

## DUAL COMMON CATHODE SCHOTTKY RECTIFIER

### Features

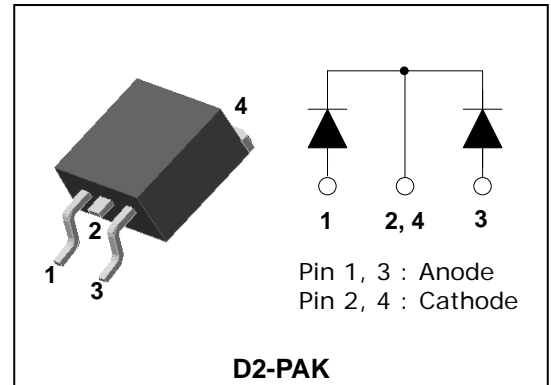
- Low forward voltage drop and leakage current
- Low power loss and High efficiency
- High surge capability
- Dual common cathode rectifier
- Full lead(Pb)-free device and RoHS compliant device

### Applications

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

### Description

The SDB10D60D2 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.



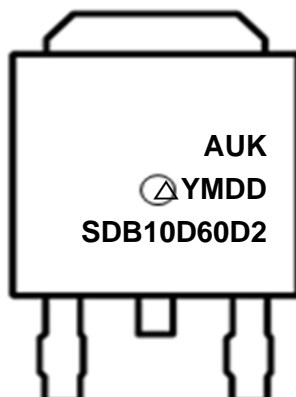
### Product Characteristics

|                   |        |
|-------------------|--------|
| $I_{F(AV)}$       | 2 X 5A |
| $V_{RRM}$         | 60V    |
| $V_{FM}$ at 125°C | 0.55V  |
| $I_{FSM}$         | 120A   |

### Ordering Information

| Device     | Marking Code | Package | Packaging   |
|------------|--------------|---------|-------------|
| SDB10D60D2 | SDB10D60D2   | D2-PAK  | Tape & Reel |

### Marking Information



AUK = Manufacture Logo

Δ = Control Code of Manufacture

YMDD = Date Code Marking

- Y = Year Code

- M = Monthly Code

- DD = Daily Code

SDB10D60D2 = Specific Device Code

## Absolute Maximum Ratings (Limiting Values)

| 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>$V_R$ | 60          | V    |
| Maximum average forward rectified current   | per diode    | $I_{F(AV)}$                     | 5           | A    |
|   | total device |                                 | 10          |      |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode               |              | $I_{FSM}$                       | 120         | A    |
| Storage temperature range   |              | $T_{stg}$                       | -55 to +150 | °C   |
| Maximum operating junction temperature  |              | $T_j$                           | 150         |      |

## Thermal Characteristics

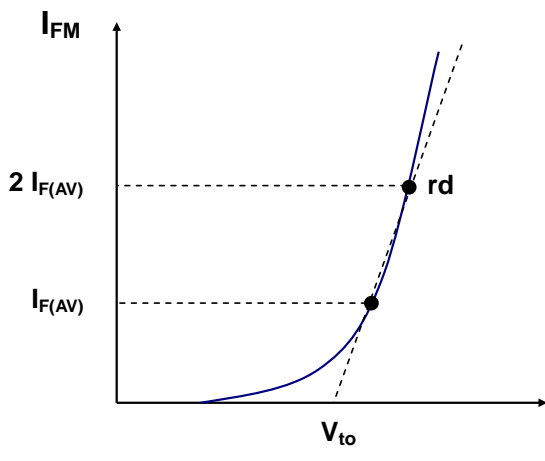
| Characteristic                              |              | Symbol        | Value | Unit |
|---|--------------|---------------|-------|------|
| Maximum thermal resistance junction to case | per diode    | $R_{th(j-c)}$ | 3.0   | °C/W |
|   | total device |               | 2.8   |      |

## Electrical Characteristics (Per Diode)

| Characteristic            | Symbol         | Test Condition           | Min.                | Typ. | Max. | Unit |    |
|---------------------------|----------------|--------------------------|---------------------|------|------|------|----|
| Peak forward voltage drop | $V_{FM}^{(1)}$ | $I_{FM} = 5A$            | $T_j = 25^\circ C$  | -    | -    | 0.65 | V  |
|                           |                |                          | $T_j = 125^\circ C$ | -    | -    | 0.55 |    |
| Reverse leakage current   | $I_{RM}^{(1)}$ | $V_R = V_{RRM}$          | $T_j = 25^\circ C$  | -    | -    | 0.5  | mA |
|                           |                |                          | $T_j = 125^\circ C$ | -    | -    | 50   |    |
| Junction capacitance      | $C_j$          | $V_R = 10V_{DC}, f=1MHz$ | -                   | 160  | -    | pF   |    |

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

To evaluate the conduction losses use the following equation:  $P_F = 0.36 I_{F(AV)} + 0.043 I_{F(RMS)}^2$

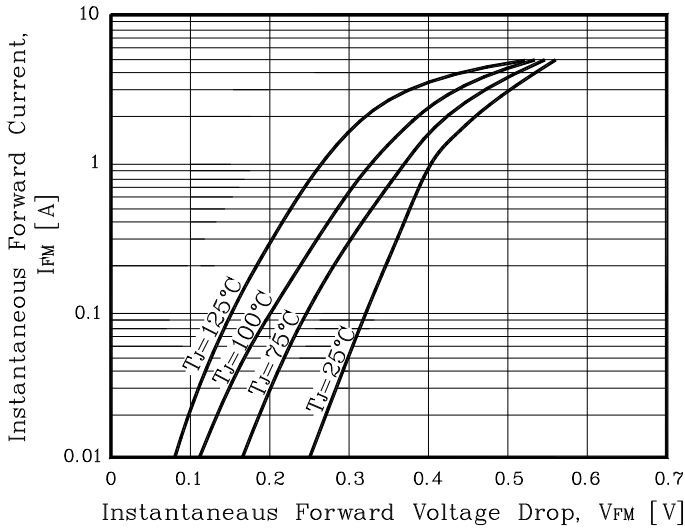


**Forward Voltage :**  $V_{FM} = V_{to} + rd I_{FM}$

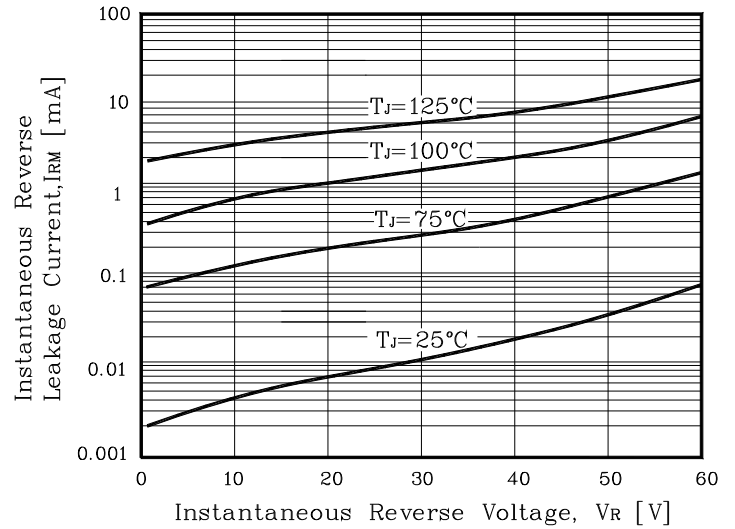
**Conduction Loss :**  $P_F = V_{to} I_{F(AV)} + rd I_{F(RMS)}^2$

## Rating and Characteristic Curves

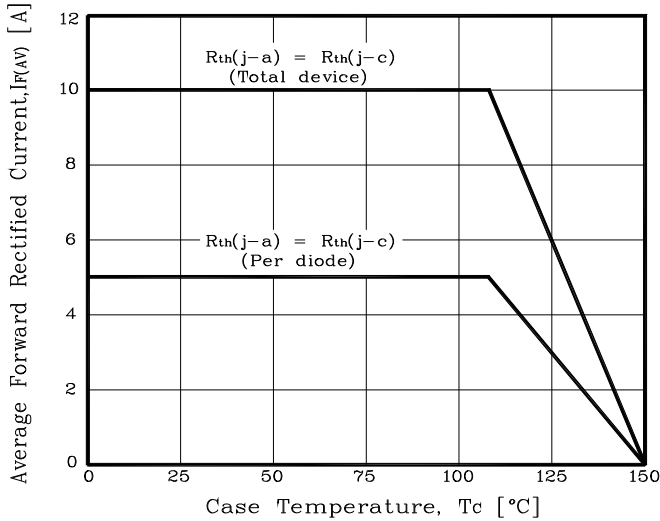
**Fig. 1) Typical Forward Characteristics (Per diode)**



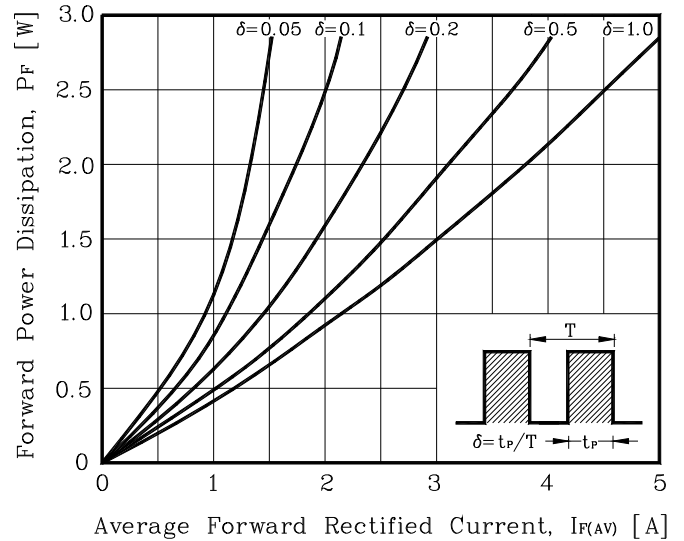
**Fig. 2) Typical Reverse Characteristics (Per diode)**



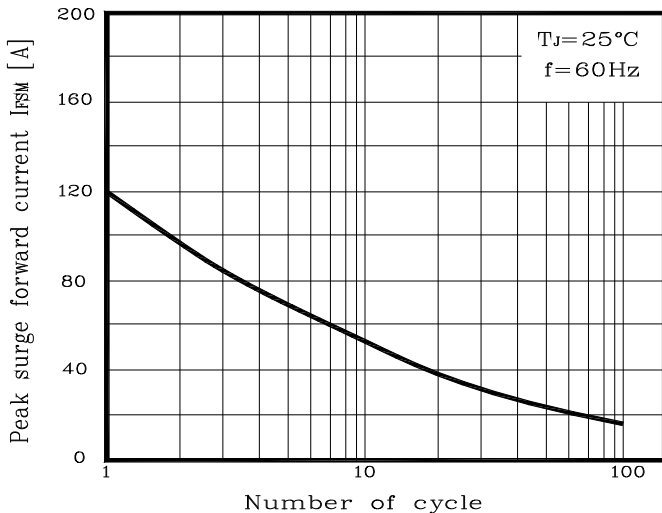
**Fig. 3) Maximum Forward Derivative Curve**



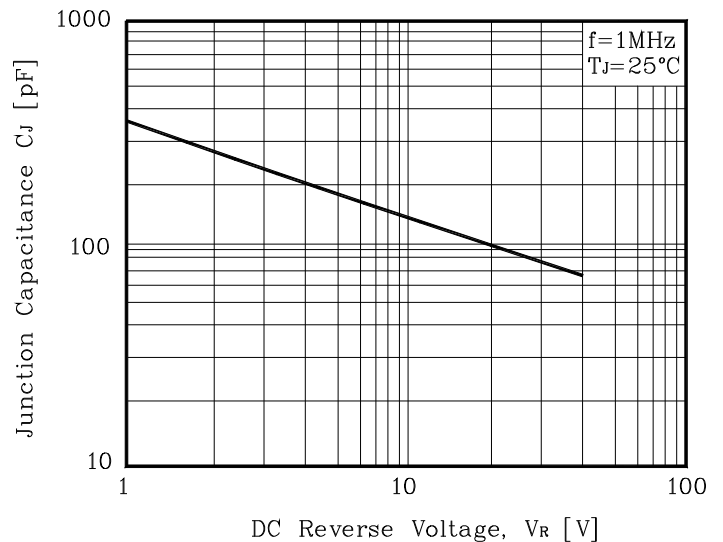
**Fig. 4) Forward Power Dissipation (Per diode)**



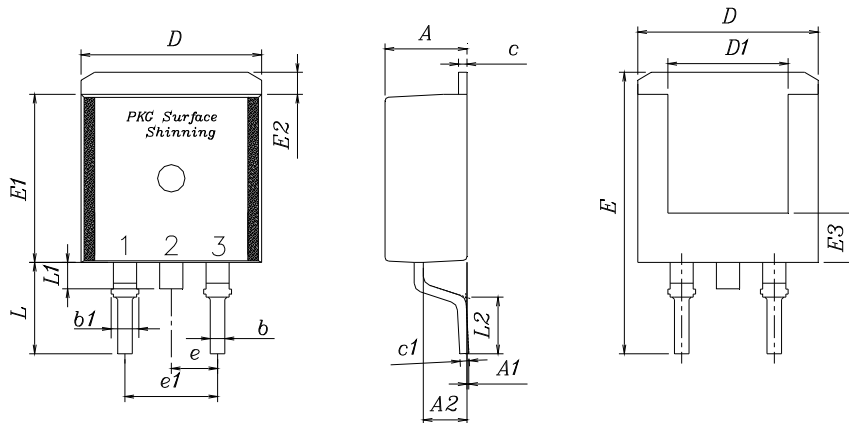
**Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current (Per diode)**



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

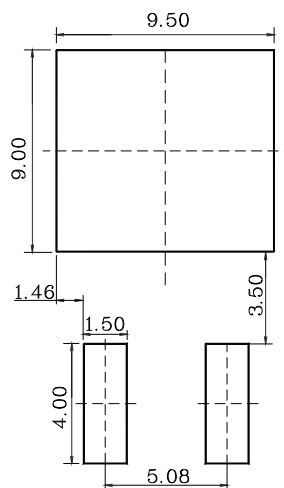


## Package Outline Dimension



| SYMBOL | MILLIMETERS |         |         | NOTE |
|--------|-------------|---------|---------|------|
|        | MINIMUM     | NOMINAL | MAXIMUM |      |
| A      | 4.35        | 4.50    | 4.65    |      |
| A1     | —           | —       | 0.15    |      |
| A2     | 2.20        | 2.40    | 2.60    |      |
| b      | 0.70        | 0.80    | 0.90    |      |
| b1     | 1.17        | 1.27    | 1.37    |      |
| c      | 0.40        | 0.50    | 0.60    |      |
| c1     | 0.40        | 0.50    | 0.60    |      |
| D      | 9.80        | 10.00   | 10.20   |      |
| D1     | 6.40        | 6.60    | 6.80    |      |
| E      | 15.00       | 15.40   | 15.80   |      |
| E1     | 9.05        | 9.20    | 9.35    |      |
| E2     | 1.00        | 1.20    | 1.40    |      |
| E3     | 2.50        | 2.70    | 2.90    |      |
| e      | 2.34        | 2.54    | 2.74    |      |
| e1     | 4.88        | 5.08    | 5.28    |      |
| L      | 4.60        | 5.00    | 5.40    |      |
| L1     | 1.40        | 1.45    | 1.50    |      |
| L2     | 2.50        | —       | —       |      |

※ Recommend PCB solder land (Unit : mm)



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