KODENSHI AUK

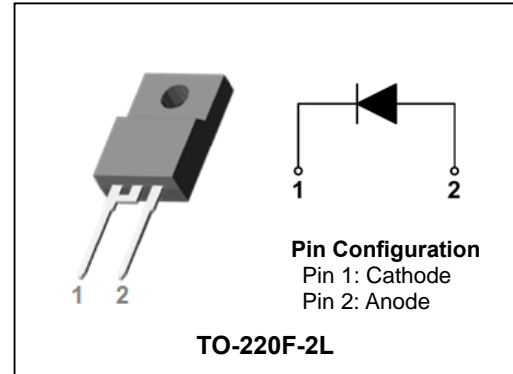## 200V, 8A POWER SCHOTTKY RECTIFIER

Features

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

Applications

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

Pin Configuration
Pin 1: Cathode
Pin 2: Anode

TO-220F-2L

Product Characteristics

$I_{F(AV)}$	8A
V_{RRM}	200V
V_{FM} at 125℃	0.78
I_{FSM}	180A

Description

The SDB8200PH 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.
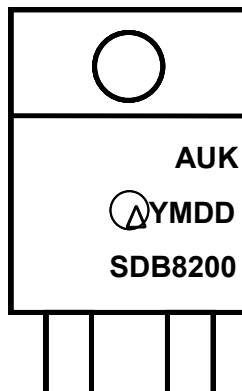
Ordering Information

Device	Marking Code	Package	Packaging
SDB8200PH	SDB8200	TO-220F-2L	Tube

Marking Information

AUK
YMDD
SDB8200

AUK = Manufacture Logo

Δ = Control Code of Manufacture

YMDD = Date Code Marking

 -. Y = Year Code

 -. M = Monthly Code

 -. DD = Daily Code

SDB8200 = 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	200	V
Maximum average forward rectified current	$I_{F(AV)}$	8	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	180	A
Storage temperature range	T_{stg}	-55℃ 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

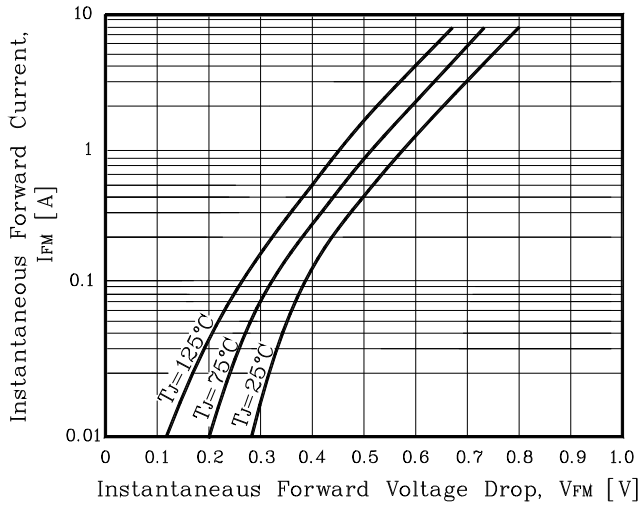| Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	V_{FM} [1]	I_{FM} = 15A	T_j=25℃	-	-	0.92	V
			T_j=125℃	-	0.70	0.78	V
Reverse leakage current	I_{RM} [1]	$V_R = V_{RRM}$	T_j=25℃	-	-	0.1	mA
			T_j=125℃	-	-	100	mA

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

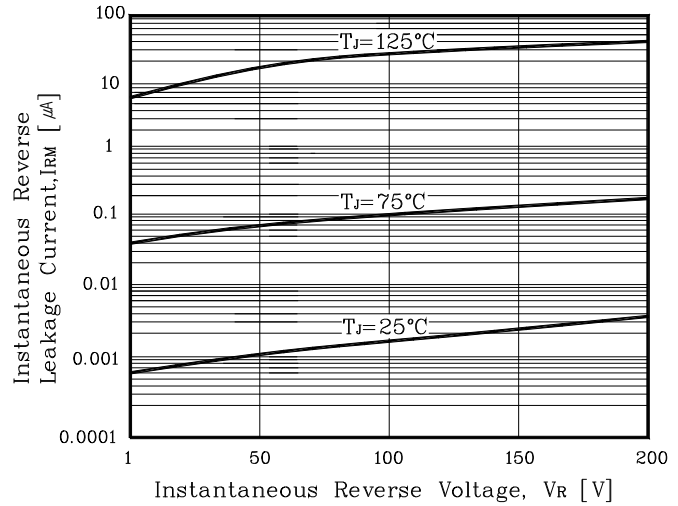To evaluate the conduction losses use the following equation:

$P = 0.64 \times I_{F(AV)} + 0.025\ I_F^2{}_{(RMS)}$
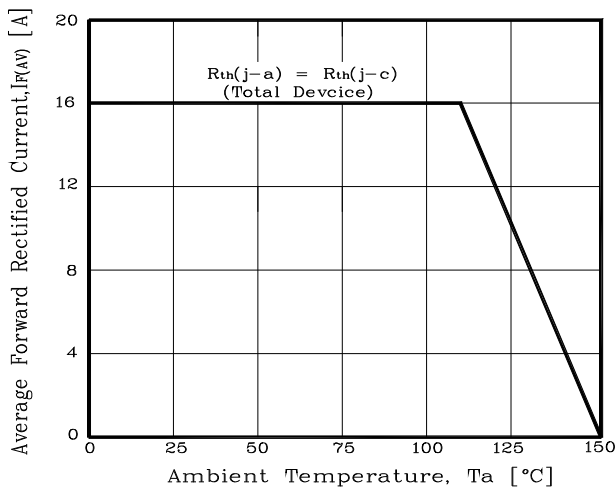

Rating and Characteristic Curves
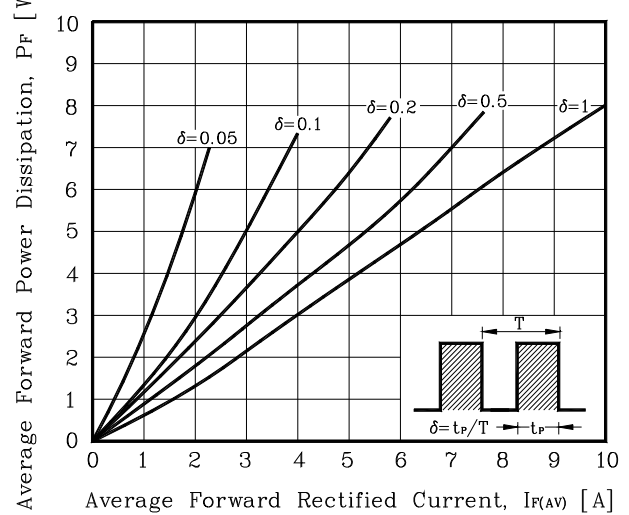
Fig. 1) Typical Forward Characteristics

Instantaneous Forward Current, I_{FM} [A] (vertical axis, 0.01 to 10)

$T_J=125°C$, $T_J=75°C$, $T_J=25°C$

Instantaneaus Forward Voltage Drop, V_{FM} [V] (horizontal axis, 0 to 1.0)

Fig. 2) Typical Reverse Characteristics

Instantaneous Reverse Leakage Current, I_{RM} [μA] (vertical axis, 0.0001 to 100)

$T_J=125°C$, $T_J=75°C$, $T_J=25°C$

Instantaneous Reverse Voltage, V_R [V] (horizontal axis, 1 to 200)

Fig. 3) Maximum Forward Derative Curve

Average Forward Rectified Current, $I_{F(AV)}$ [A] (vertical axis, 0 to 20)

$R_{th}(j-a) = R_{th}(j-c)$
(Total Devcice)

Ambient Temperature, T_a [°C] (horizontal axis, 0 to 150)

Fig. 4) Forward Power Dissipation

Average Forward Power Dissipation, P_F [W] (vertical axis, 0 to 10)

$\delta=0.05$, $\delta=0.1$, $\delta=0.2$, $\delta=0.5$, $\delta=1$

$\delta=t_P/T$

Average Forward Rectified Current, $I_{F(AV)}$ [A] (horizontal axis, 0 to 10)

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

Peak Forward Surge Current, I_{FSM} [A] (vertical axis, 0 to 210)

8.3ms SINGLE HALF SINE WAVE (JEDEC METHOD)

Number of Cycle (horizontal axis, 1 to 100)
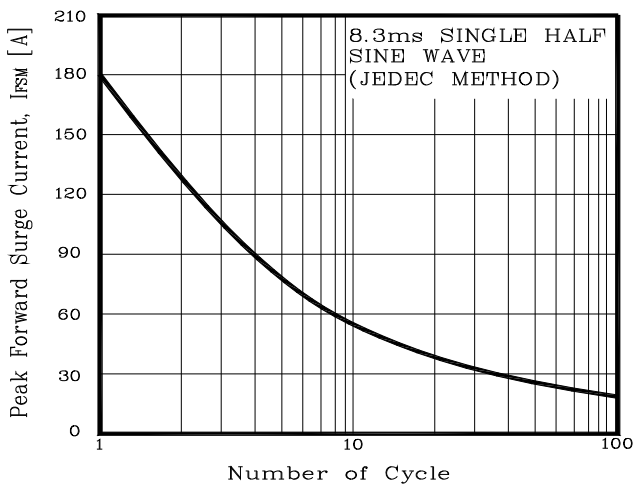
Fig. 6) Typical Junction Capacitance

Junction Capacitance, C_J [pF] (vertical axis, 10 to 1000)

f=1MHz
$T_J=25°C$

DC Reverse voltage, V_R [V] (horizontal axis, 1 to 100)
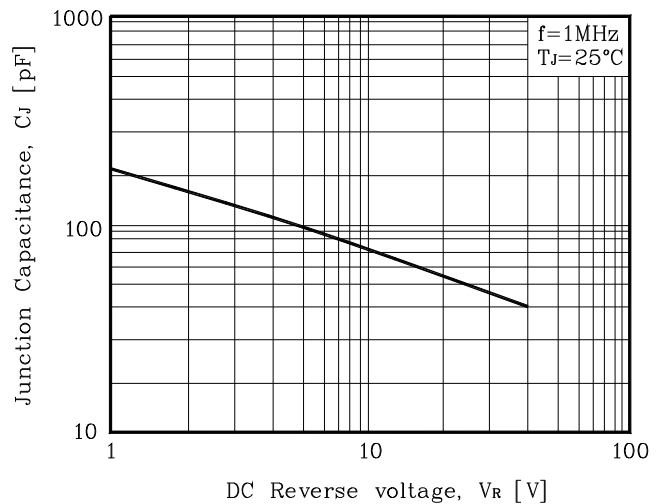
Package Outline Dimension
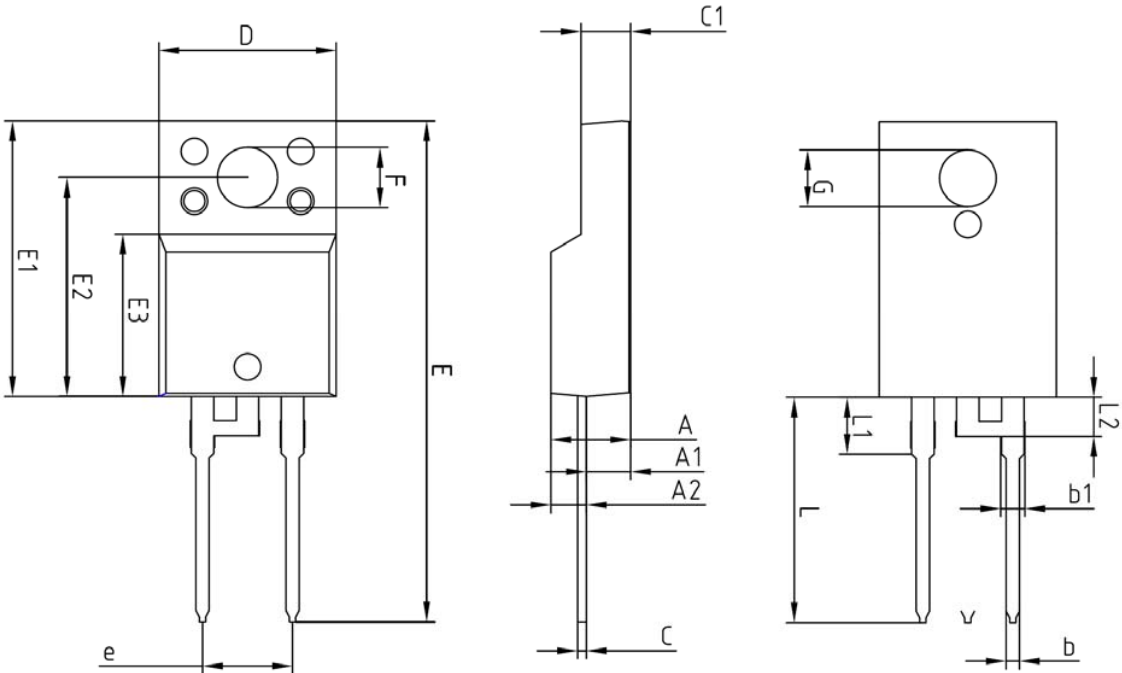
SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	–	–	4.60	
A1	2.45	2.50	2.55	
A2	1.95	2.00	2.05	
b	0.65	0.75	0.85	
b1	1.07	1.27	1.47	
C	0.40	0.50	0.60	
C1	2.70	2.80	2.90	
D	9.90	10.00	10.10	
E	28.00	–	28.60	
E1	15.50	15.60	15.70	
E2	12.30	12.40	12.50	
E3	9.15	9.20	9.25	
F	3.30	3.40	3.50	
G	3.10	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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