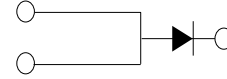


### Feature

- High Forward Surge Capability
- Ultra Low Forward Voltage
- Excellent High Temperature Stability



### Applications

- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

### Construction

- Silicon epitaxial planar

### Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Pure tin plating: 7 ~ 17 um

### Electrical characteristics per line@25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	$V_F$	-	-	0.48	V	$I_F = 10A$
Reverse current	$I_R$	-	-	0.5	mA	$V_R = 45V, T_A = 25^\circ C$
Reverse current	$I_R$	-	-	50	mA	$V_R = 45V, T_A = 125^\circ C$

### Absolute maximum rating@25°C

Parameter	Symbol	limits	Unit
Reverse voltage (DC)	$V_{RM}$	45	V
Average rectified forward current	$I_F$	10	A
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	$I_{FSM}$	175	A
Thermal resistance from junction to Mount	$R_{\theta JM}$	4	°C/W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	°C

Typical Characteristics

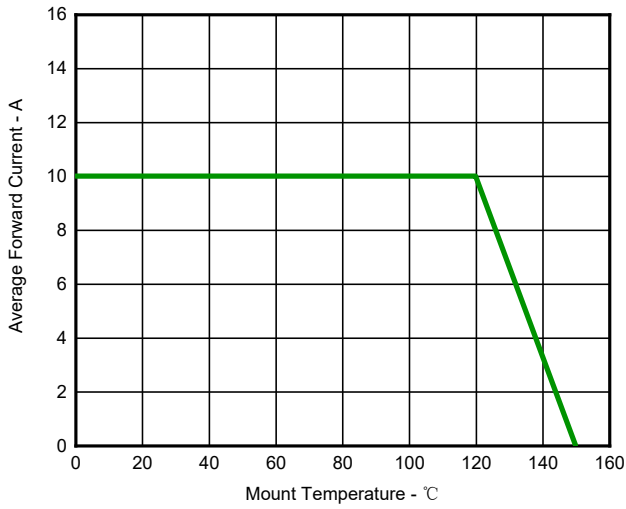


Fig.1 Forward Current Derating Curve

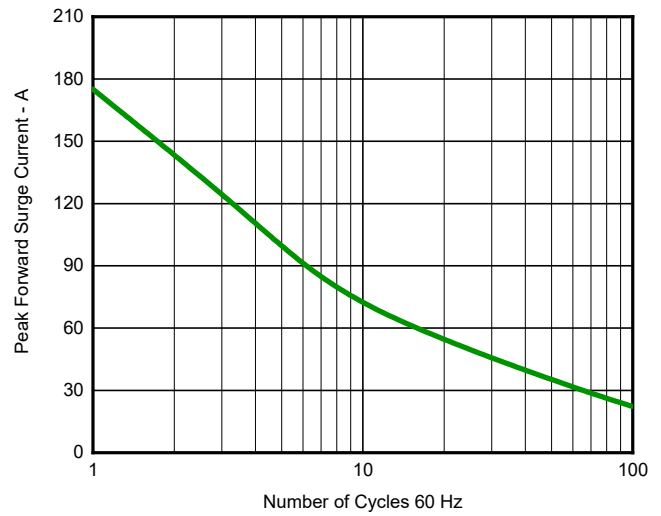


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

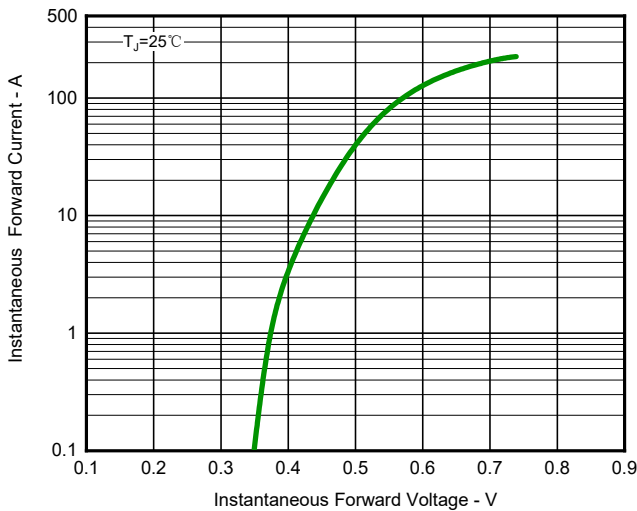


Fig.3 Typical Forward Voltage Characteristics

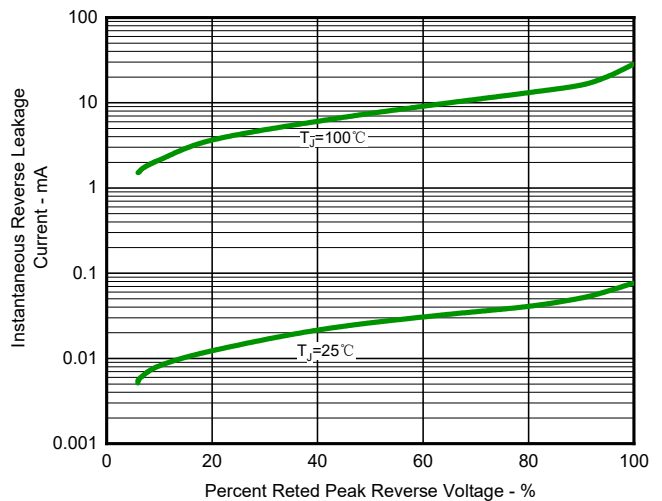
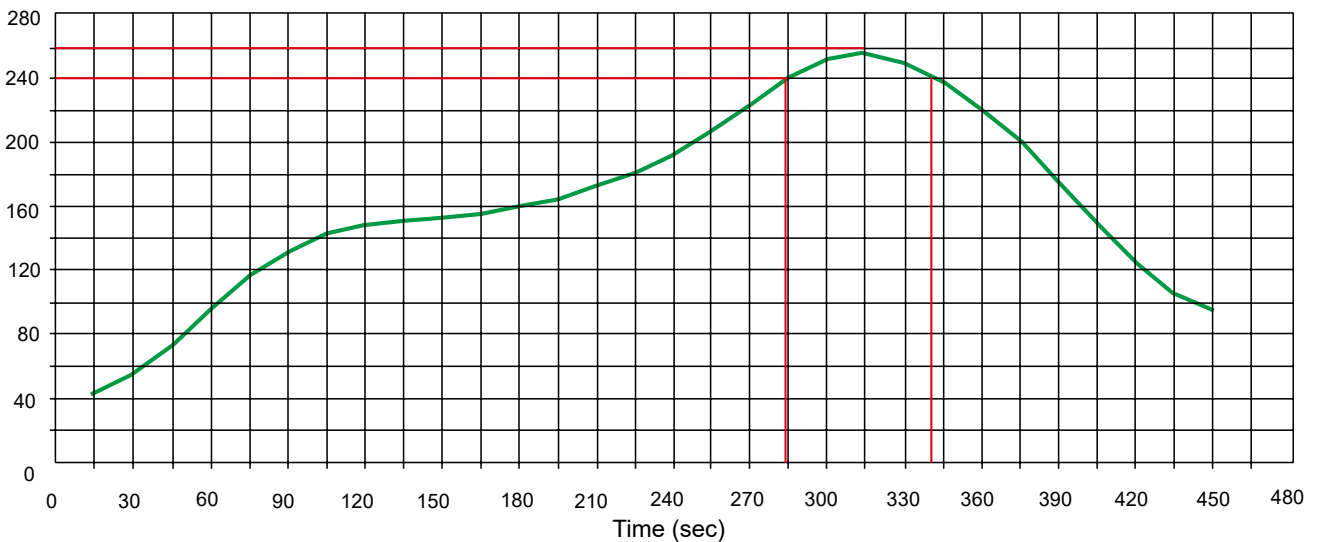


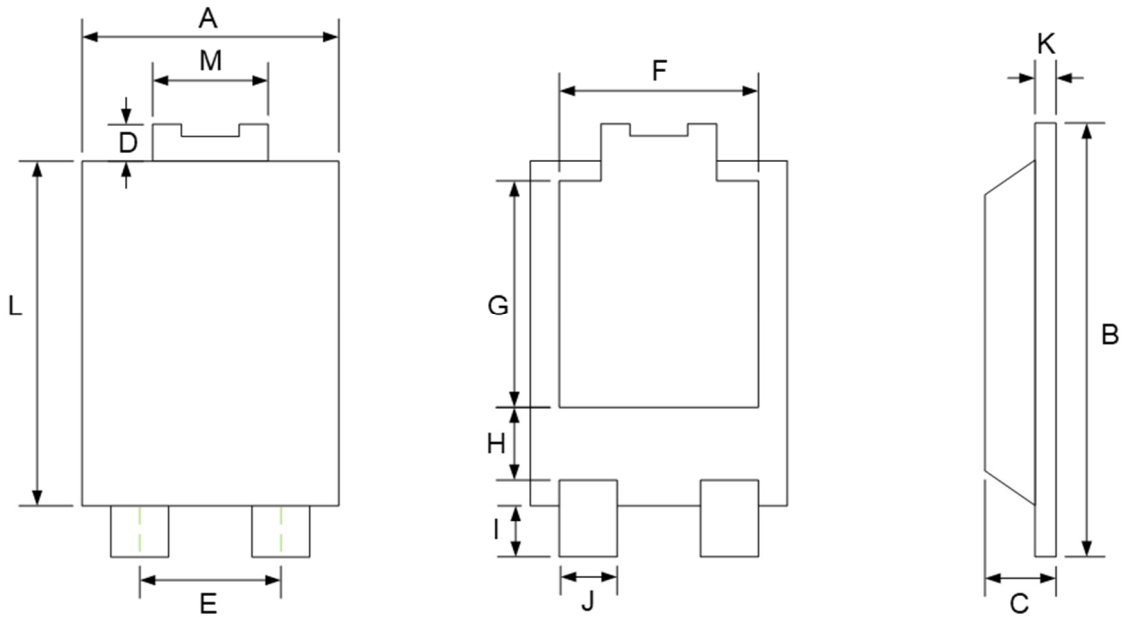
Fig.4 Typical Reverse Leakage Characteristics

Solder Reflow Recommendation

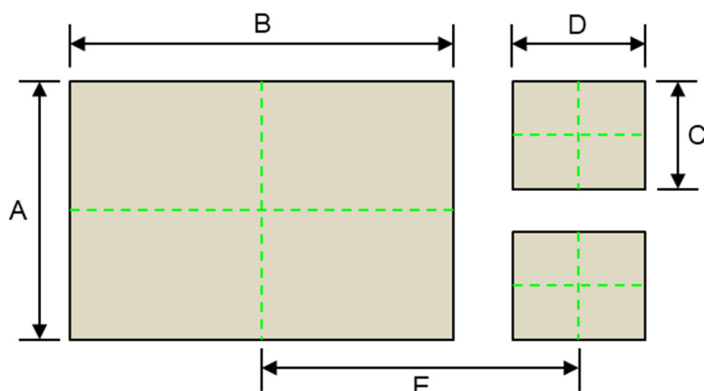
Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



Product dimension (TO-277B)



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	3.80	4.20	0.150	0.165
B	6.40	6.60	0.252	0.260
C	1.00	1.20	0.039	0.047
D	0.45	0.70	0.018	0.028
E	1.65	1.95	0.065	0.076
F	2.90	3.30	0.114	0.130
G	3.25	3.85	0.128	0.151
H	1.00	1.40	0.039	0.055
I	0.45	0.70	0.018	0.028
J	0.80	1.00	0.031	0.039
K	0.20	0.45	0.008	0.018
L	5.30	5.50	0.209	0.216
M	1.70	1.90	0.067	0.075



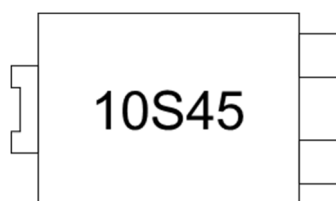
Dim	Millimeters	Inches
A	3.60	0.142
B	5.35	0.211
C	1.50	0.059
D	1.85	0.073
E	4.30	0.169

Suggested PCB Layout


Ordering information

Device	Package	Shipping
PSBD3TD45V10H	TO-277B(Pb-free)	5000 / Tape & Reel

Marking information




**IMPORTANT NOTICE**

 and **Prisemi**<sup>®</sup> are registered trademarks of **Prisemi Electronics Co., Ltd** (Prisemi) ,Prisemi reserves the right to make changes without further notice to any products herein. Prisemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Prisemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. “Typical” parameters which may be provided in Prisemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including “Typicals” must be validated for each customer application by customer’s technical experts. Prisemi does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices, Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Website: <http://www.prisemi.com>

For additional information, please contact your local Sales Representative.

©Copyright 2009, Prisemi Electronics

 **Prisemi**<sup>®</sup> is a registered trademark of Prisemi Electronics.

All rights are reserved.