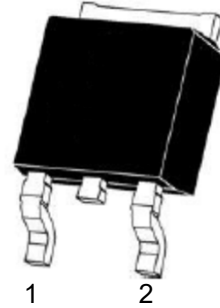
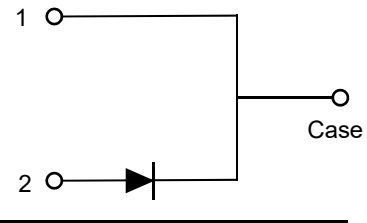


Feature

- 650-Volt Schottky Rectifier
- Optimized for PFC Boost Diode Application
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on V_F


TO-252-2L
Applications

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


Circuit Diagram
Absolute maximum rating@25°C

Parameter		Symbol	Value	Units
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
Surge Peak Reverse Voltage		V_{RSM}	650	V
DC Peak Reverse Voltage		V_R	650	V
Continuous Forward Current	$T_c=25^\circ\text{C}$	I_F	14	A
	$T_c=135^\circ\text{C}$		7.0	
	$T_c=160^\circ\text{C}$		4.0	
Repetitive Peak Forward Surge Current	$T_c=25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$	I_{FRM}	23	A
	$T_c=110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		15	
Non-repetitive Forward Surge Current	$T_c=25^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$	I_{FSM}	36	A
	$T_c=110^\circ\text{C}, t_p=10\text{ms}, \text{Half Sine Pulse}$		28	
i^2t Value	$T_c=25^\circ\text{C}, t_p=10\text{ms}$	$\int i^2 dt$	6.5	A^2s
	$T_c=110^\circ\text{C}, t_p=10\text{ms}$		3.9	
Power Dissipation	$T_c=25^\circ\text{C}$	P_{tot}	51	W
	$T_c=110^\circ\text{C}$		22	
Operating Junction Range		T_J	-55~+175	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-55~+150	$^\circ\text{C}$

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Forward Voltage	V_F	$I_F = 4A, T_J = 25^\circ C$	-	1.3	1.5	V
		$I_F = 4A, T_J = 175^\circ C$	-	1.5	-	
Reverse Current	I_R	$V_R = 650V, T_J = 25^\circ C$	-	10	50	μA
		$V_R = 650V, T_J = 175^\circ C$	-	40	150	
Total Capacitive Charge	Q_C	$V_R = 400V$	-	10.6	-	nC
Total Capacitance	C	$V_R = 0V, f = 1MHz$	-	203	-	pF
		$V_R = 200V, f = 1MHz$	-	21	-	
		$V_R = 400V, f = 1MHz$	-	16	-	

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance (Junction to case)	$R_{\theta JC}$	-	2.9	-	$^\circ C/W$

Typical Characteristics

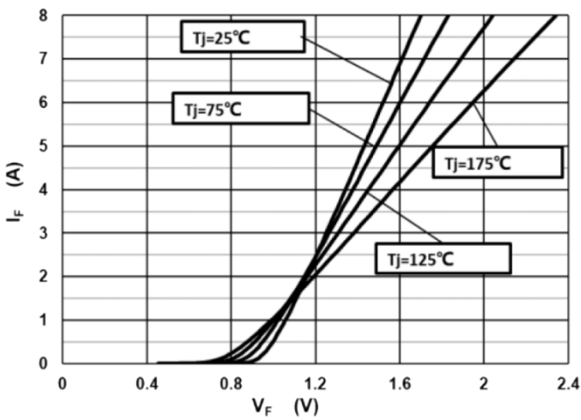


Fig.1 Forward Characteristics

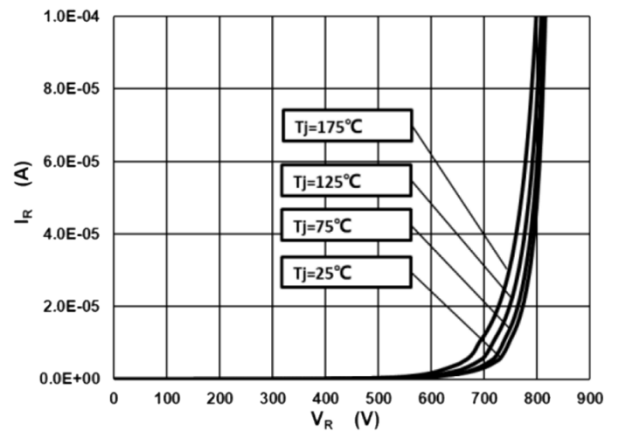


Fig.2 Reverse Characteristics

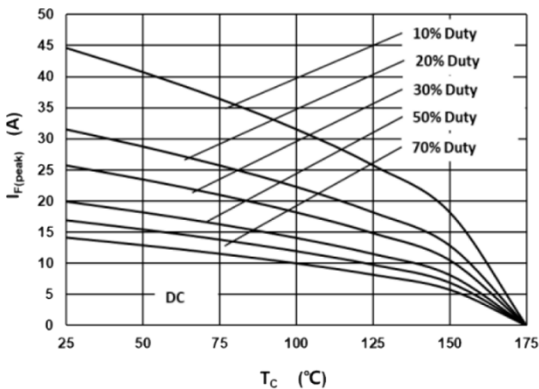


Fig.3 Current Derating

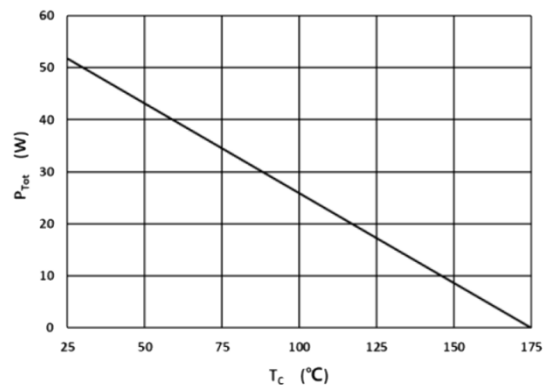


Fig.4 Power Derating

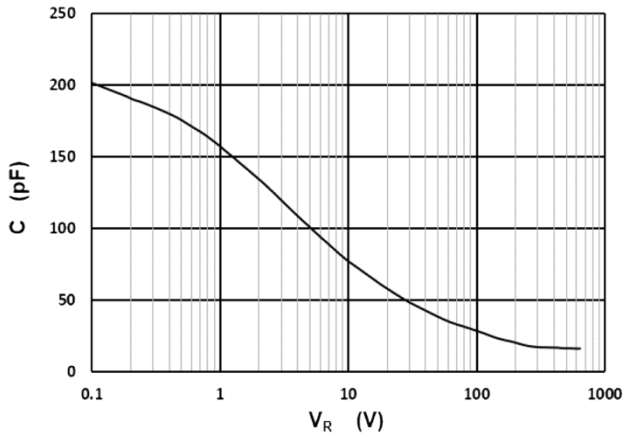


Fig.5 Capacitance vs. Reverse Voltage

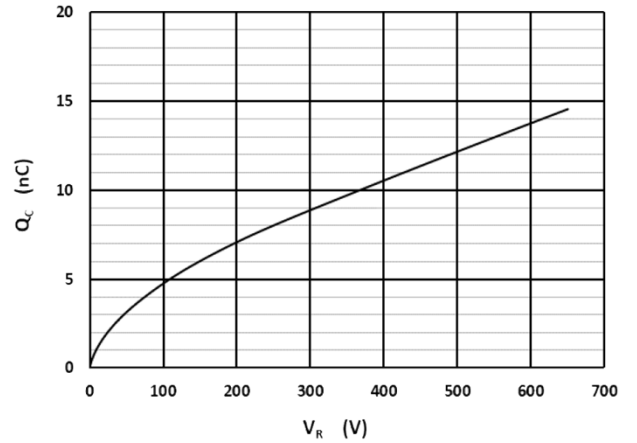


Fig.6 Capacitance Charge vs. Reverse Voltage

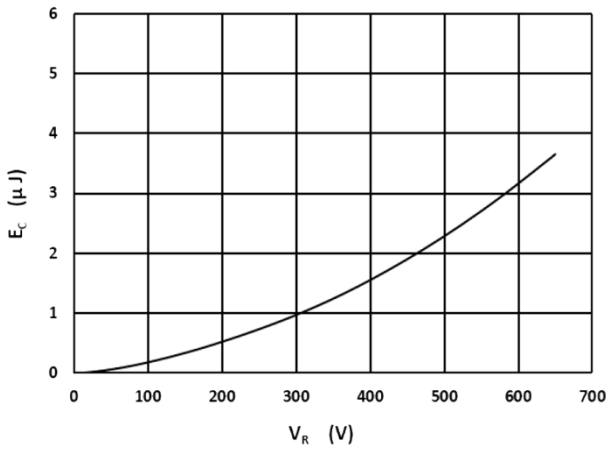


Fig.7 Capacitance Stored Energy

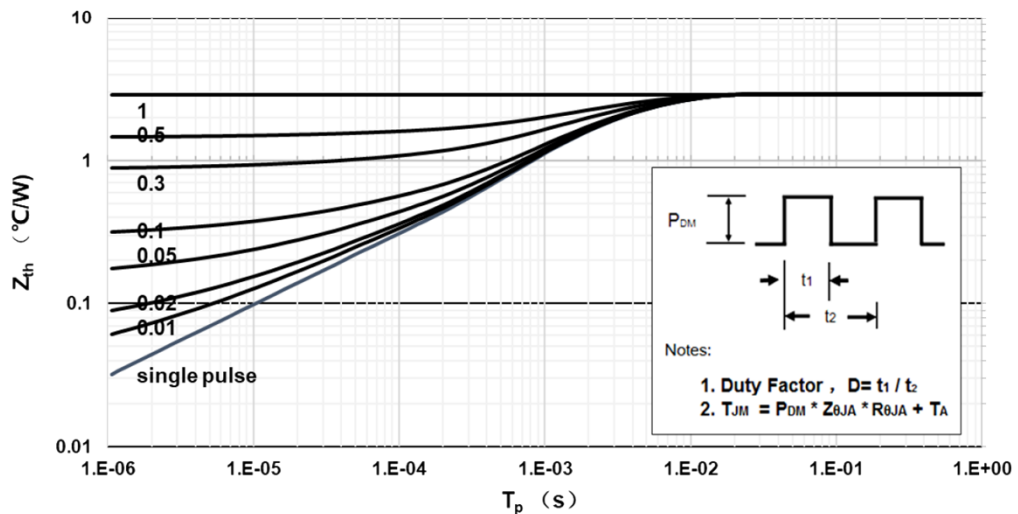
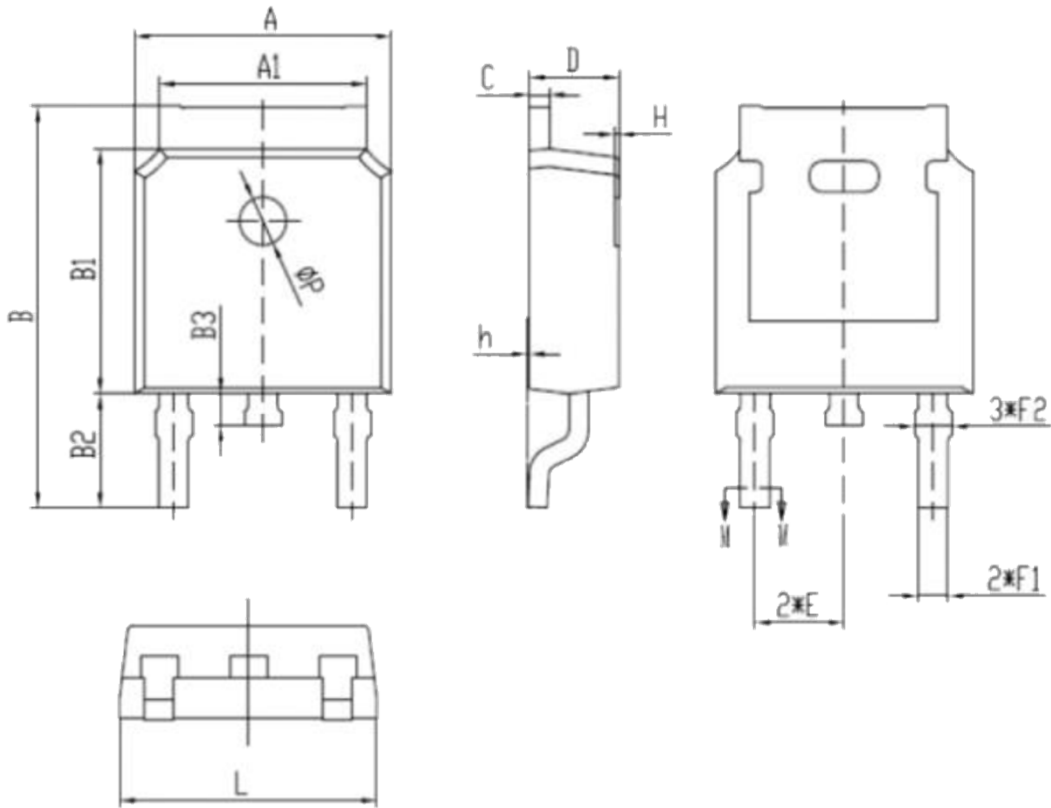



Fig.8 Transient Thermal Impedance

Product dimension (TO-252-2L)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	6.50	6.70	0.256	0.264
A1	5.16	5.46	0.203	0.215
B	9.77	10.17	0.385	0.400
B1	6.00	6.20	0.236	0.244
B2	2.60	3.00	0.102	0.118
B3	0.70	0.90	0.028	0.035
C	0.45	0.61	0.018	0.024
D	2.20	2.40	0.087	0.094
E	2.186	2.386	0.086	0.094
F1	0.67	0.87	0.026	0.034
F2	0.76	0.96	0.030	0.038
H	0.00	0.30	0.000	0.012
h	0.00	0.127	0.000	0.005
L	6.50	6.70	0.256	0.264
ϕP	1.10	1.30	0.043	0.051


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