KODENSHI AUK

# SDB2080PR

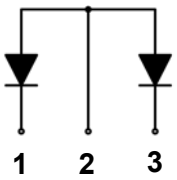
**Schottky Barrier Rectifier**

## DUAL COMMON ANODE SCHOTTKY RECTIFIER

### Features

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

1 2 3



1 2 3

**Pin 1, 3 : Cathode**

**Pin 2: Anode**

**TO-220F-3L**

### Applications

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

**Product Characteristics**

| | |
|---|---|
| $I_{F(AV)}$ | 2 X 10A |
| $V_{RRM}$ | 80V |
| $V_{FM}$ at 125℃ | 0.65V (Typ.) |
| $I_{FSM}$ | 150A |

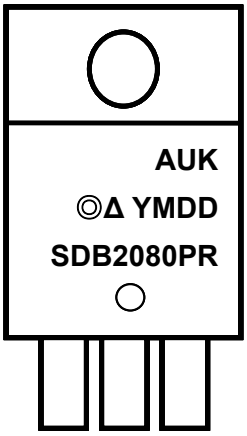
### Description

The SDB2080PR has two schottky barriers arranged in a common anode configuration. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

### Ordering Information

| Device | Marking Code | Package | Packaging |
|---|---|---|---|
| SDB2080PR | SDB2080PR | TO-220F-3L | Tube |

### Marking Information




AUK = Manufacture Logo

Δ = Control Code of Manufacture

YMDD = Date Code Marking

-. Y = Year Code

-. M = Monthly Code

-. D = Daily Code

SDB2080PR = Specific Device Code

## Absolute Maximum Ratings (Limiting Values, Per diode)

| Characteristic | | Symbol | Value | Unit |
|---|---|---|---|---|
| Maximum repetitive reverse voltage<br>Maximum working peak reverse voltage<br>Maximum DC blocking voltage | | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 80 | V |
| Maximum average forward rectified current | per diode | $I_{F(AV)}$ | 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 to +150 | ℃ |
| Maximum operating junction temperature | | $T_j$ | 150 | ℃ |

## Thermal Characteristics

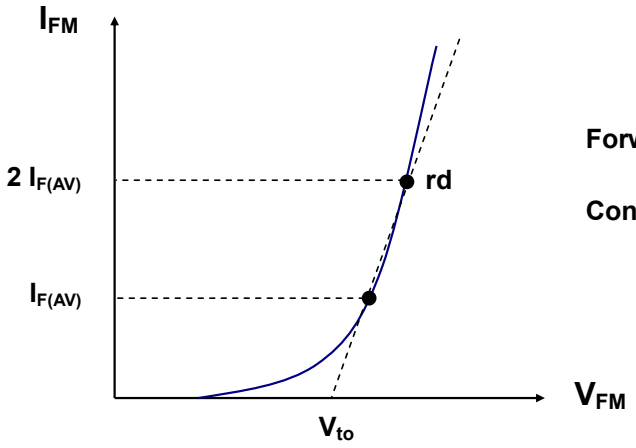
| Characteristic | | Symbol | Value | Unit |
|---|---|---|---|---|
| Maximum thermal resistance junction to case | per diode | $R_{th(j-c)}$ | 4.0 | ℃/W |
| | total device | | 3.6 | |

## Electrical Characteristics (Per Diode)

| Characteristic | Symbol | Test Condition | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Peak forward voltage drop | $V_{FM}$ (1) | $I_{FM}$ = 10A | $T_j$=25℃ | - | 0.70 | 0.80 | V |
| | | | $T_j$=125℃ | - | 0.65 | 0.72 | V |
| Reverse leakage current | $I_{RM}$ (1) | $V_R = V_{RRM}$ | $T_j$=25℃ | - | - | 0.6 | mA |
| | | | $T_j$=125℃ | - | - | 100 | mA |
| Junction capacitance | $C_j$ | $V_R$ = 1$V_{DC}$, 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: $P_F = 0.36 \times I_{F(AV)} + 0.0335\ I_F^2{}_{(RMS)}$




**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 (Per diode)**

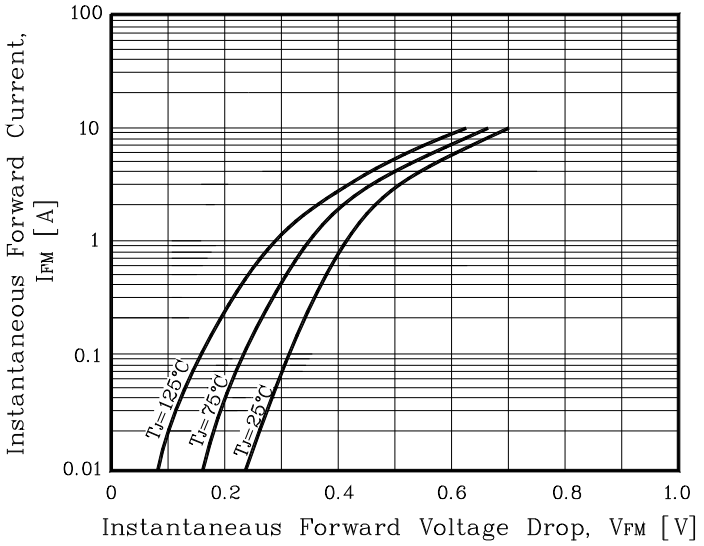



**Fig. 2) Typical Reverse Characteristics (Per diode)**

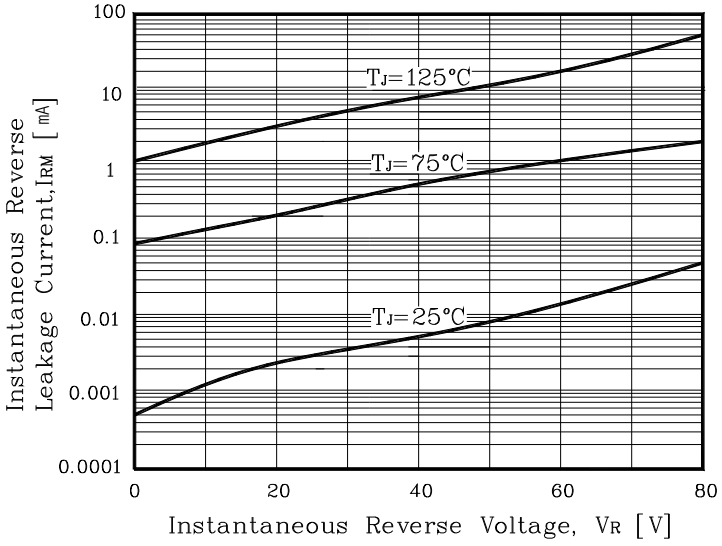



**Fig. 3) Maximum Forward Derative Curve**

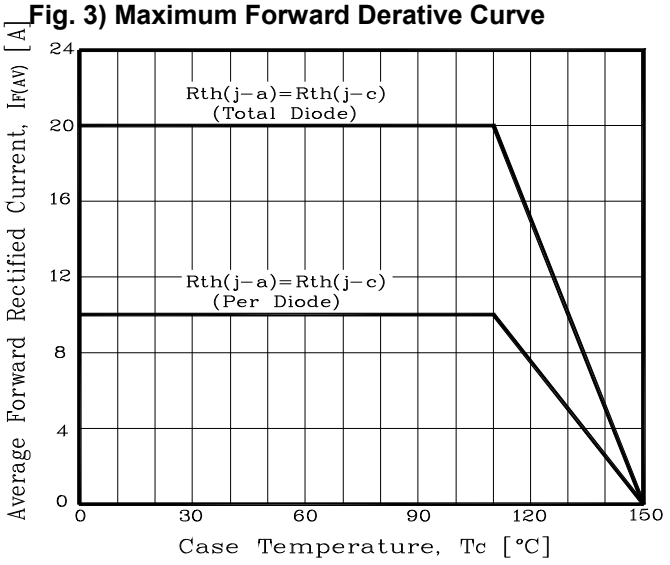



**Fig. 4) Forward Power Dissipation (Per diode)**

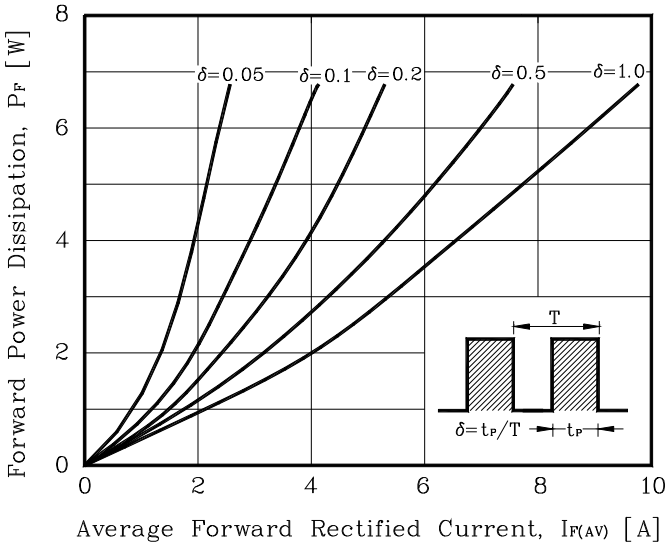



**Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current (Per diode)**

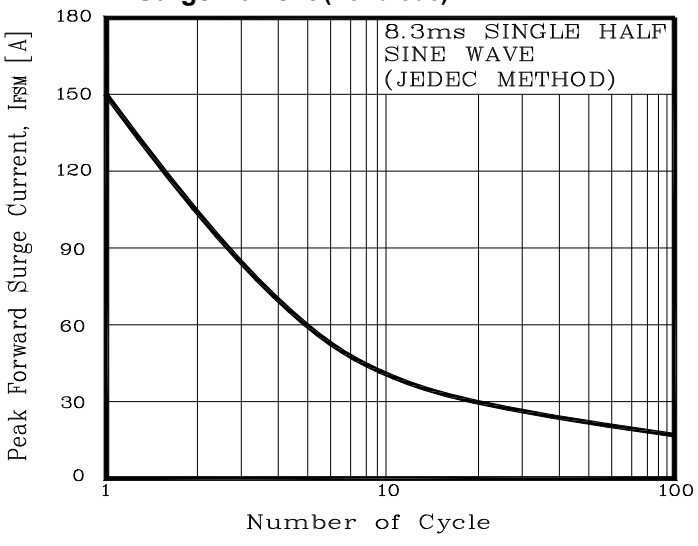
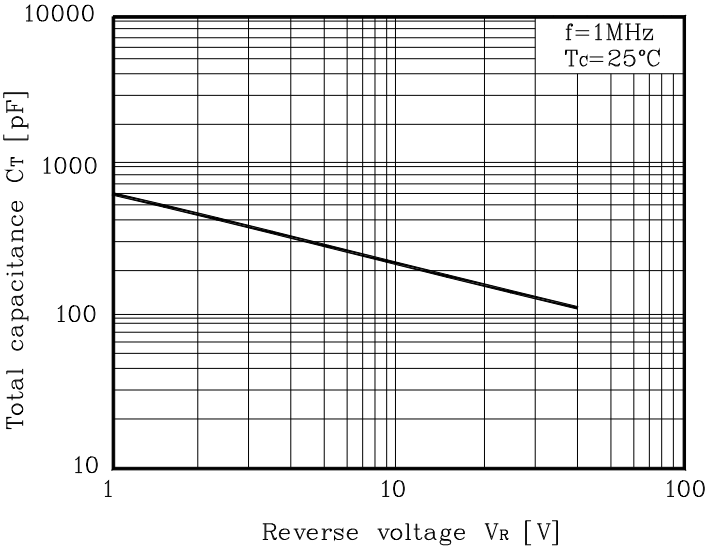
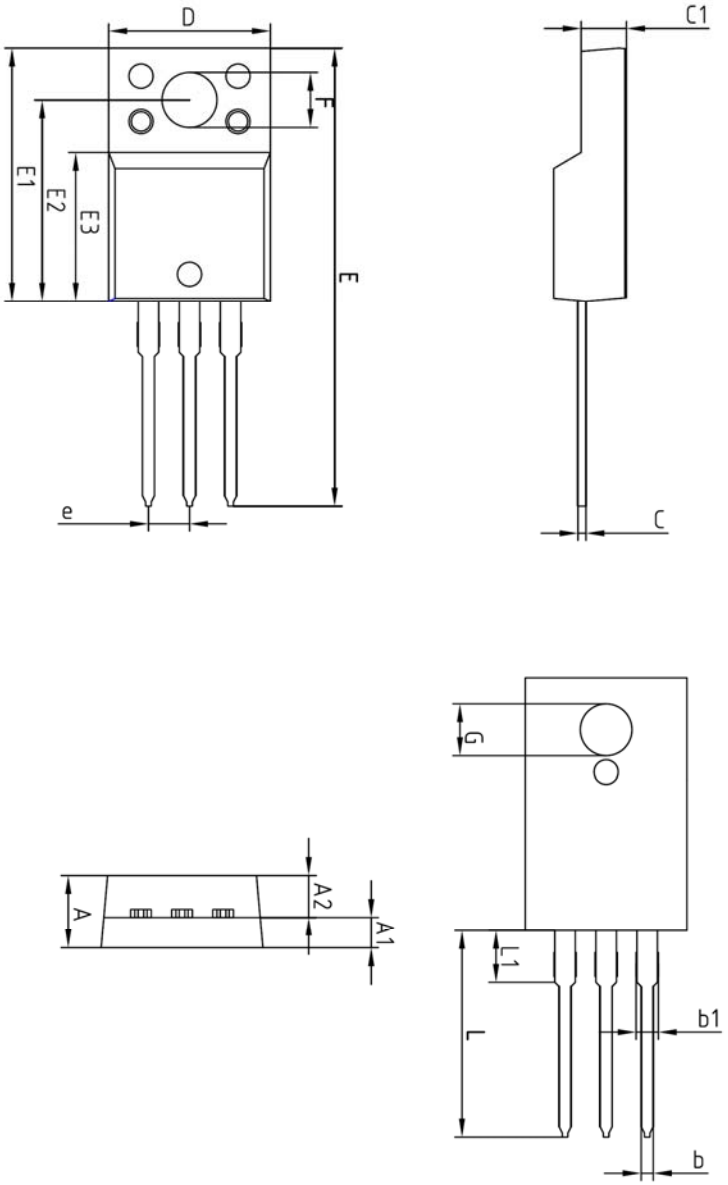



**Fig. 6) Typical Junction Capacitance (Per diode)**



## Package Outline Dimension (Unit: mm)




| 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 | 2.34 | 2.54 | 2.74 | |

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