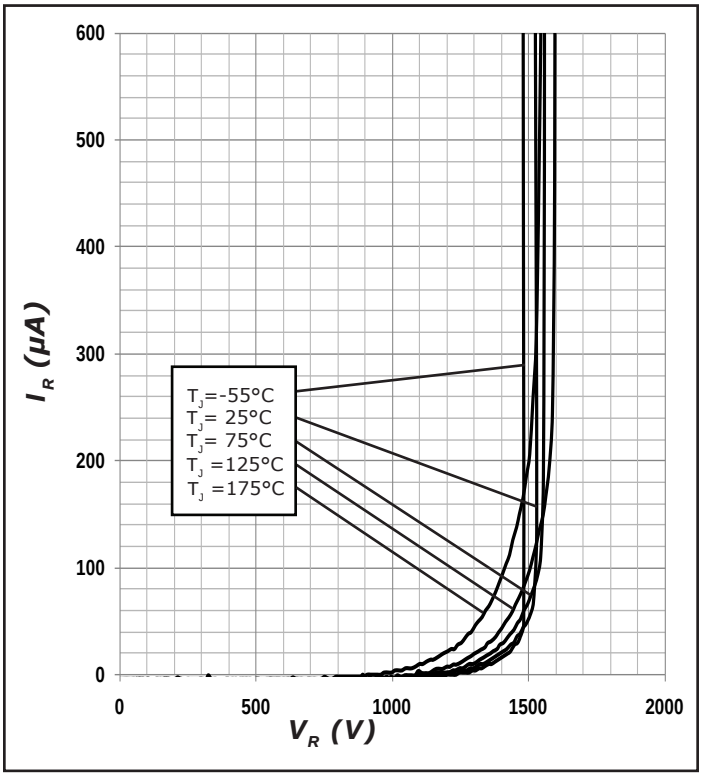


Figure 2. Reverse Characteristics

Typical Performance

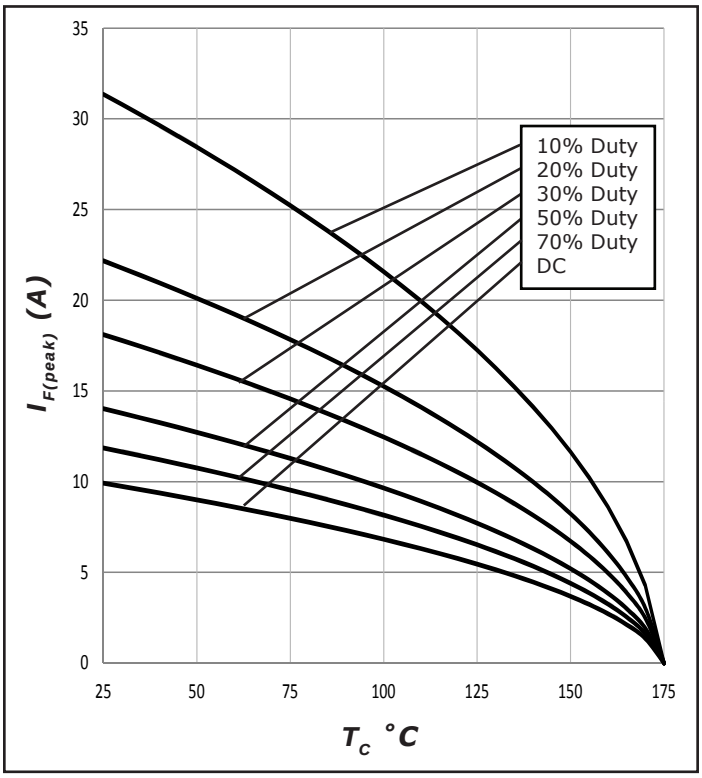


Figure 3. Current Derating

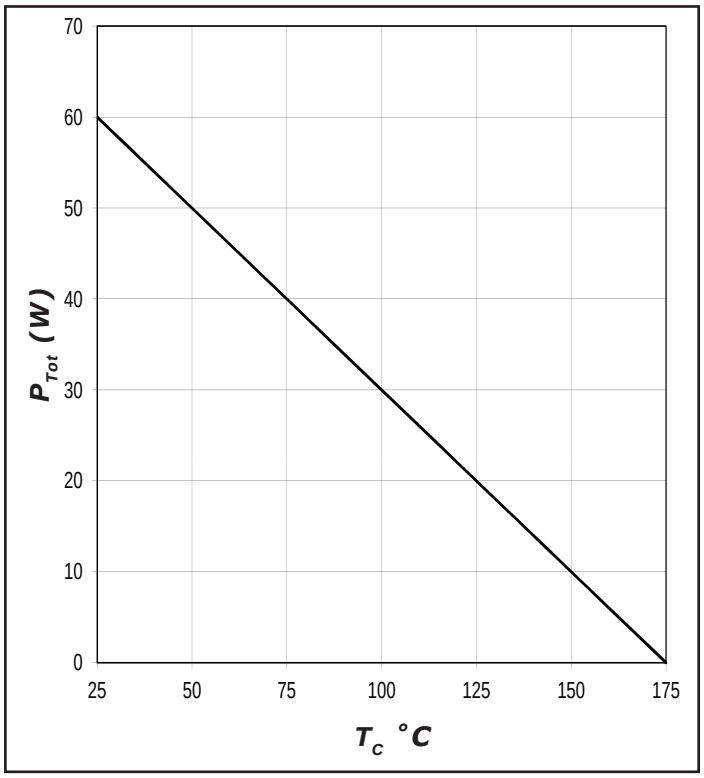


Figure 4. Power Derating

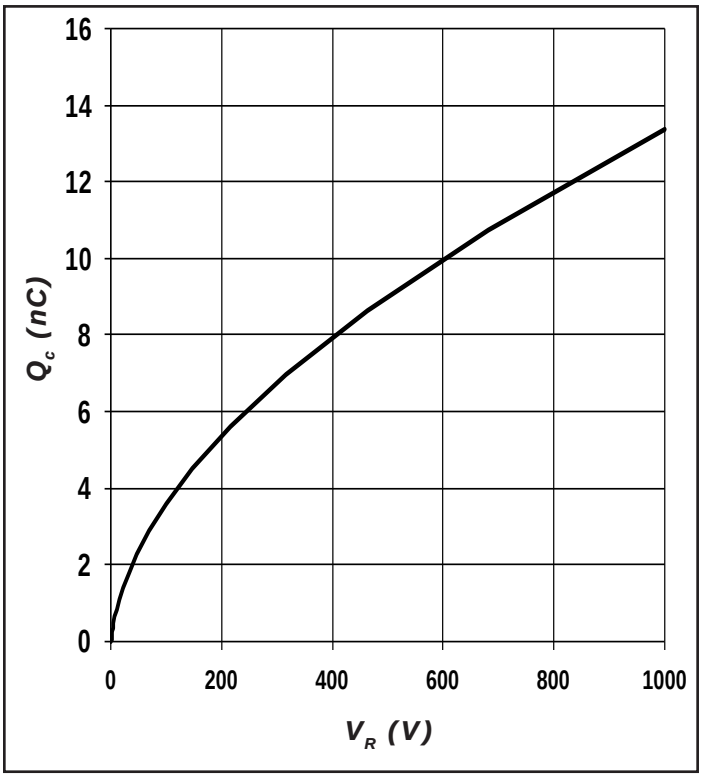


Figure 5. Recovery Charge vs. Reverse Voltage

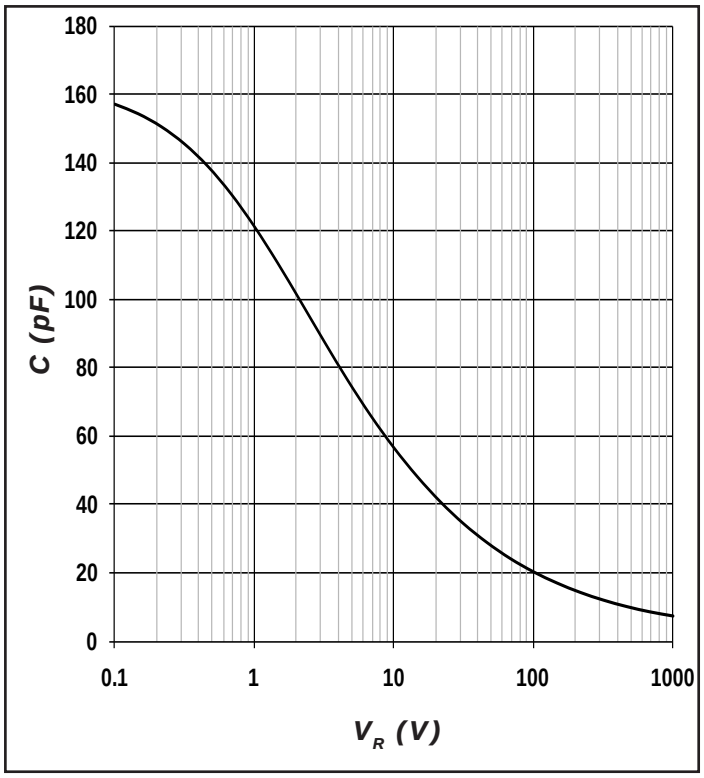


Figure 6. Capacitance vs. Reverse Voltage

Typical Performance

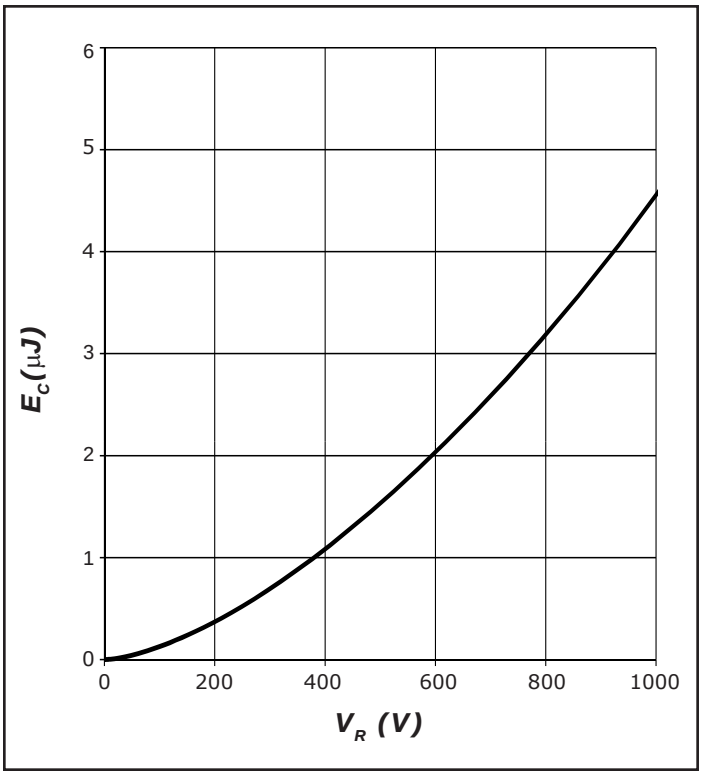


Figure 7. Typical Capacitance Stored Energy

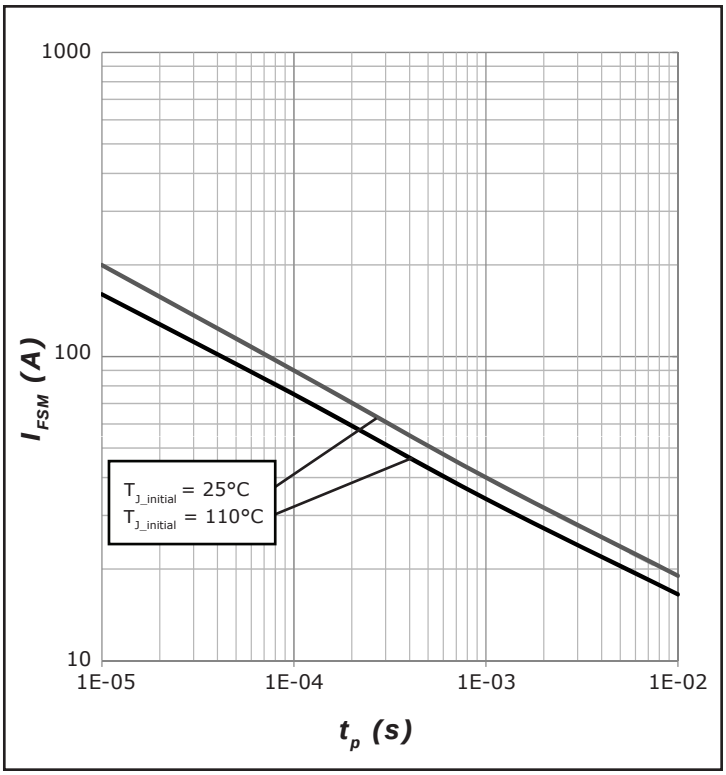


Figure 8. Non-repetitive peak forward surge current versus pulse duration (sinusoidal waveform)

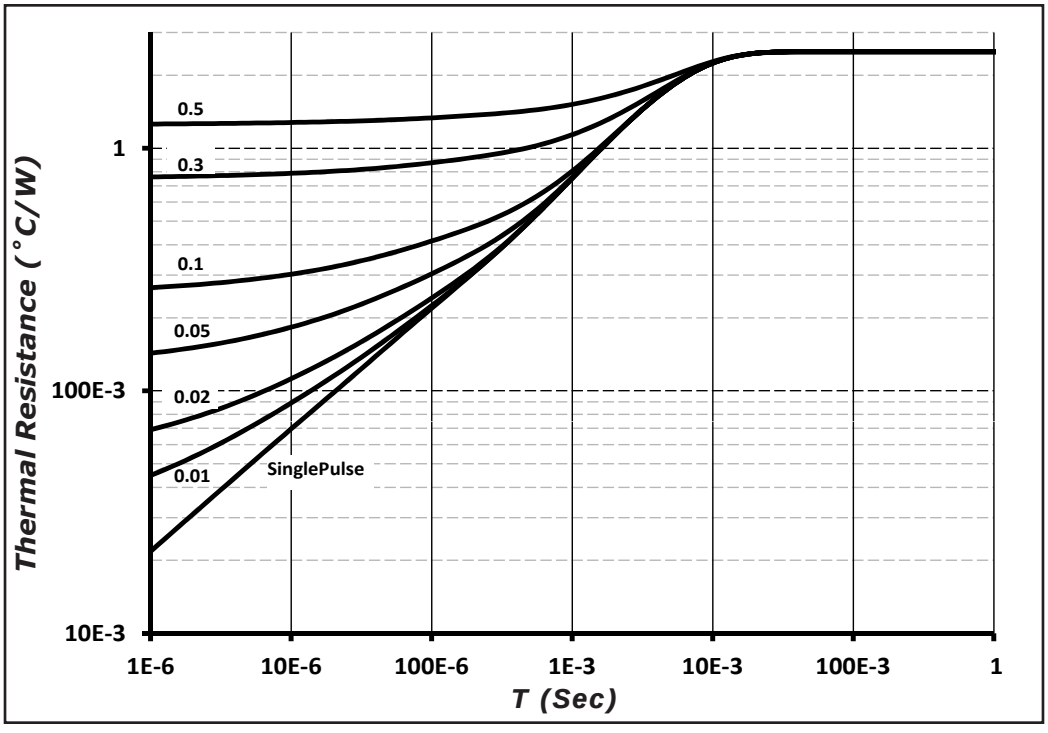
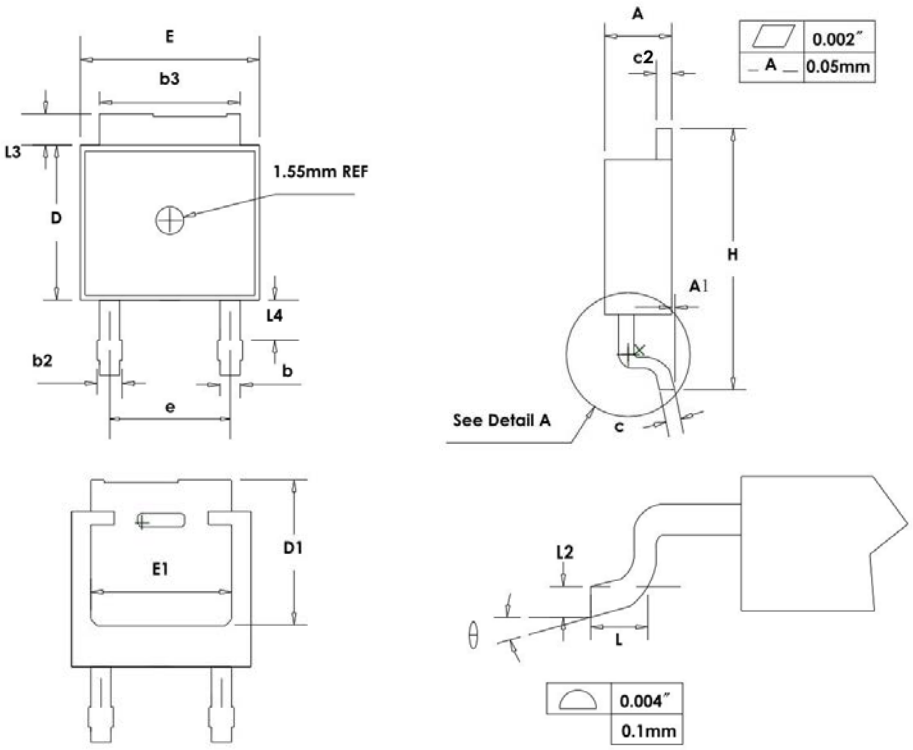


Figure 9. Transient Thermal Impedance

Package Dimensions

Package TO-252-2



SYMBOL	MILLIMETERS	
	MIN	MAX
A	2.159	2.413
A1	0	0.13
b	0.64	0.89
b2	0.653	1.143
b3	5.004	5.6
c	0.457	0.61
c2	0.457	0.864
D	5.867	6.248
D1	5.21	-
E	6.35	7.341
E1	4.32	-
e	4.58 BSC	
H	9.65	10.414
L	1.106	1.78
L2	0.51 BSC	
L3	0.889	1.27
L4	0.64	1.01
θ	0°	8°