

LOW FORWARD DROP VOLTAGE SCHOTTKY RECTIFIER

Features

- Low forward voltage drop
- Low power loss and High efficiency
- Low leakage current
- High surge capability
- “Green” device and RoHS compliant device

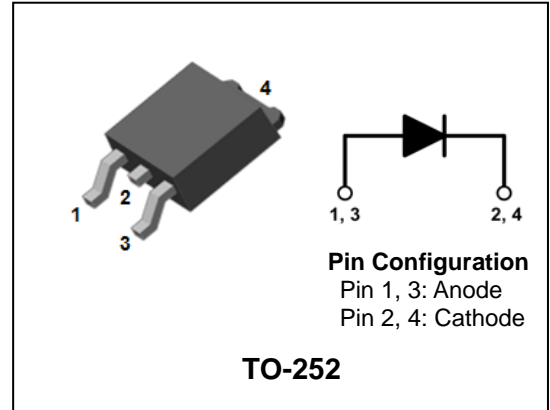


Applications

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

Description

The SDB1060D is ideally suited for a full wave output rectifier in low switching power supplies, inverters and as free wheeling diodes.



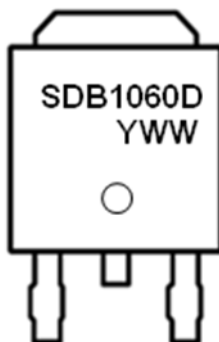
Product Characteristics

$I_{F(AV)}$	10A
V_{RRM}	60V
V_{FM} at 125°C	0.55V
I_{FSM}	120A

Ordering Information

Device	Marking Code	Package	Packaging
SDB1060D	SDB1060D	TO-252	Tape & Reel

Marking Information



- SDB1060D = 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	60	V
Maximum average forward rectified current	$I_{F(AV)}$	10	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

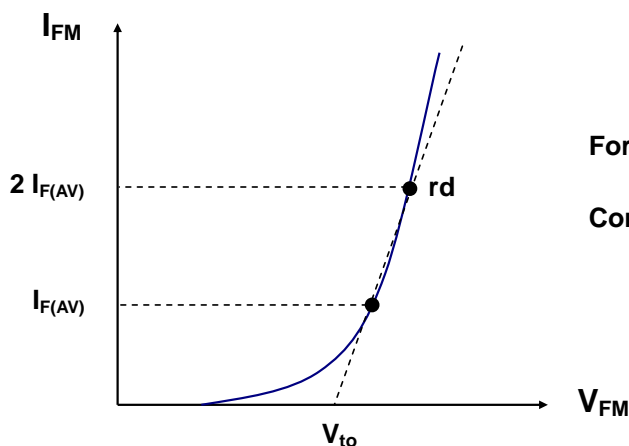
Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{th(j-c)}$	4.0	°C/W

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 10A$	$T_j = 25^\circ C$	-	0.55	0.65	V
			$T_j = 125^\circ C$	-	0.50	0.55	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_j = 25^\circ C$	-	-	1.5	mA
			$T_j = 125^\circ C$	-	-	200	mA
Junction capacitance	C_j	$V_R = 4V_{DC}, f=1MHz$	-	400	-	pF	

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

To evaluate the conduction losses use the following equation: $P_F = 0.35 I_{F(AV)} + 0.019 I_{F(RMS)}^2$



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

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

Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

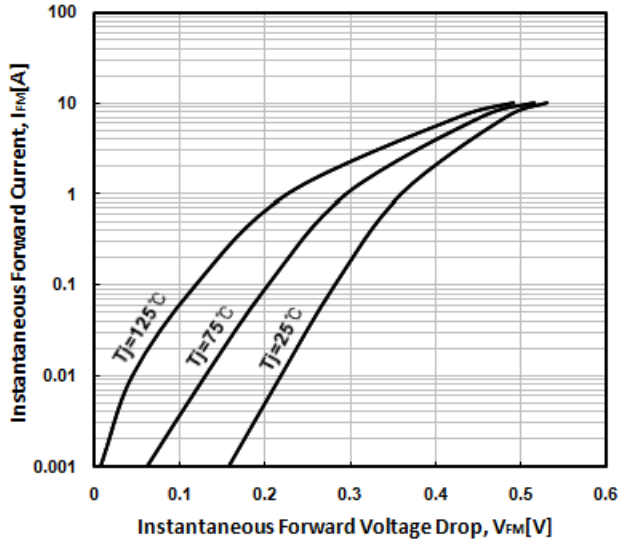


Fig. 2) Typical Reverse Characteristics

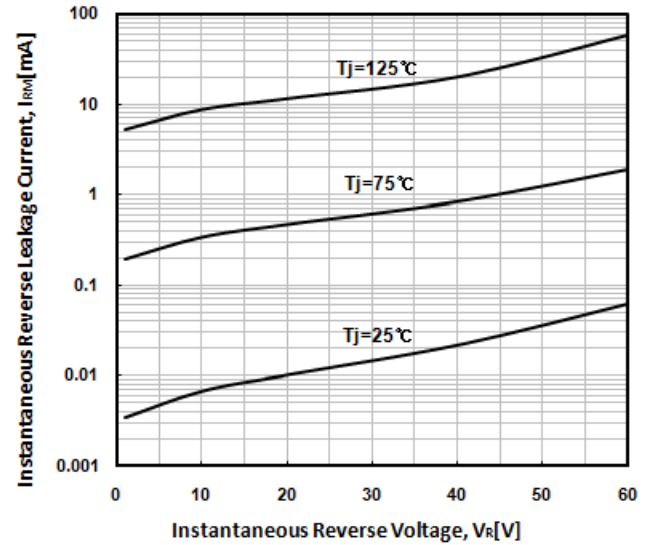


Fig. 3) Maximum Forward Derivative Curve

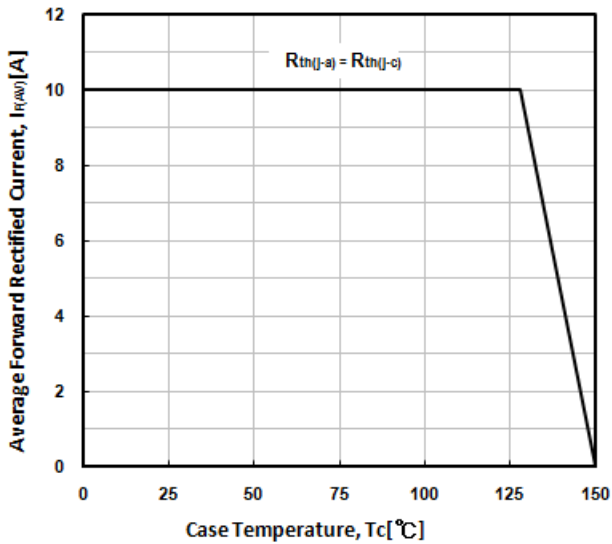


Fig. 4) Forward Power Dissipation

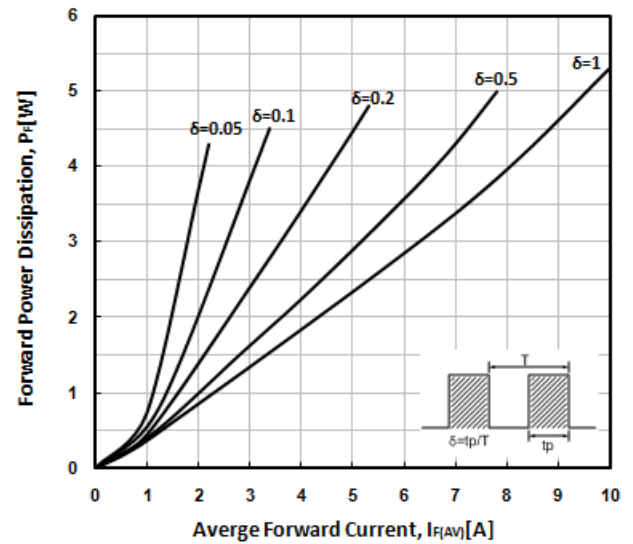


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

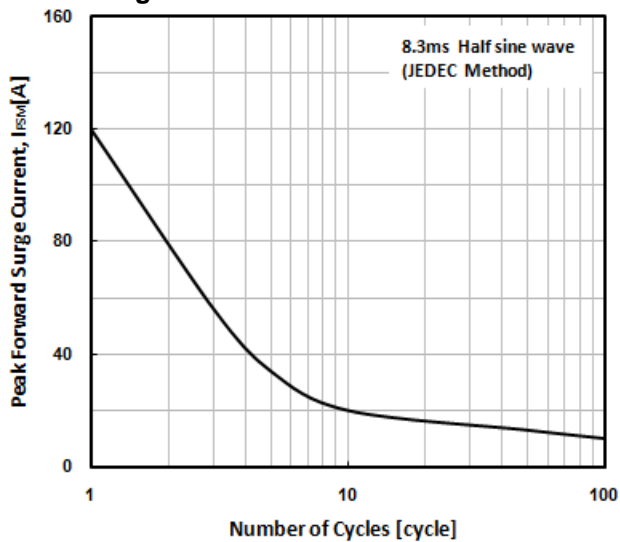
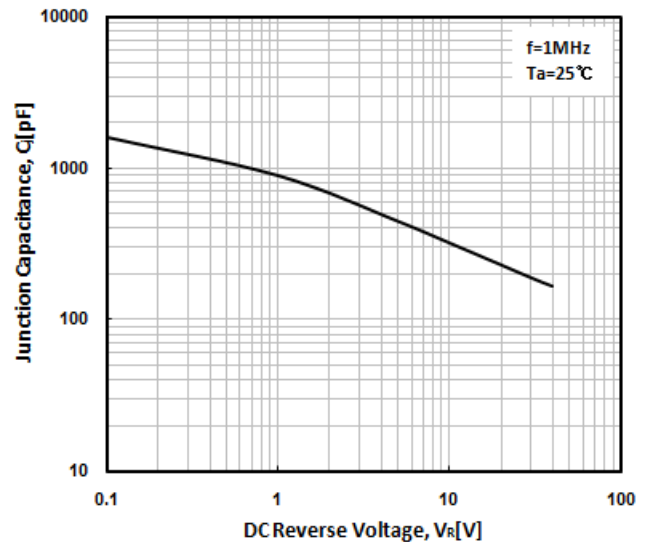
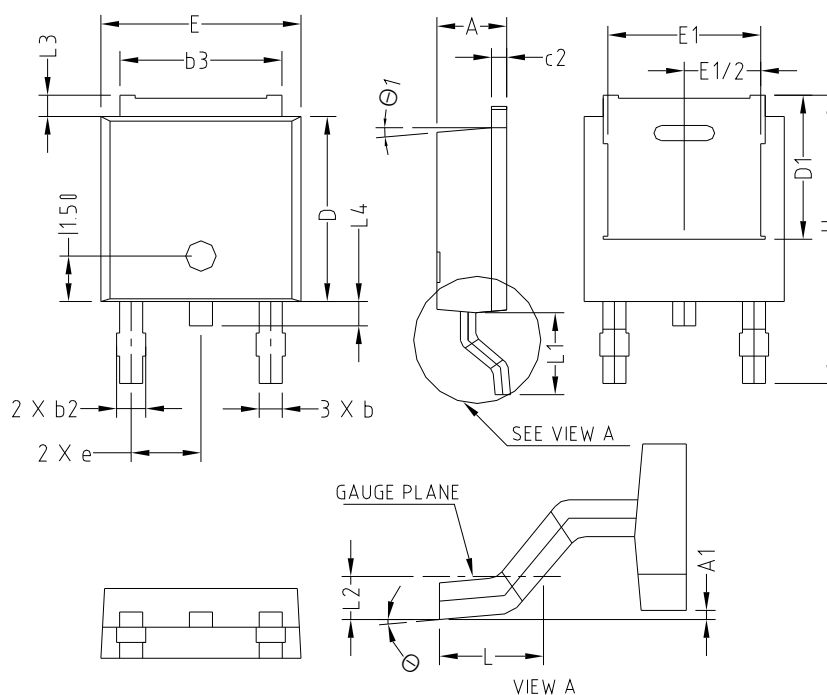


Fig. 6) Typical Junction Capacitance

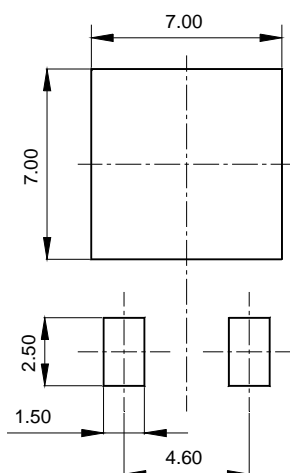


Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	2.20	2.30	2.40	
A1	0.00		0.127	
b	0.66	0.76	0.86	
b2	-	-	0.96	
b3	5.04	5.34	5.64	
c2	0.40	0.50	0.60	
D	5.90	6.10	6.30	
D1	4.75			
E	6.40	6.60	6.80	
E1	5.04			
e	2.30 BSC			
H	9.20	9.50	9.80	
L	1.27	1.47	1.67	
L1	2.50	2.70	2.90	
L2	0.508 BSC			
L3	0.50	0.70	0.90	
L4	0.60	0.80	1.00	
$\Theta 1$	0°	-	10°	
$\oplus 1$	5°			

※ Recommended Land Pattern (Unit: mm)



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