Features:

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

Benefits:

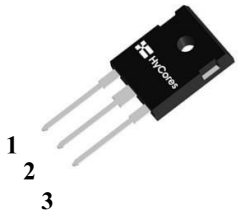
- Unipolar Rectifier
- Minimal switching loss
- Higher Efficiency
- Low cooling requirement

Symbol	Value	Unit
V_{RRM}	1200	V
$I_{F\ (Tc=154℃)}$	20	A
Q_C	110	nC

Applications:

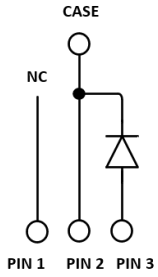
- Switch Mode Power Supply
- Booster diodes in PFC, DC/DC
- AC/DC converters

Outline



TO-247-3

Circuit



Maximum Ratings

Symbol	Parameter	Value	Unit	Test Conditions
V_R	DC Peak Reverse Voltage	1200	V	T_J = 25℃
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V	T_J = 25℃
V_{RSM}	Surge Peak Reverse Voltage	1300	V	T_J = 25℃
I_F	Continuous Forward Current	64 30 20	A	T_C = 25℃ T_C = 135℃ T_C = 154℃
I_{FRM}	Repetitive Peak Forward Surge Current	222 178	A	T_C = 25℃, T_P = 10ms, Half Sine Wave Tc = 125℃, T_P = 10ms, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	261 235	A	T_C = 25℃, T_P = 10ms, Half Sine Wave Tc = 125℃, T_P = 10ms, Half Sine Wave
P_D	Power Dissipation	278 92.5	W	T_C = 25℃ Tc = 125℃
$T_{J,max}$	Operating Junction Temperature	175	℃	
T_{stg}	Storage Temperature Range	-55 to 175	℃	

Thermal characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit
R_{thJC}	Thermal resistance		0.54		°C/W

Electrical Characteristics

Symbol	Parameter	Value			Unit	Test Conditions
		Min.	Typ.	Max.		
V_{DC}	DC Blocking Voltage	1200			V	I_R=400μA, T_J =25°C
V_F	Forward Voltage		1.4 1.9	1.7 2.4	V	I_F=20A, T_J=25°C I_F=20A, T_J=175°C
I_R	Reverse Current		5 35	100 500	μA	V_R=1200V, T_J =25°C V_R=1200V, T_J =175°C
Q_C	Total Capacitive Charge		110		nC	I_F=20A, dI/dt=400A/μs T_J =25°C, V_R=800V
C	Total Capacitance		1665 146 123		pF	V_R=1V, T_J =25°C, f=1 MHz V_R=400V, T_J =25°C, f=1 MHz V_R=800V, T_J =25°C, f=1 MHz

Typical Performance

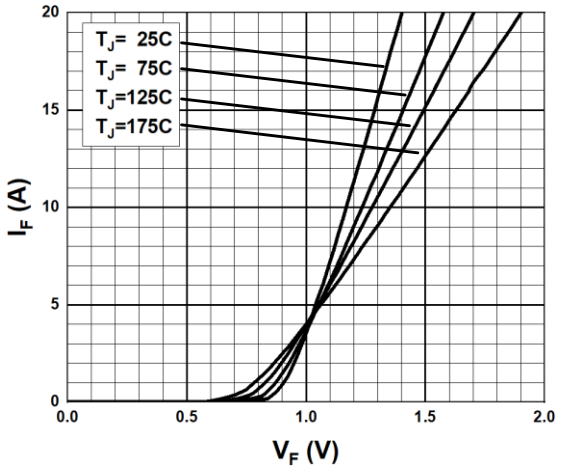


Fig. 1 Forward Characteristics

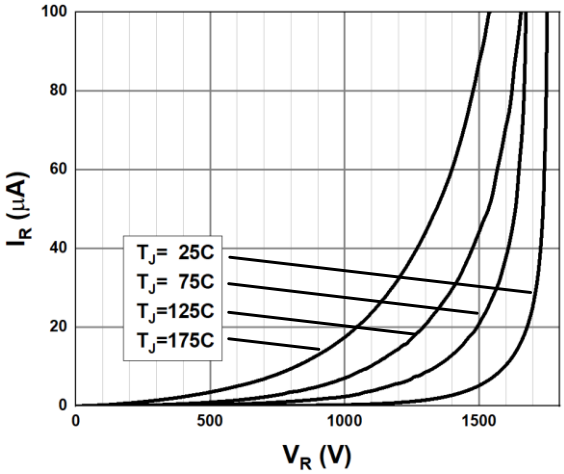


Fig. 2 Reverse Characteristics

Typical Performance

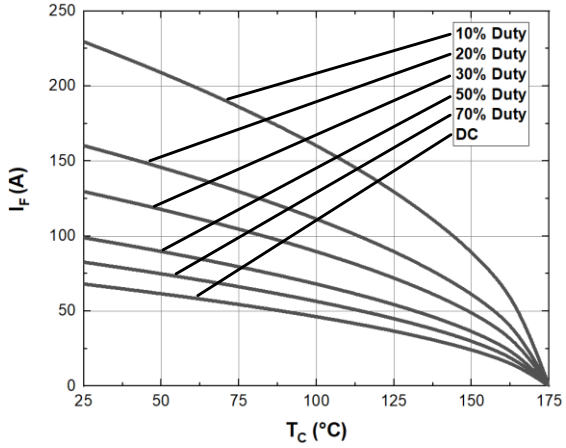


Fig. 3 Current Derating

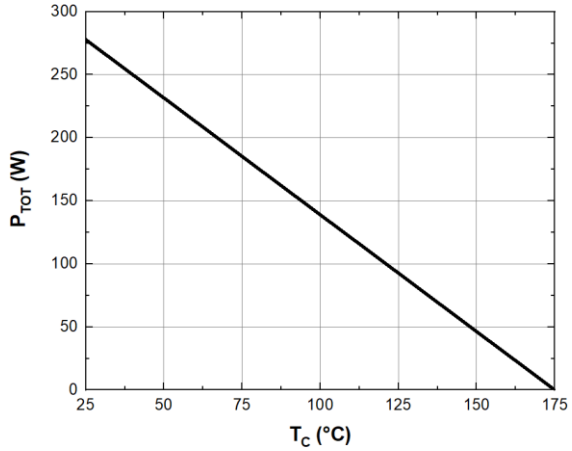


Fig. 4 Power Derating

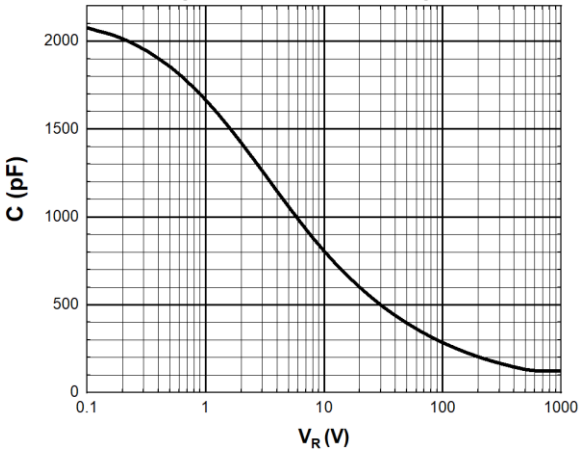


Fig. 5 Capacitance vs. Reverse Voltage

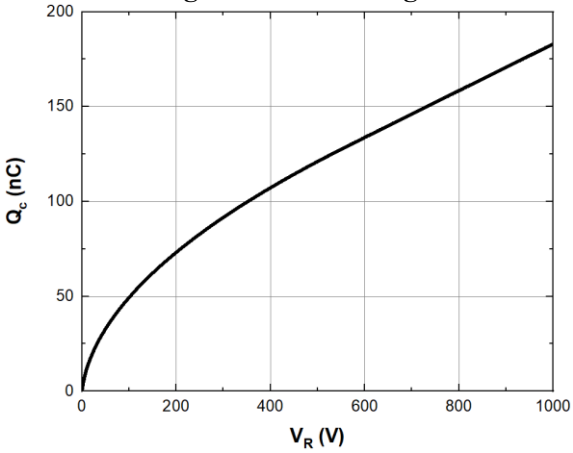


Fig. 6 Recovery Charge vs. Reverse Voltage

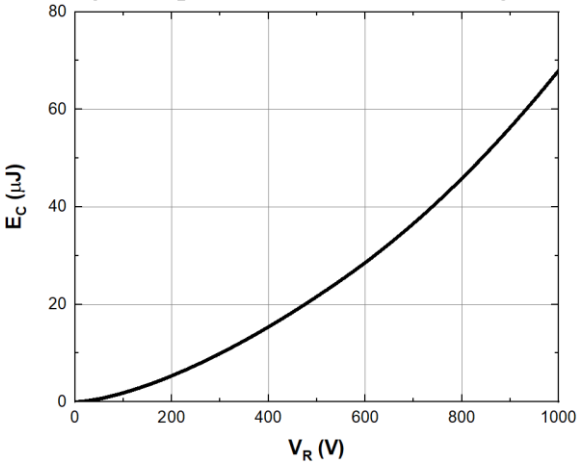


Fig. 7 Capacitance stored Energy

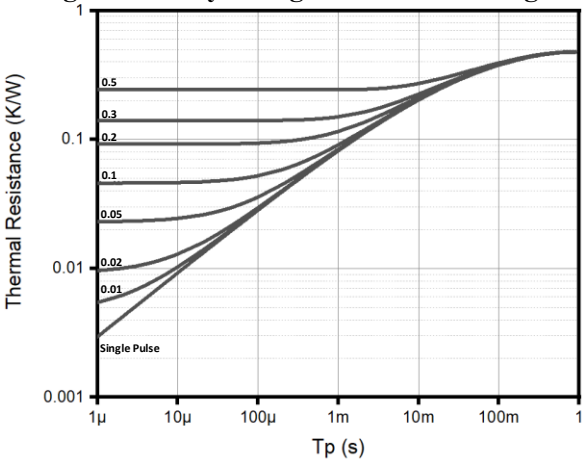
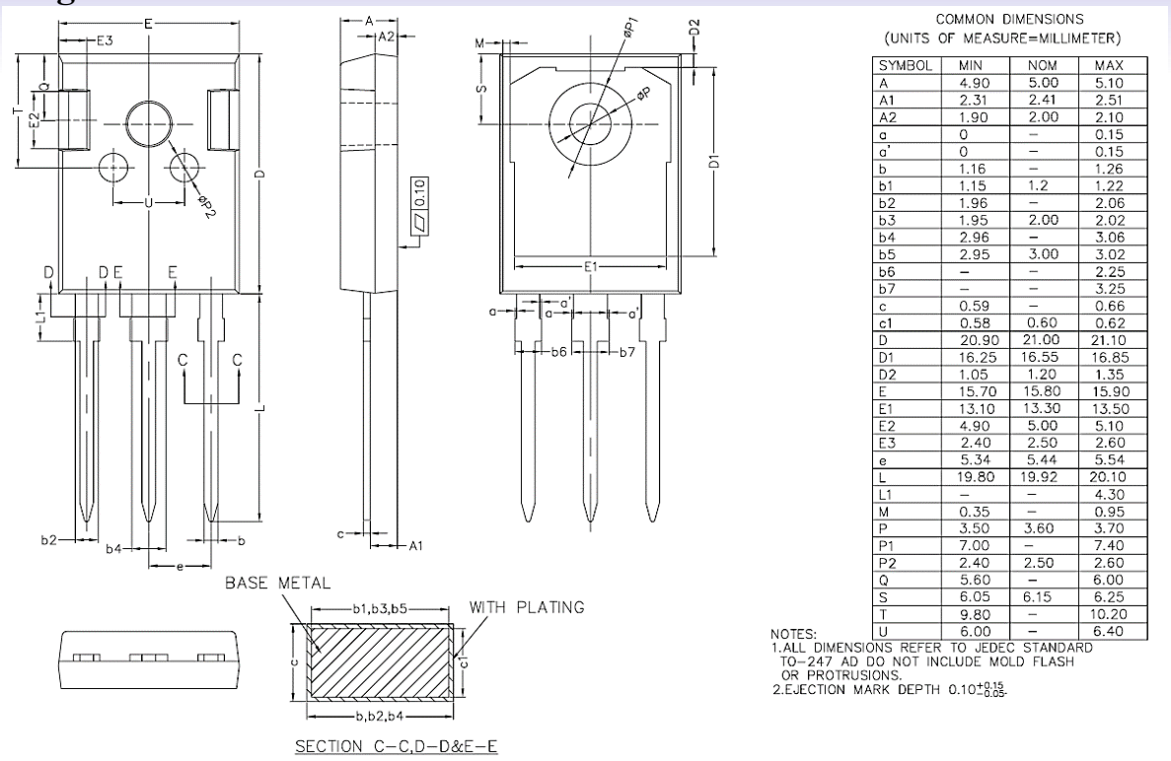


Fig. 8 Transient Thermal Impedance

Package TO-247-3 （Unit: mm）



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	4.90	5.00	5.10
A1	2.31	2.41	2.51
A2	1.90	2.00	2.10
α	0	–	0.15
α'	0	–	0.15
b	1.16	–	1.26
b1	1.15	1.2	1.22
b2	1.96	–	2.06
b3	1.95	2.00	2.02
b4	2.96	–	3.06
b5	2.95	3.00	3.02
b6	–	–	2.25
b7	–	–	3.25
c	0.59	–	0.66
c1	0.58	0.60	0.62
D	20.90	21.00	21.10
D1	16.25	16.55	16.85
D2	1.05	1.20	1.35
E	15.70	15.80	15.90
E1	13.10	13.30	13.50
E2	4.90	5.00	5.10
E3	2.40	2.50	2.60
e	5.34	5.44	5.54
L	19.80	19.92	20.10
L1	–	–	4.30
M	0.35	–	0.95
P	3.50	3.60	3.70
P1	7.00	–	7.40
P2	2.40	2.50	2.60
Q	5.60	–	6.00
S	6.05	6.15	6.25
T	9.80	–	10.20
U	6.00	–	6.40

NOTES:
1. ALL DIMENSIONS REFER TO JEDEC STANDARD TO-247 AD DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS.
2. EJECTION MARK DEPTH $0.10^{+0.15}_{-0.05}$.

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