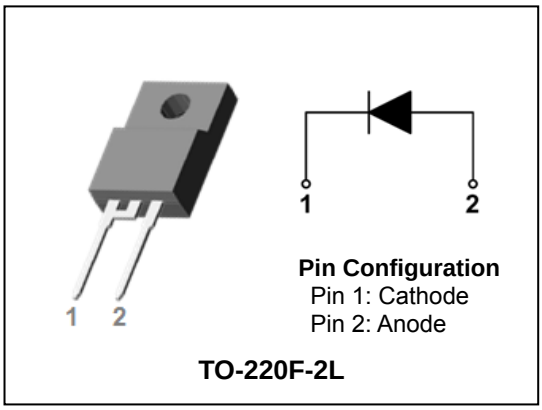
SDB5100PH

Schottky Barrier Rectifier

HIGH VOLTAGE SCHOTTKY RECTIFIER

Features

- Low forward voltage drop
- Low power loss and High efficiency
- Low leakage current
- High surge capability
- Full lead-free(Pb) component and RoHS compliant device



Pin Configuration
Pin 1: Cathode
Pin 2: Anode

TO-220F-2L

Applications

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

Product Characteristics

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

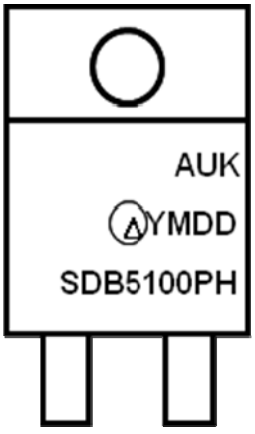
Description

The SDB5100PH is ideally suited for a full wave output rectifier in low switching power supplies, inverters and as free wheeling diodes.

Ordering Information

Device	Marking Code	Package	Packaging
SDB5100PH	**SDB5100PH**	**TO-220F-2L**	**Tube**

Marking Information



AUK = Manufacture Logo
Δ = Control Code of Manufacture
YMDD = Date Code Marking
-. Y = Year Code
-. M = Monthly Code
-. D = Daily Code
SDB5100PH = Specific Device 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℃ to +150℃	℃
Maximum operating junction temperature	T_J	150	℃

Thermal Characteristics

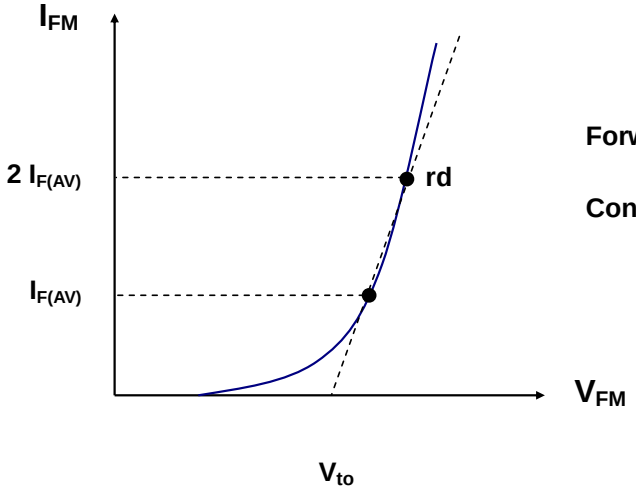
Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{th(j-c)}$	4.0	℃/W

Electrical Characteristics

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	V_{FM} (1)	I_{FM} = 5A	T_j=25℃	-	-	0.85	V
			T_j=125℃	-	-	0.68	V
Reverse leakage current	I_{RM} (1)	$V_R = V_{RRM}$	T_j=25℃	-	-	10	uA
			T_j=125℃	-	-	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.) : $P_F = 0.62 \times I_{F(AV)} + 0.042\ I_{F^2(RMS)}$



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

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

Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

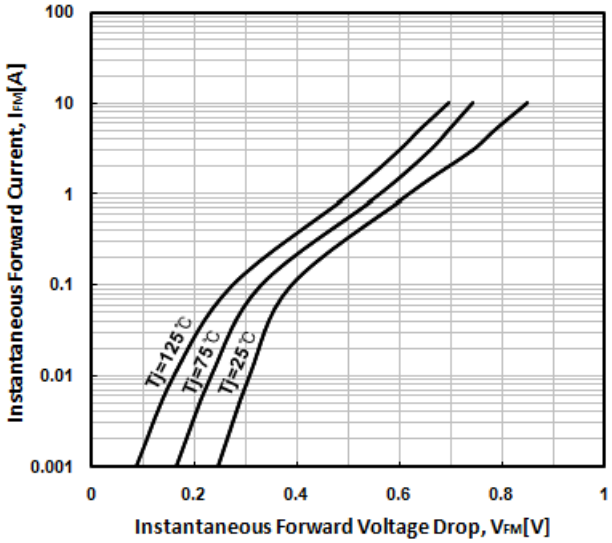


Fig. 2) Typical Reverse Characteristics

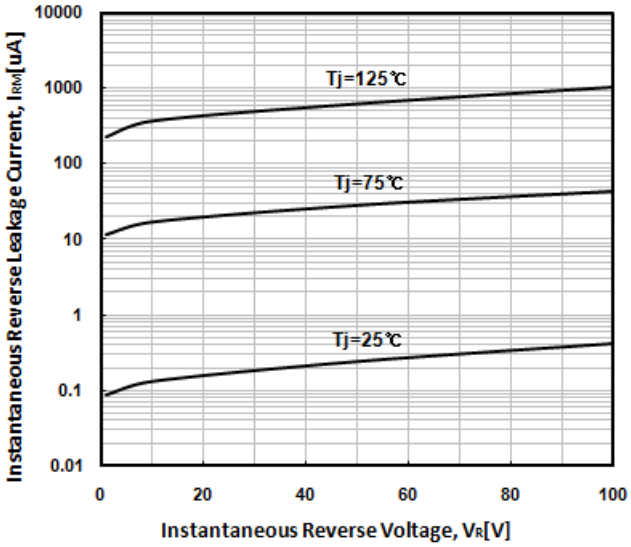


Fig. 3) Maximum Forward Derative Curve

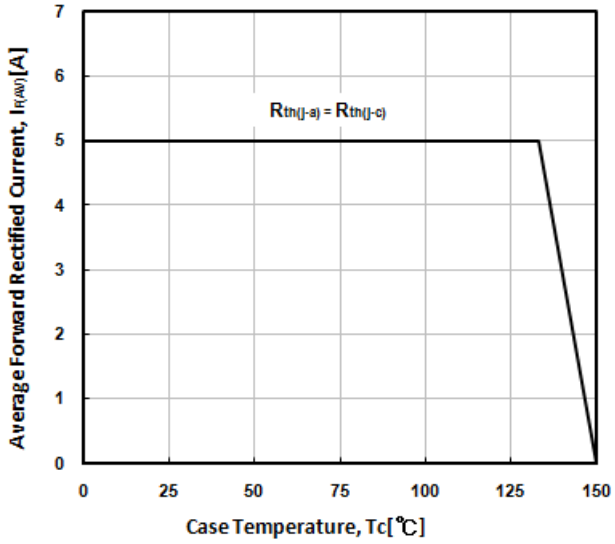


Fig. 4) Forward Power Dissipation

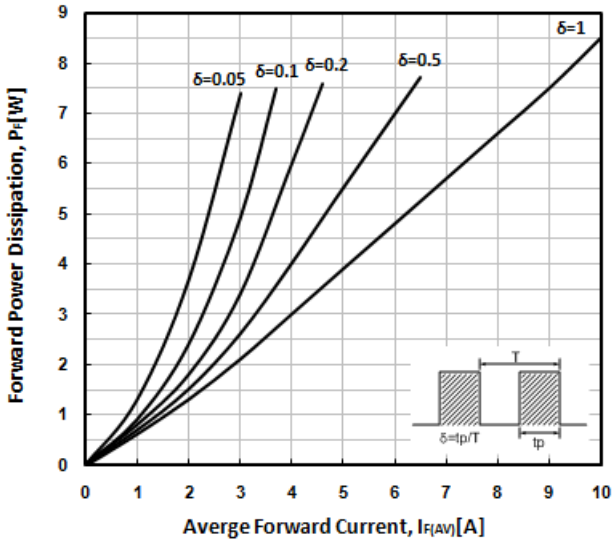


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

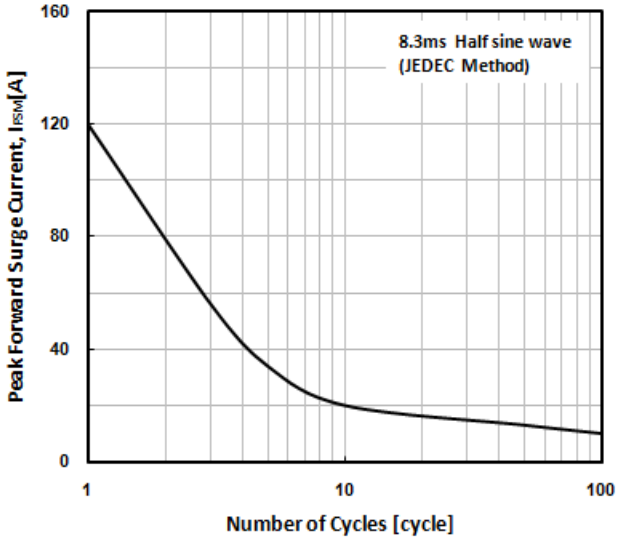
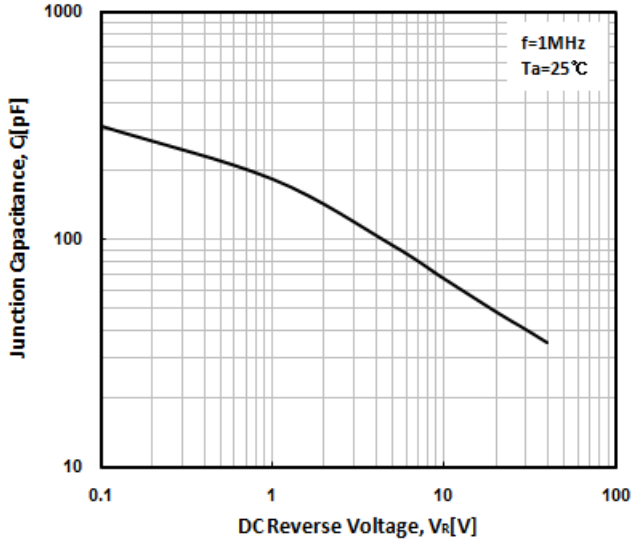
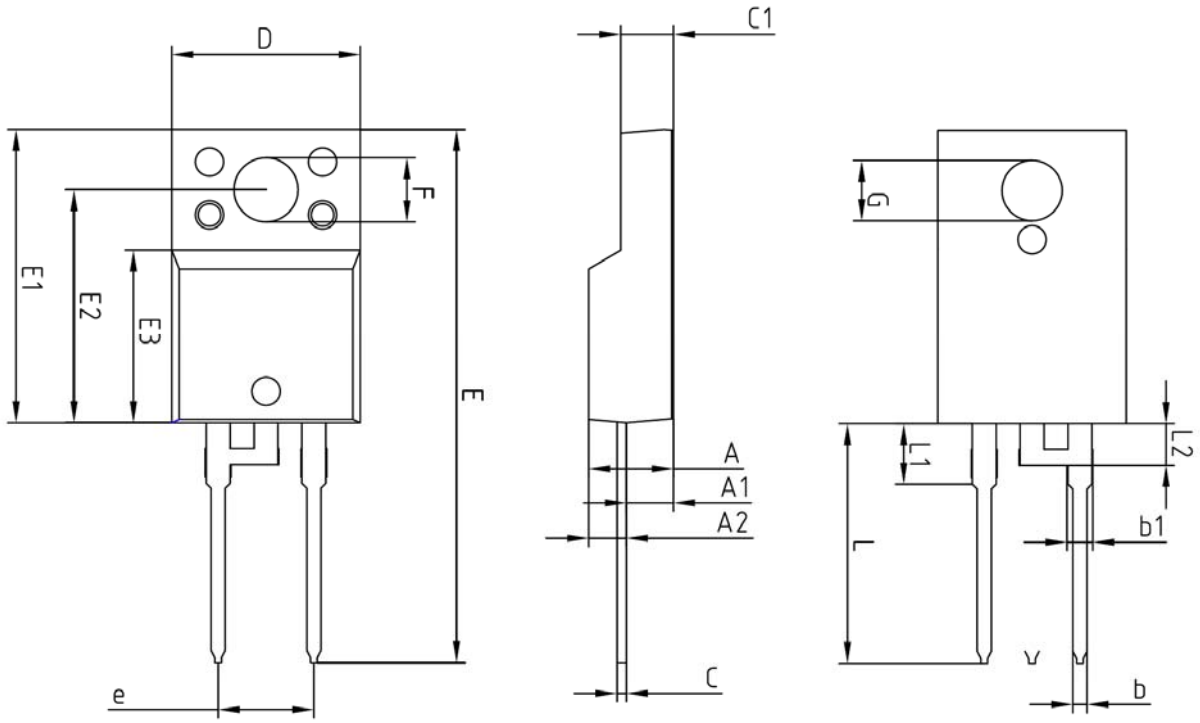


Fig. 6) Typical Junction Capacitance



Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	–	–	4.60	
A1	2.45	2.50	2.55	
A2	1.95	2.00	2.05	
b	0.65	0.75	0.85	
b1	1.07	1.27	1.47	
C	0.40	0.50	0.60	
C1	2.70	2.80	2.90	
D	9.90	10.00	10.10	
E	28.00	–	28.60	
E1	15.50	15.60	15.70	
E2	12.30	12.40	12.50	
E3	9.15	9.20	9.25	
F	3.30	3.40	3.50	
G	3.10	3.20	3.30	
e	5.08 BSC			
L	12.40	–	13.00	
L1	3.46 BSC			
L2	2.21 BSC			

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