

## HIGH VOLTAGE SCHOTTKY RECTIFIER

### Features

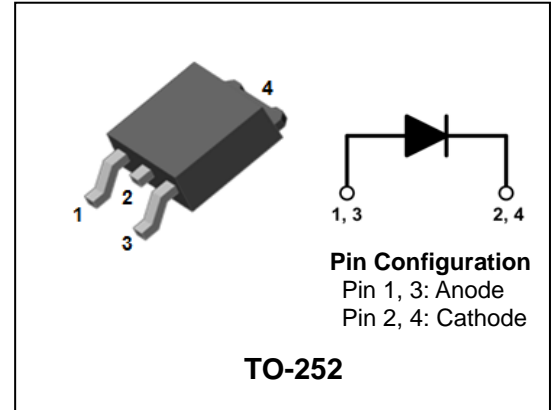
- Low forward voltage drop
- Low power loss and High efficiency
- Low leakage current
- High surge capability
- Halogen-free component and RoHS compliant device

### Applications

- High efficiency SMPS
- Output rectification
- High frequency switching
- Freewheeling
- DC-DC converter systems

### Description

The SDB5100D is ideally suited for a full wave output rectifier in low switching power supplies, inverters and as free wheeling diodes.



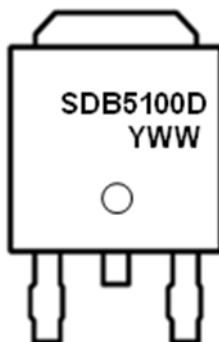
### Product Characteristics

$I_{F(AV)}$	5A
$V_{RRM}$	100V
$V_{FM}$ at 125°C	0.68V
$I_{FSM}$	120A

### Ordering Information

Device	Marking Code	Package	Packaging
SDB5100D	SDB5100D	TO-252	Tape & Reel

### Marking Information



SDB5100D = Specific Device Code  
 YWW = Year & Week Code Marking  
 -. Y = Year Code  
 -. WW = Week Code

## Absolute Maximum Ratings (Limiting Values)

Characteristic	Symbol	Value	Unit
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	100	V
Maximum average forward rectified current	$I_{F(AV)}$	5	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	120	A
Storage temperature range	$T_{stg}$	-45°C to +150°C	°C
Maximum operating junction temperature	$T_J$	150	°C

## Thermal Characteristics

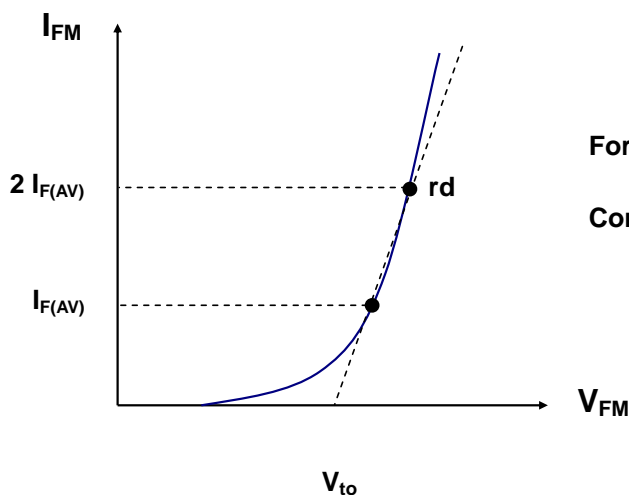
Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{th(j-c)}$	4.0	°C/W

## Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 5A$	$T_j = 25^\circ C$	-	-	0.85	V
			$T_j = 125^\circ C$	-	-	0.68	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_j = 25^\circ C$	-	-	10	uA
			$T_j = 125^\circ C$	-	-	10	mA
Junction capacitance	$C_j$	$V_R = 4V_{DC}, f=1MHz$	-	100	-	pF	

**Note :** (1) Pulse test :  $t_p \leq 380 \mu s$ , Duty cycle  $\leq 2\%$

To evaluate the conduction losses use the following equation (Fig 4.) :  $P_F = 0.62 \times I_{F(AV)} + 0.042 I_{F(RMS)}^2$



**Forward Voltage :**  $V_{FM} = V_{to} + rd I_{FM}$

**Conduction Loss :**  $P_F = V_{to} I_{F(AV)} + rd I_{F(RMS)}^2$

## Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

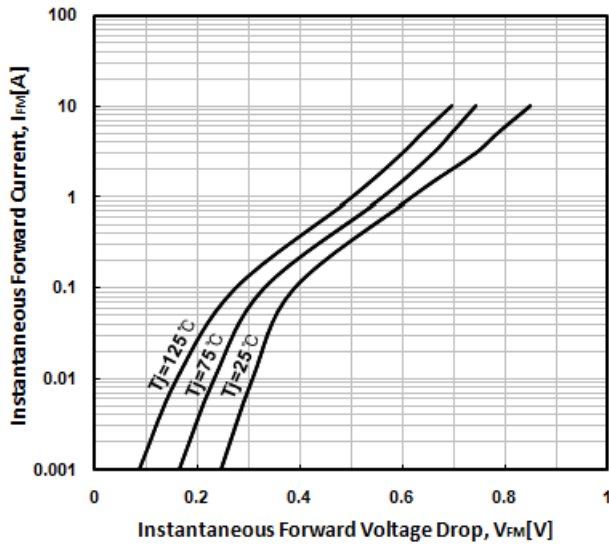


Fig. 2) Typical Reverse Characteristics

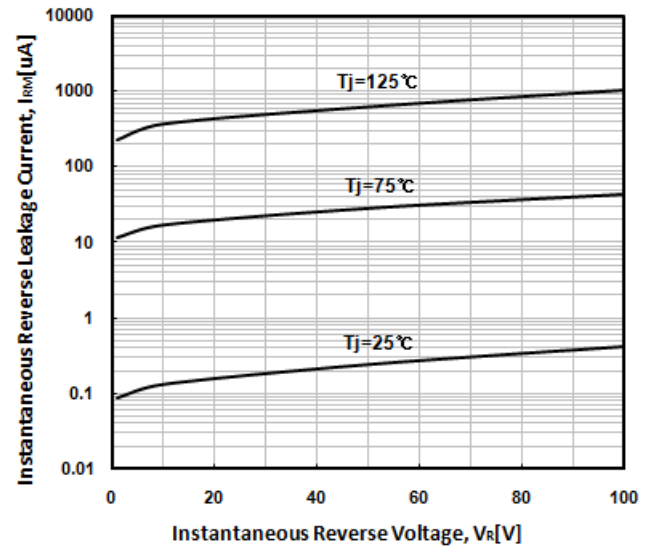


Fig. 3) Maximum Forward Derivative Curve

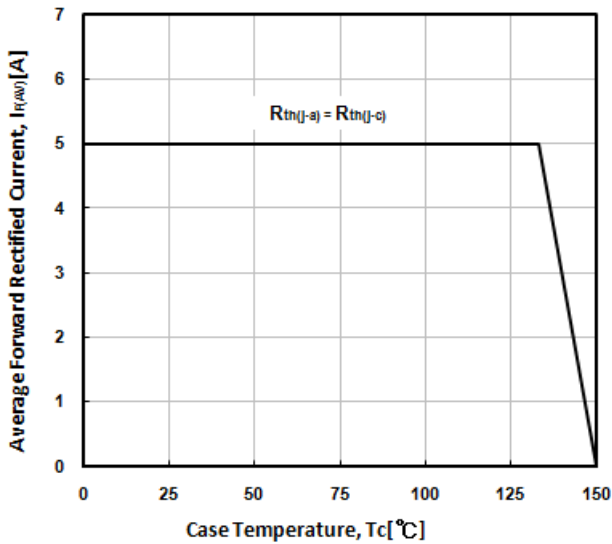


Fig. 4) Forward Power Dissipation

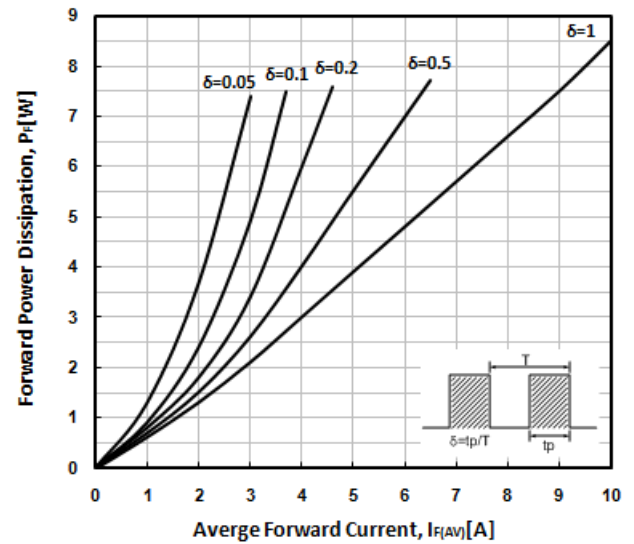


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

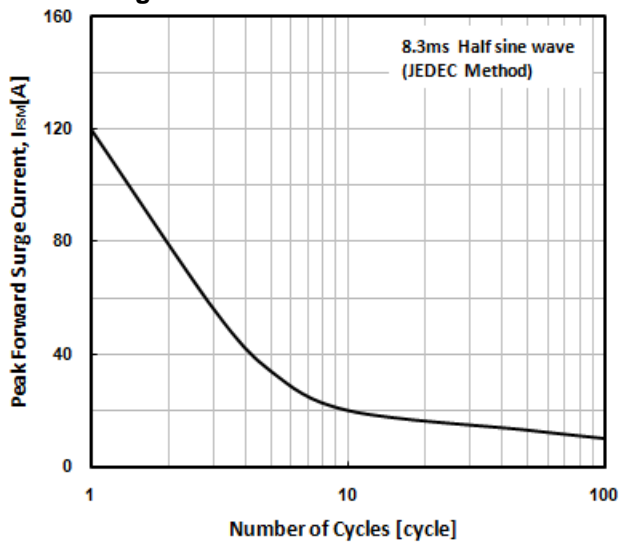
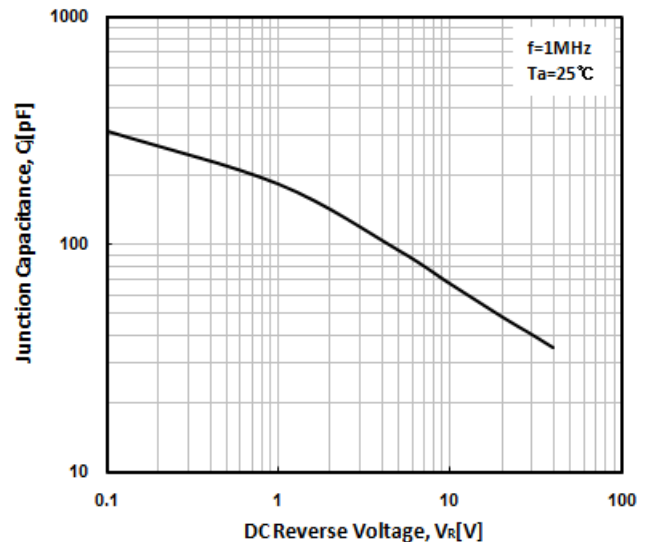
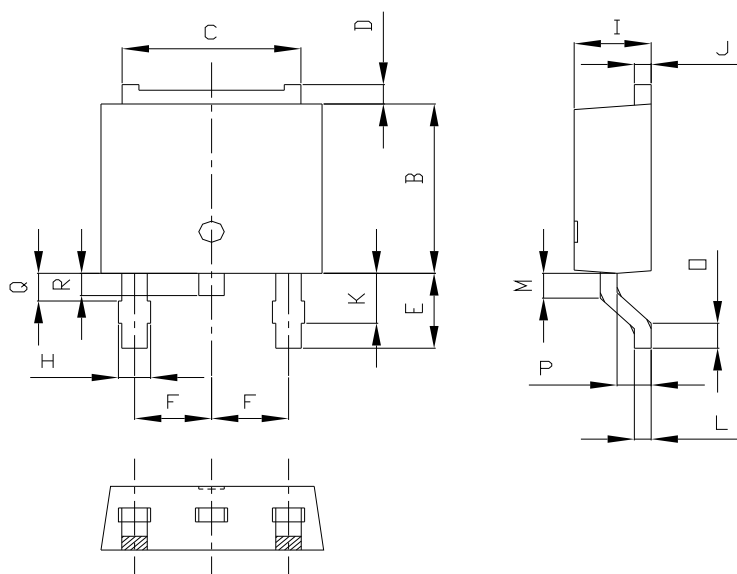


Fig. 6) Typical Junction Capacitance

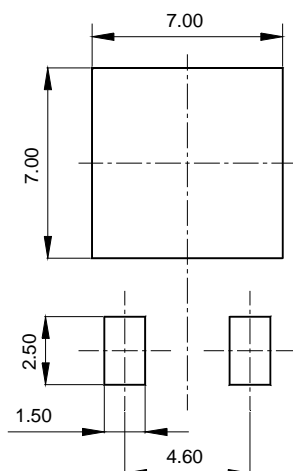


## Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	6.40	6.60	6.80	
B	5.90	6.10	6.30	
C	5.04	5.34	5.64	
D	0.50	0.70	0.90	
E	2.50	2.70	2.90	
F	2.10	2.30	2.50	
H	0.96 MAX			
I	2.20	2.30	2.40	
J	0.40	0.50	0.60	
K	1.60	1.80	2.00	
L	0.40	0.50	0.60	
M	0.81	0.91	1.01	
O	0.80	0.90	1.00	
P	0.90	1.00	1.10	
Q	0.95 MAX			
R	0.60	0.80	1.00	

### ※ Recommended Land Pattern [unit: mm]



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