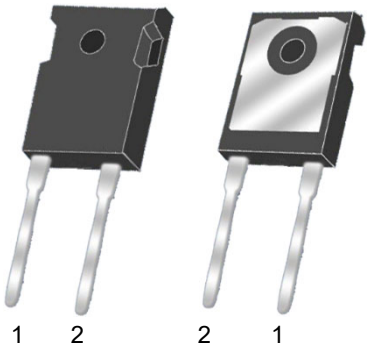
Prisemi®

PSICS2TAF650V10N

Schoktty Barrier Diode

Feature

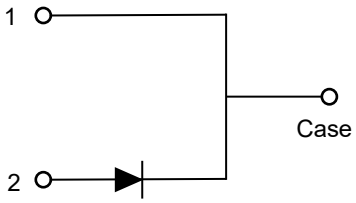
- Low conduction loss due to low V_F
- Extremely low switching loss by tiny Q_C
- Negligible reverse recovery
- Positive Temperature Coefficient
- Pb-free / RoHS compliant
- Highly rugged due to better surge current
- High-reliability



TO-247-2L

Applications

- Solar inverters
- Uninterruptable power supplies
- Motor drives
- Power Factor Correction



Circuit Diagram

Absolute maximum rating@25℃

Parameter		Symbol	Value	Units
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
Continuous Forward Current	T_c=25℃	I_F	40	A
	T_c=155℃		10	
Non-repetitive Forward Surge Current	T_c=25℃,t_p=10ms,Half Sine Pulse	I_{FSM}	85	A
i^2t Value	T_c=25℃,t_p=10ms	$\int i^2 dt$	36	A^2s
Power Dissipation	T_c=25℃	P_{tot}	144	W
	T_c=110℃		62	
Operating junction Range		T_J	-55~+175	℃
Storage Temperature Range		T_{STG}	-55~+175	℃

Electrical characteristics per line@25℃ (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
DC Blocking Voltage	V_{DC}		650	-	-	V
Forward Voltage	V_F	I_F = 10A, T_j=25℃	-	1.29	1.42	V
		I_F = 10A, T_j=135℃	-	1.31	1.54	
		I_F = 10A, T_j=175℃	-	1.43	1.74	
Reverse Current	I_R	V_R = 650V, T_j=25℃	-	1	50	μA
		V_R = 650V, T_j=175℃	-	9	200	
Total Capacitive Charge	Q_C	V_R = 400V, T_j=25℃, $Q_C=\int_0^{V_R} C(V)dV$	-	38	-	nC
Total Capacitance	C	V_R = 1V,f = 1MHz	-	551	-	pF
		V_R = 300V,f = 1MHz	-	63	-	
		V_R = 400V,f = 1MHz	-	57	-	

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance（Junction to case）	$R_{\theta JC}$	-	1.50	-	℃/W

Typical Characteristics

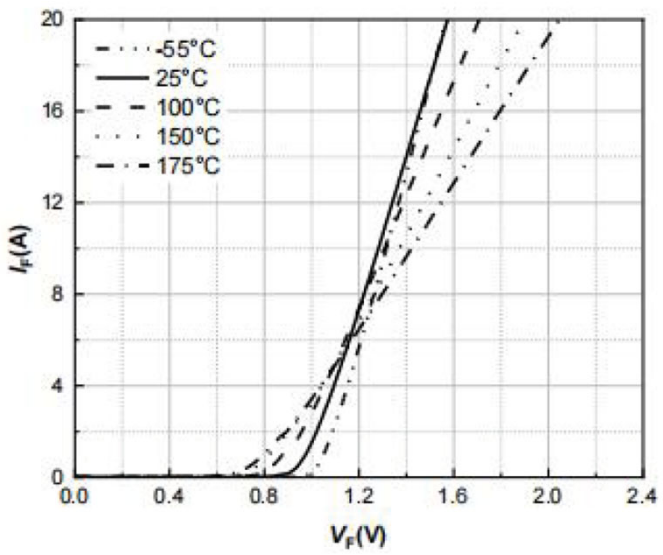


Fig.1 Forward Characteristics

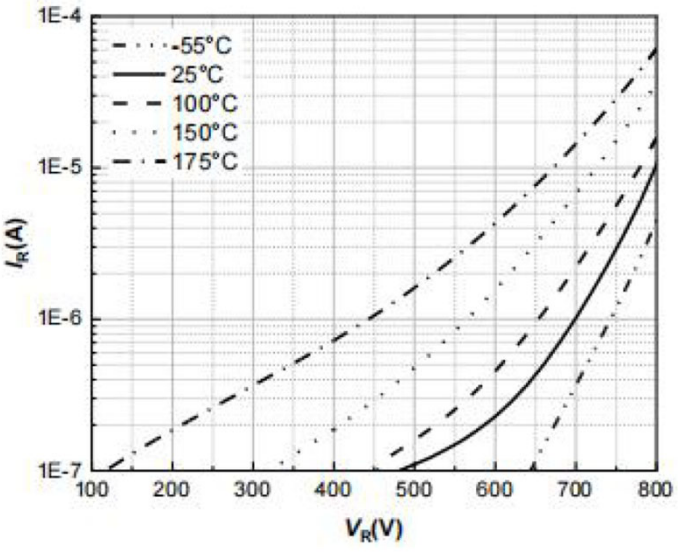


Fig.2 Reverse Characteristics

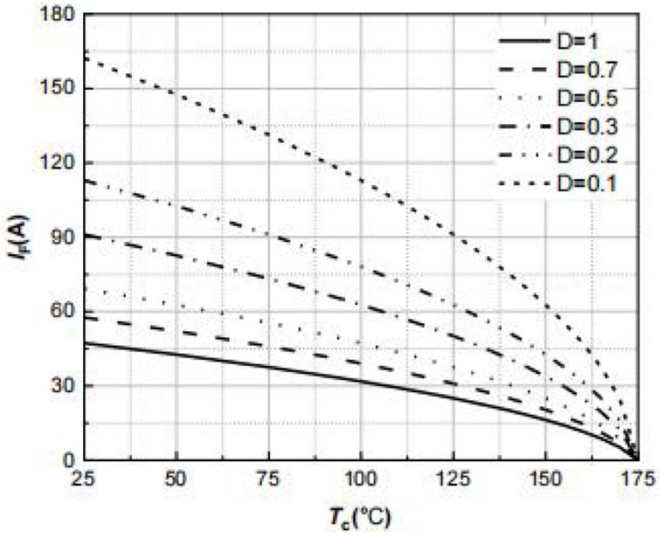


Fig.3 Current Derating

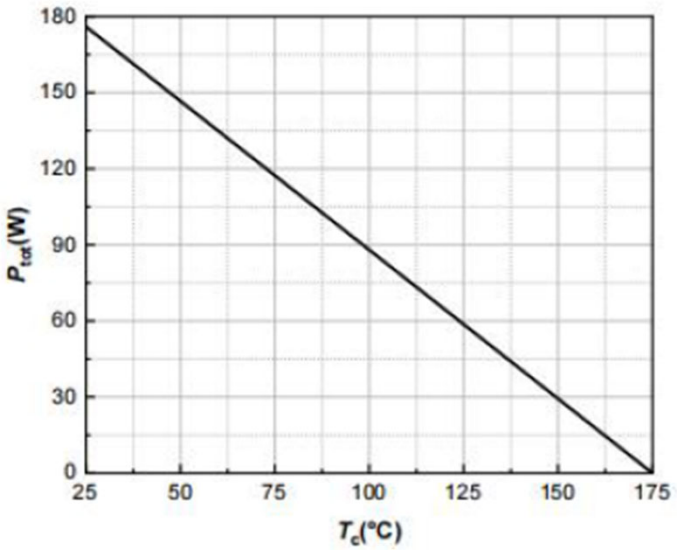


Fig.4 Power Derating

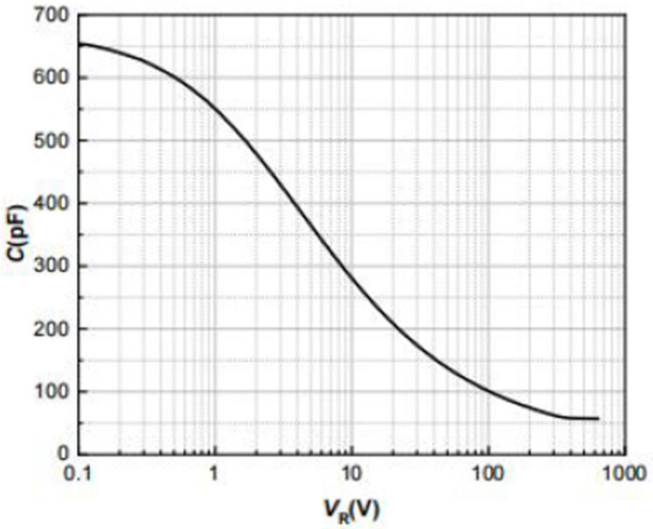


Fig.5 Capacitance vs. Reverse Voltage

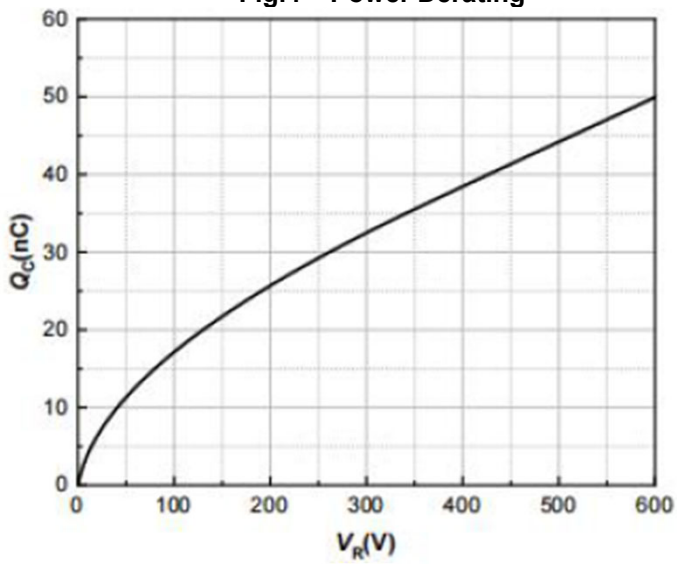


Fig.6 Reverse Charge vs. Reverse Voltage

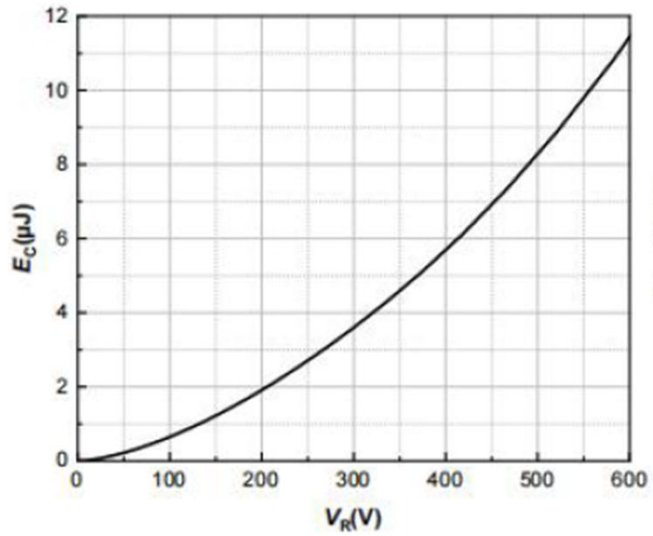


Fig.7 Capacitance Stored Energy

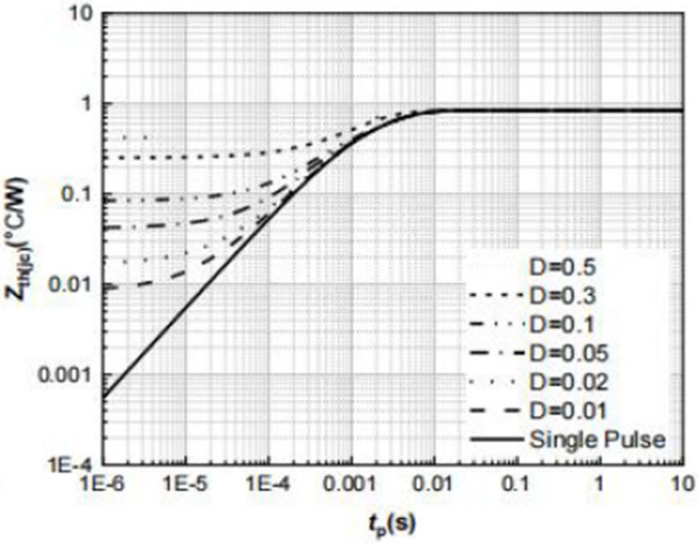
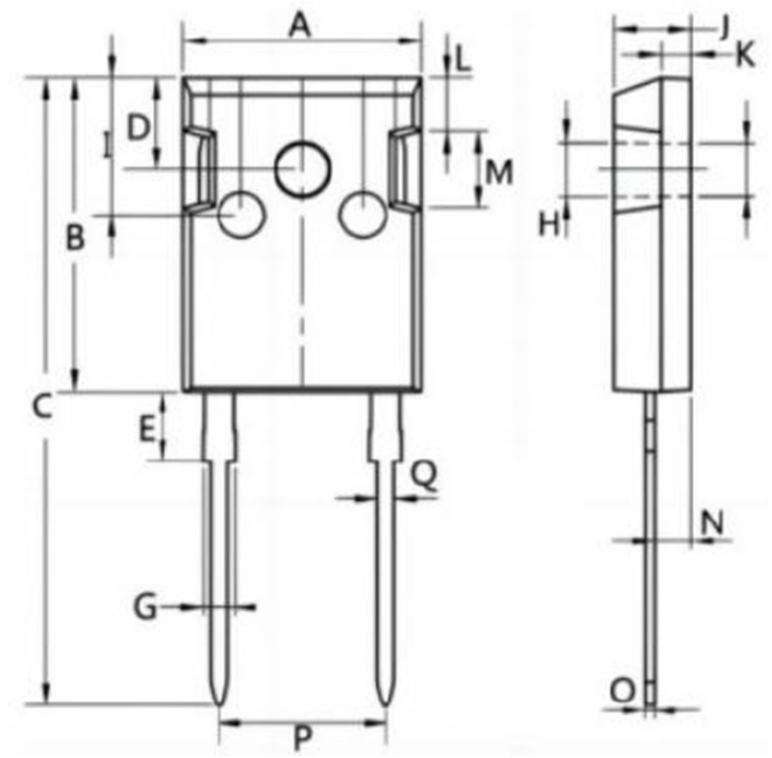


Fig.8 Transient Thermal Impedance

Product dimension (TO-247-2L)



Dim	Millimeters	
	Min	Max
A	15.51	15.71
B	20.40	20.50
C	40.5	42
D	5.80	6.15
E	4.25	4.40
G	2.05	2.15
H	3.62	4.59
I	8.15	8.60
J	4.95	5.05
K	1.96	1.99
L	3.65	3.8
M	4.50	5.05
N	2.30	2.85
O	0.59	0.61
P	TYP 10.8	

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