

## DUAL COMMON CATHODE SCHOTTKY RECTIFIER

### Features

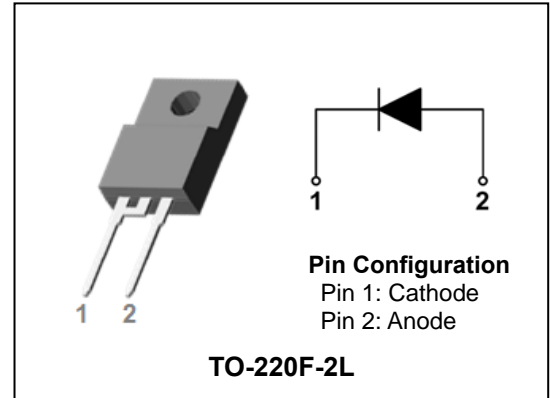
- Low forward voltage drop
- Low power loss and High efficiency
- Low leakage current
- High surge capability
- Full lead (Pb)-free and RoHS compliant device

### Applications

- Power supply - Output rectification
- Converter
- Free-wheeling diode
- Reverse battery protection
- Power inverters

### Description

The SDB5200PH has two schottky barriers arranged in a common cathode configuration. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.



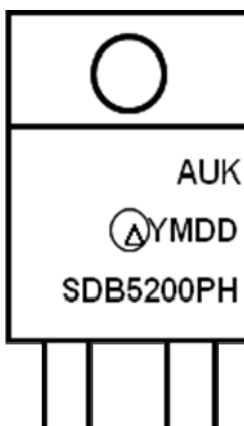
### Product Characteristics

$I_{F(AV)}$	<b>5A</b>
$V_{RRM}$	<b>200V</b>
$V_{FM}$ at 125°C	<b>0.72V (Typ.)</b>
$I_{FSM}$	<b>120A</b>

### Ordering Information

Device	Marking Code	Package	Packaging
SDB5200PH	SDB5200PH	TO-220F-2L	Tube

### Marking Information



**AUK = Manufacture Logo**

**Δ = Control Code of Manufacture**

**YMDD = Date Code Marking**

- Y = Year Code

- M = Monthly Code

- DD = Daily Code

**SDB5200PH = 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	$I_{F(AV)}$	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

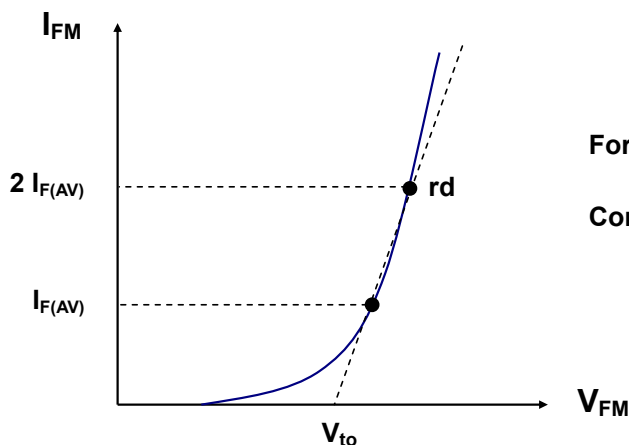
Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{th(j-c)}$	4.0	°C/W

## Electrical Characteristics (Per Diode)

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	0.95	V
			$T_j = 125^\circ C$	-	0.72	0.76	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	$C_j$	$V_R = 1V_{DC}, f=1MHz$	-	150	-	pF	

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

To evaluate the conduction losses use the following equation:  $P_F = 0.68 I_{F(AV)} + 0.032 I_{F(RMS)}^2$

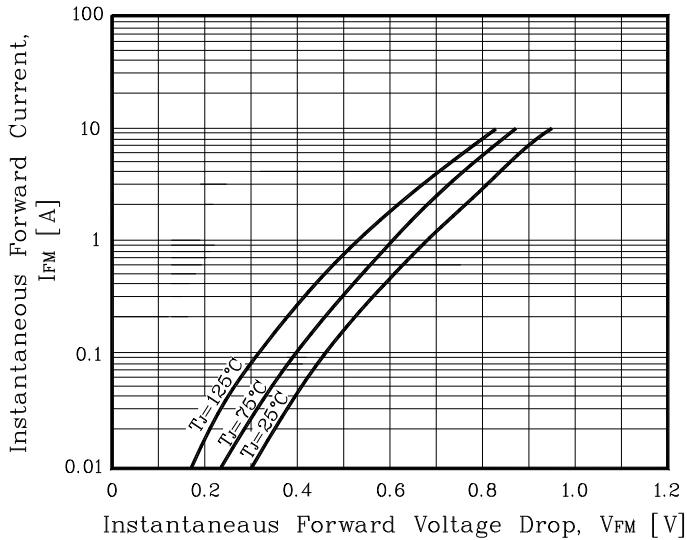


**Forward Voltage :**  $V_{FM} = V_{to} + rd I_{FM}$

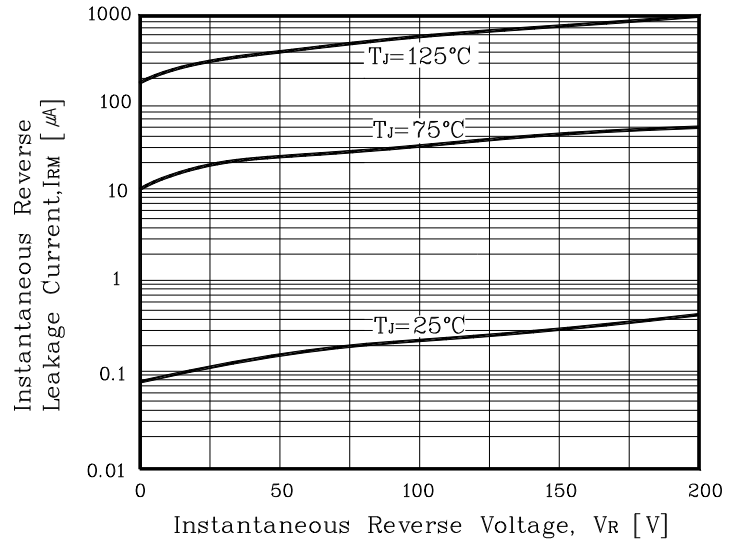
**Conduction Loss :**  $P_F = V_{to} I_{F(AV)} + rd I_{F(RMS)}^2$

## Rating and Characteristic Curves

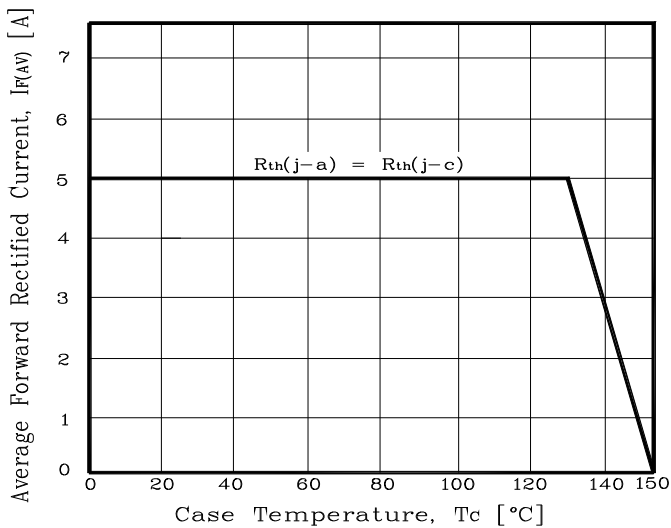
**Fig. 1) Typical Forward Characteristics**



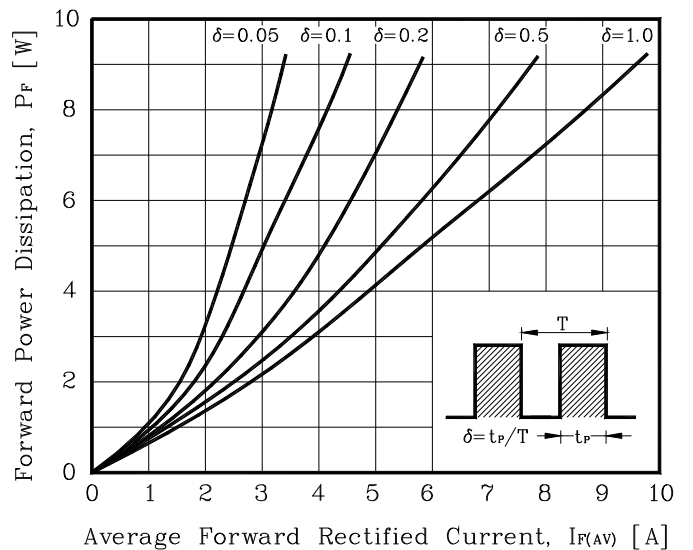
**Fig. 2) Typical Reverse Characteristics**



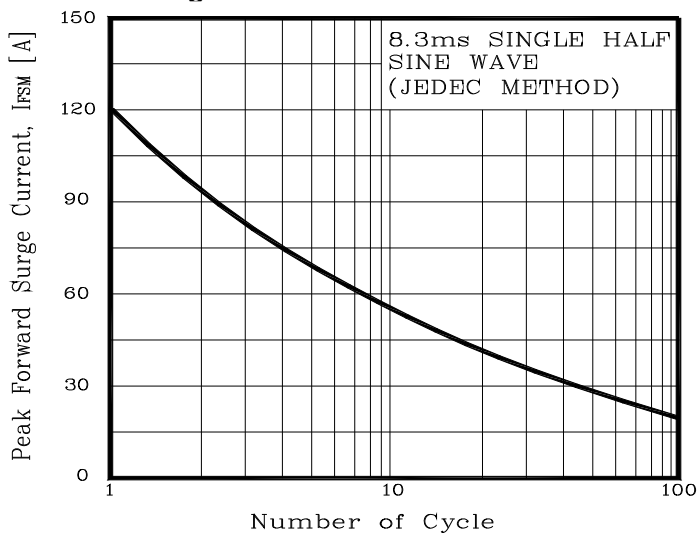
**Fig. 3) Maximum Forward Derivative Curve**



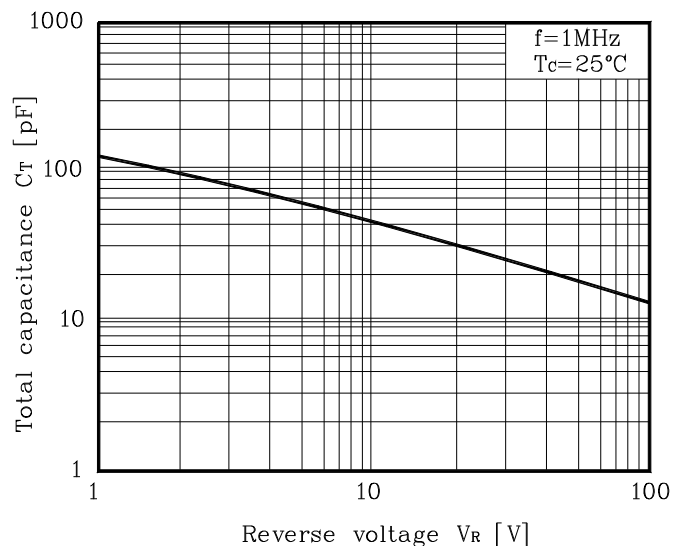
**Fig. 4) Forward Power Dissipation**



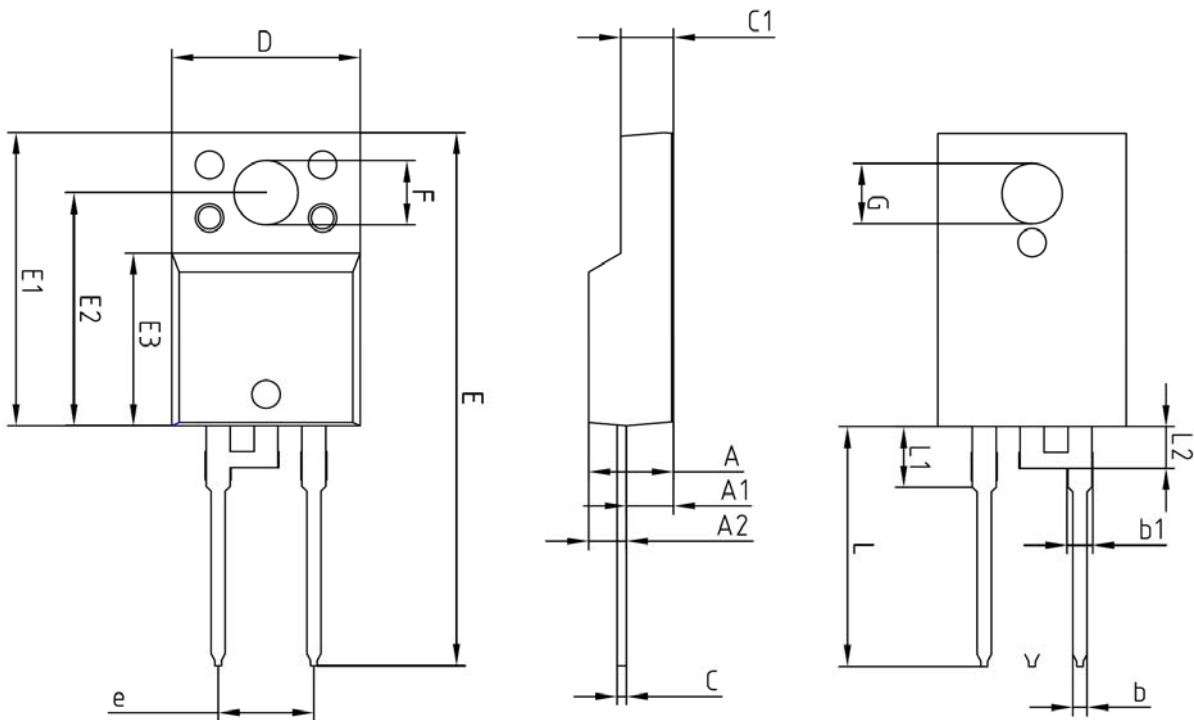
**Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current**



**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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