

80V, 10A POWER SCHOTTKY RECTIFIER

Features

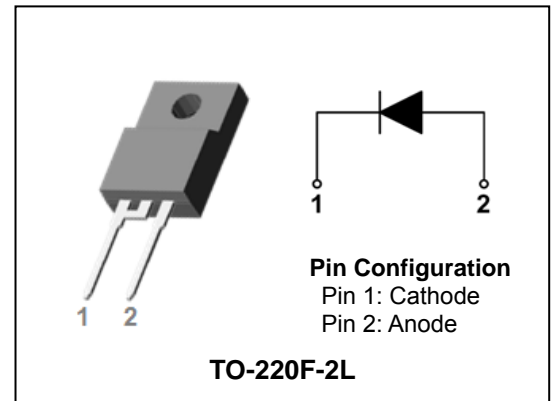
- Low forward voltage drop
- Low power loss and High efficiency
- Low leakage current
- High surge capacity
- Full lead (Pb)-free and RoHS compliant device

Applications

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

Description

The SDB1080PH is suited for Switch Mode Power Supply and high frequency DC to DC converters. This device is especially intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.



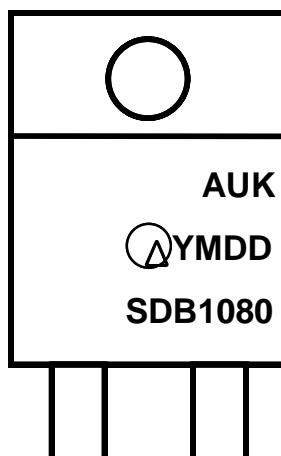
Product Characteristics

$I_{F(AV)}$	10A
V_{RRM}	80V
V_{FM} at 125°C	0.65V (Typ.)
I_{FSM}	150A

Ordering Information

Device	Marking Code	Package	Packaging
SDB1080PH	SDB1080	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
 SDB1080 = 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	80	V
Maximum average forward rectified current	per diode	10	A
	total device	20	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	150	A
Storage temperature range	T_{stg}	-45°C to +150°C	°C
Maximum operating junction temperature	T_j	150	°C

Thermal Characteristics

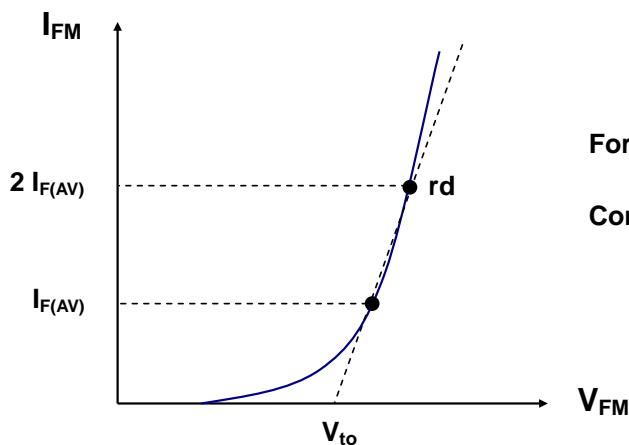
Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{th(j-c)}$	4.0	°C/W

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 10A$	$T_j = 25^\circ C$	-	0.70	0.80	V
			$T_j = 125^\circ C$	-	0.65	0.72	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_j = 25^\circ C$	-	-	0.6	mA
			$T_j = 125^\circ C$	-	-	100	mA
Junction capacitance	C_j	$V_R = 1V_{DC}, f=1MHz$	-	550	-	pF	

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

To evaluate the conduction losses use the following equation: $P_F = 0.36 \times I_{F(AV)} + 0.0335 I_{F(RMS)}^2$



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

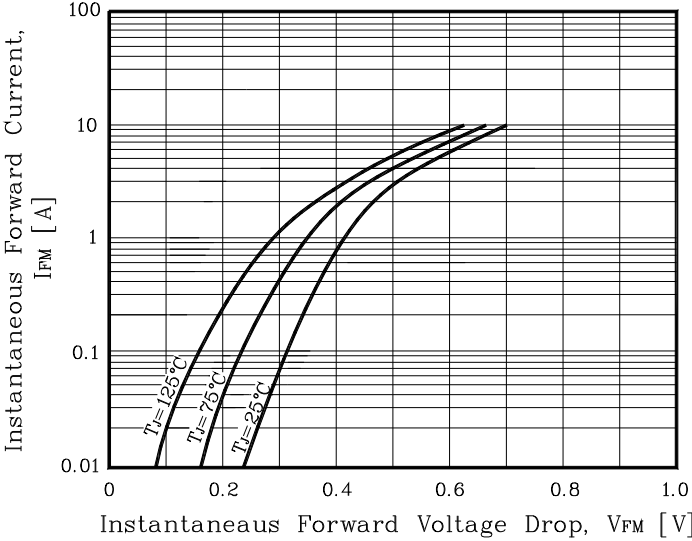


Fig. 2) Typical Reverse Characteristics

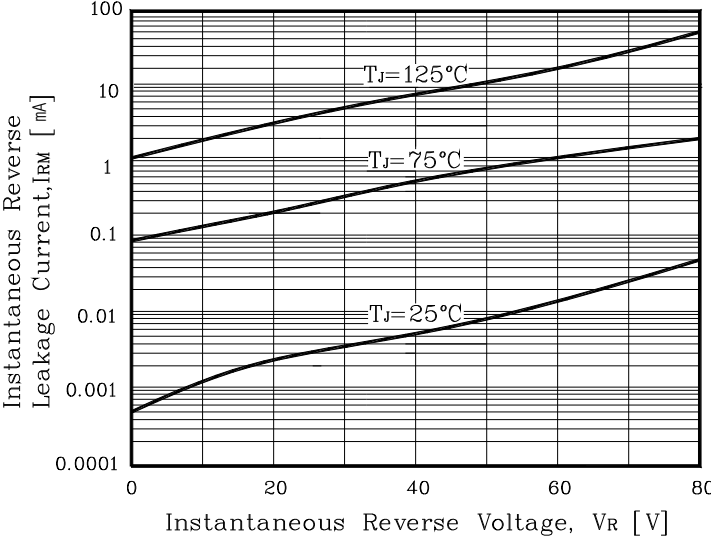


Fig. 3) Maximum Forward Derivative Curve

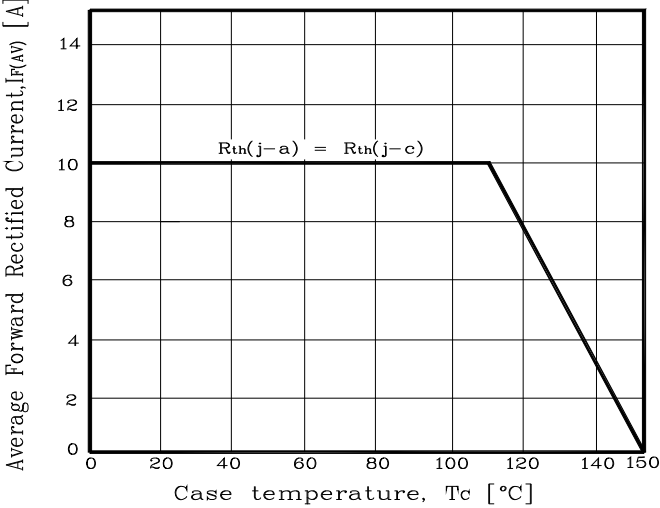


Fig. 4) Forward Power Dissipation

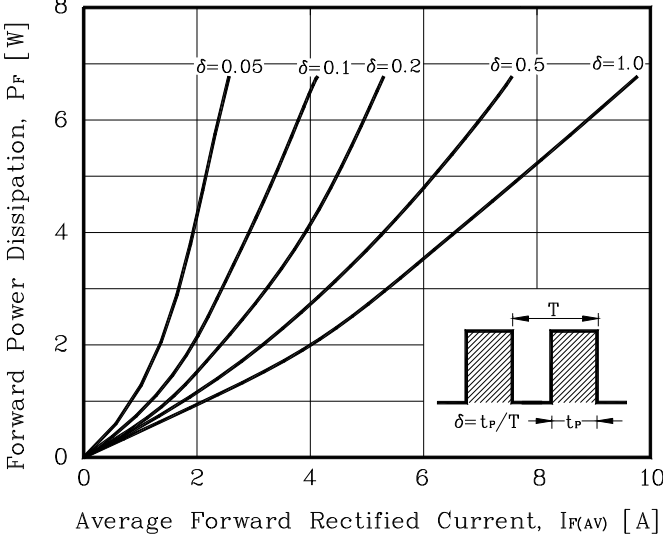


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

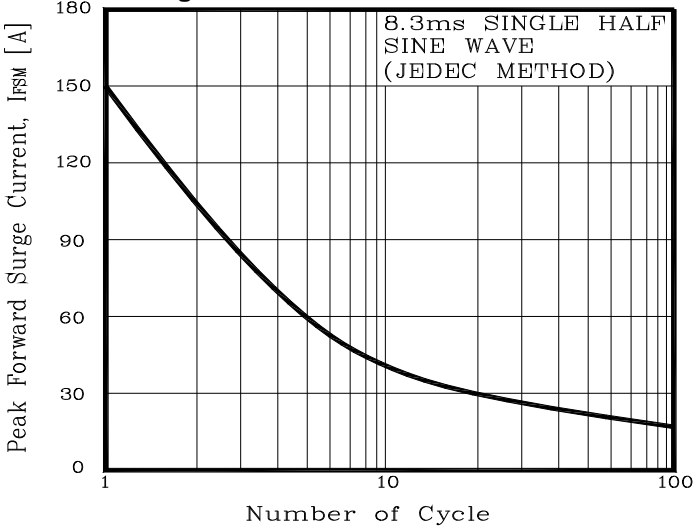
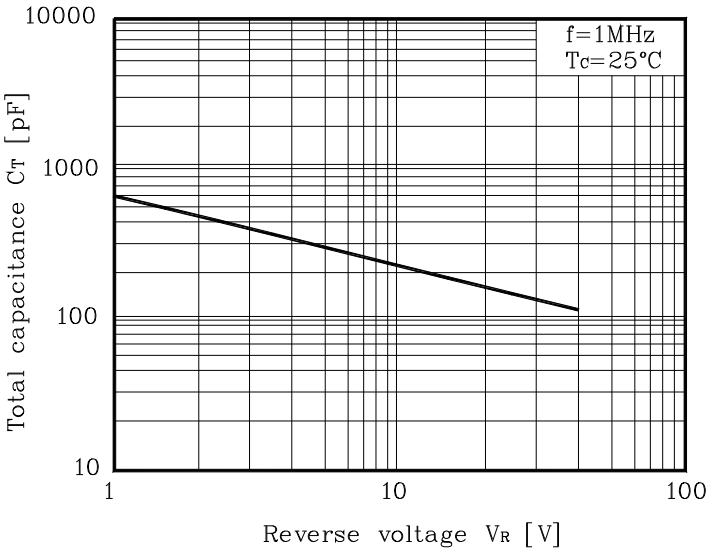
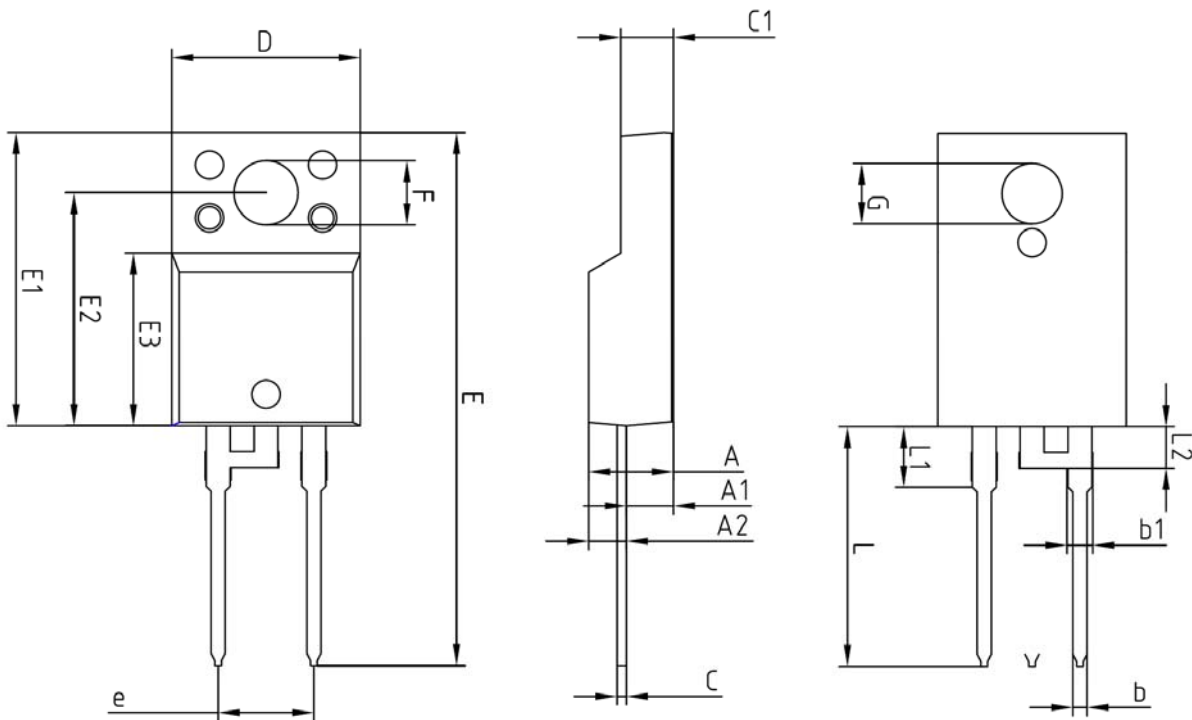


Fig. 6) Typical Junction Capacitance



Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	—	—	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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