

Features:

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

Benefits:

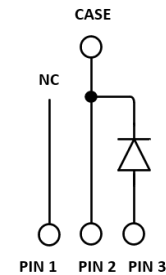
- Unipolar Rectifier
- Minimal switching loss
- Higher Efficiency
- Low cooling requirement

Symbol	Value	Unit
V_{RRM}	1200	V
I_F ($T_C=154^\circ\text{C}$)	20	A
Q_C	110	nC

Applications:

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

Outline

TO-247-3
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 Voltage	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	64 30 20	A	$T_C = 25^\circ\text{C}$ $T_C = 135^\circ\text{C}$ $T_C = 154^\circ\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	222 178	A	$T_C = 25^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$ $T_C = 125^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$
I_{FSM}	Non-Repetitive Peak Forward Surge Current	261 235	A	$T_C = 25^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$ $T_C = 125^\circ\text{C}, T_P = 10\text{ms}, \text{Half Sine Wave}$
P_D	Power Dissipation	278 92.5	W	$T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$
$T_{J,max}$	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		0.54		$^{\circ}C/W$

Electrical Characteristics

Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
V_{DC}	DC Blocking Voltage	1200			V	$I_R = 400\mu A, T_J = 25^{\circ}C$
V_F	Forward Voltage		1.4 1.9	1.7 2.4	V	$I_F = 20A, T_J = 25^{\circ}C$ $I_F = 20A, T_J = 175^{\circ}C$
I_R	Reverse Current		5 35	100 500	μA	$V_R = 1200V, T_J = 25^{\circ}C$ $V_R = 1200V, T_J = 175^{\circ}C$
Q_C	Total Capacitive Charge		110		nC	$I_F = 20A, dI/dt = 400A/\mu s$ $T_J = 25^{\circ}C, V_R = 800V$
C	Total Capacitance		1665 146 123		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

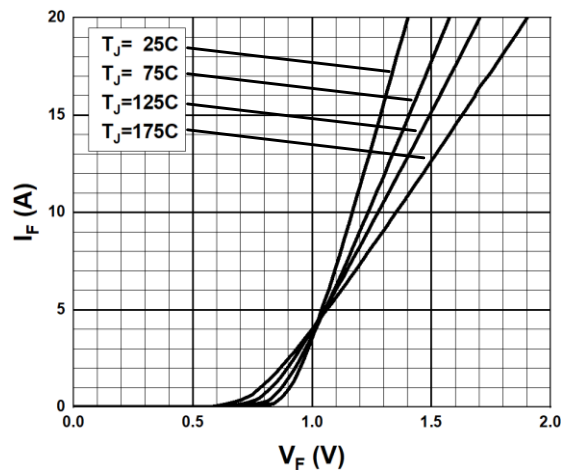


Fig. 1 Forward Characteristics

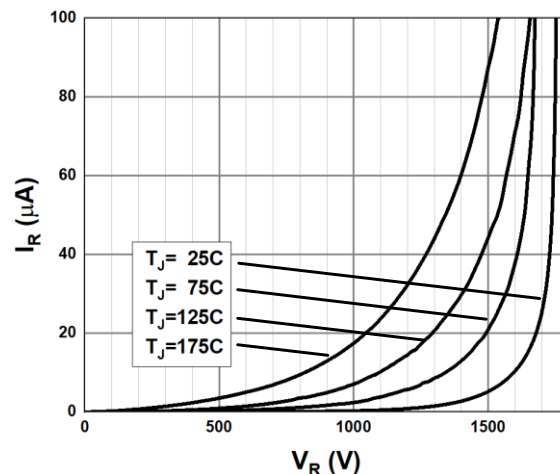


Fig. 2 Reverse Characteristics

Typical Performance

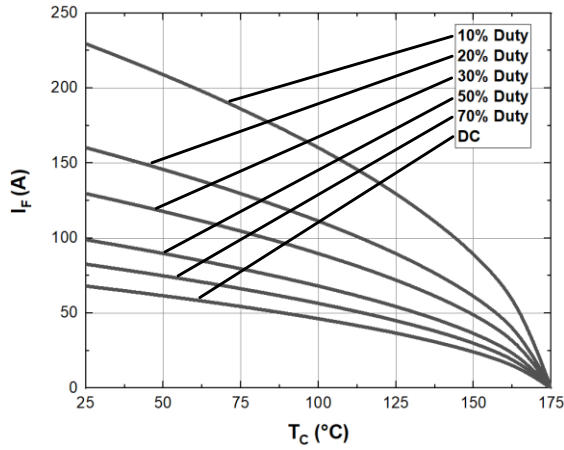


Fig. 3 Current Derating

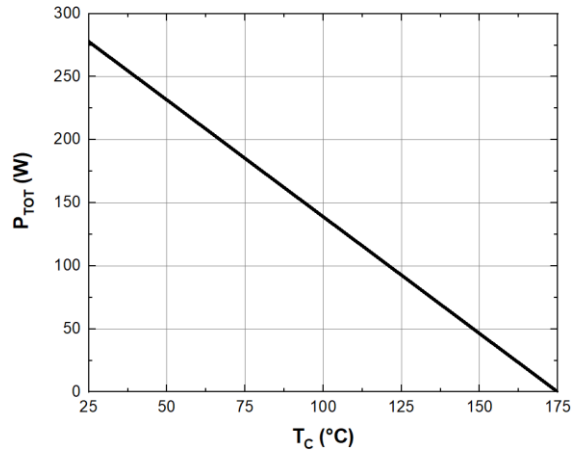


Fig. 4 Power Derating

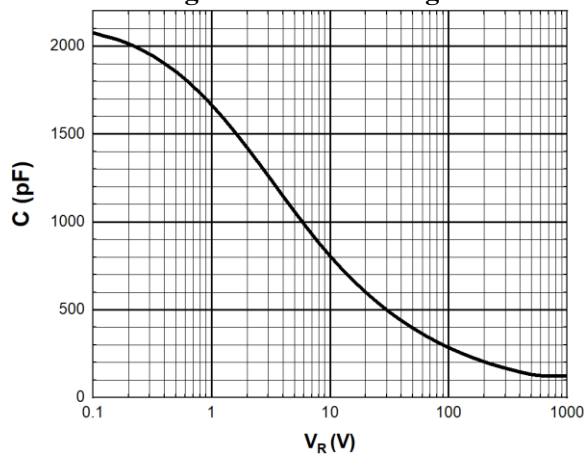


Fig. 5 Capacitance vs. Reverse Voltage

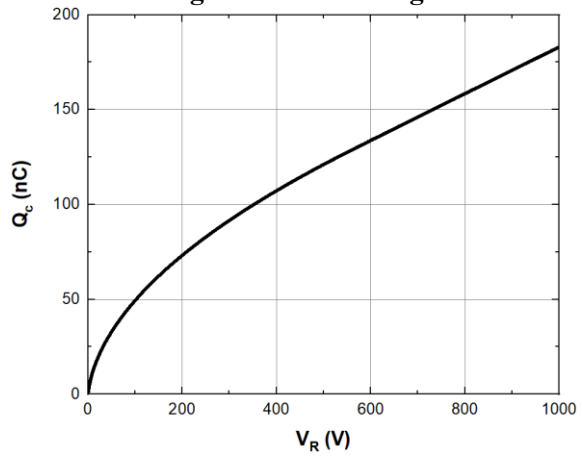


Fig. 6 Recovery Charge vs. Reverse Voltage

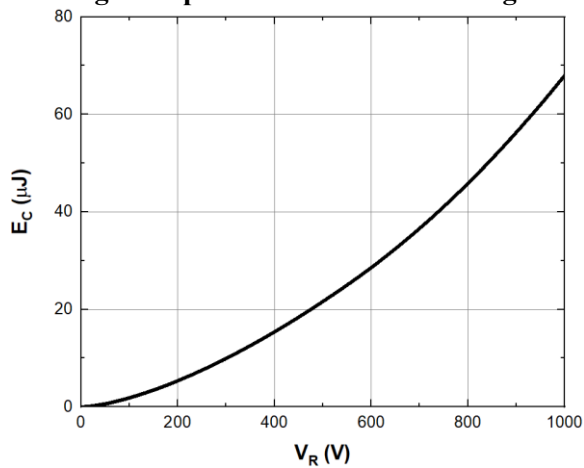


Fig. 7 Capacitance stored Energy

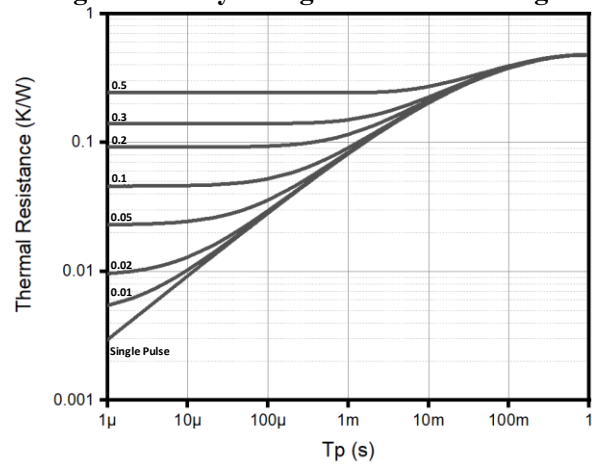
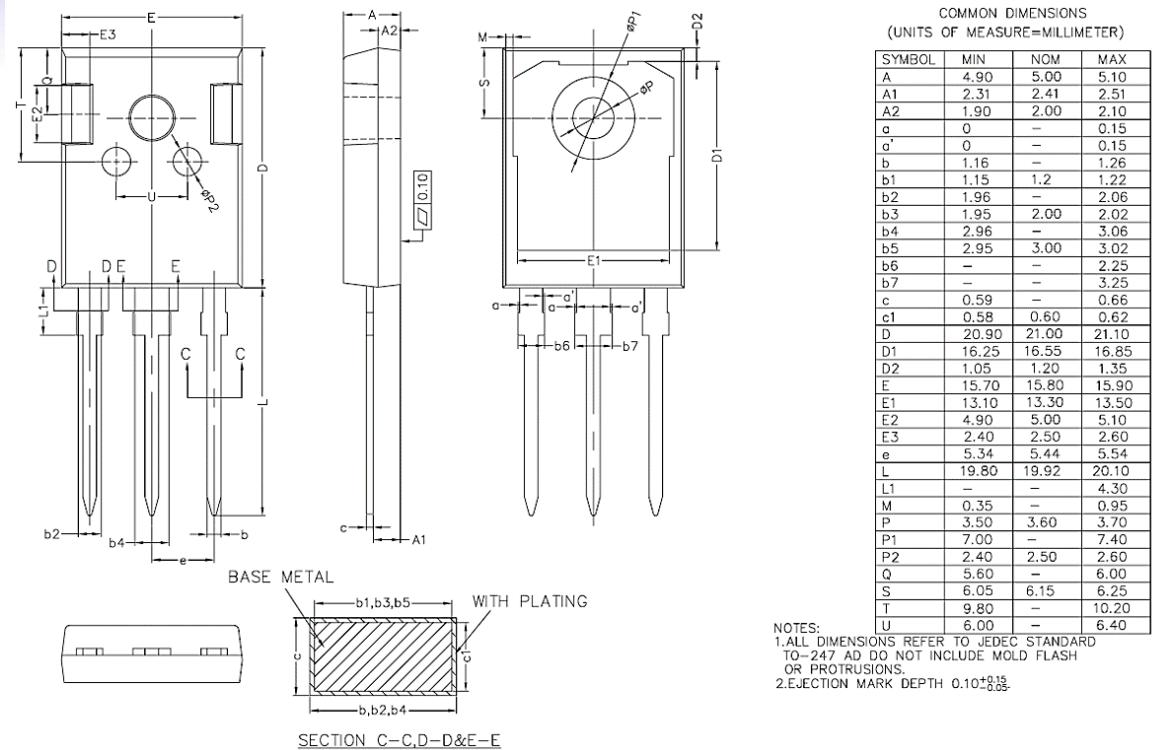


Fig. 8 Transient Thermal Impedance

Package TO-247-3 (Unit: mm)



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