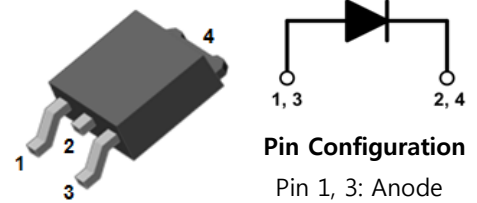


## Ultrafast Recovery Power Rectifier

### General Description

The SFN10B400D is ideally as boost diode in discontinuous or critical mode power factor corrections. The planar structure and the platinum doper life time control guarantee the best overall performance, ruggedness reliability characteristics. The device is also intended for use as a freewheeling diode in power supplies and other power switching applications.



#### Pin Configuration

Pin 1, 3: Anode  
Pin 2, 4: Cathode

**TO-252**

### Features and Benefits

- Low forward drop voltage
- Ultrafast recovery time and high speed switching
- Full lead (Pb)-free device and RoHS compliant device

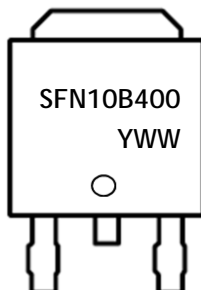
### Applications

- Switching power supply
- Power inverters
- Power conversion system

### Ordering Information

| Part Number       | Marking Code     | Package       | Packaging              |
|-------------------|------------------|---------------|------------------------|
| <b>SFN10B400D</b> | <b>SFN10B400</b> | <b>TO-252</b> | <b>Tape &amp; Reel</b> |

### Marking Information



SFN10B400 = Specific Device Code  
YWW = Year & Week Code Marking  
-. Y = Year Code  
-. WW = Week Code

# SFN10B400D

## Absolute Maximum Ratings (Limiting values at 25°C, unless otherwise specified)

| Characteristic  | Symbol                          | Ratings     | Unit |
|---|---------------------------------|-------------|------|
| Maximum repetitive reverse voltage<br>Maximum working peak reverse voltage<br>Maximum DC blocking voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 400         | V    |
| Maximum average forward rectified current   | $I_{F(AV)}$                     | 10          | A    |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load                         | $I_{FSM}$                       | 120         | A    |
| Storage temperature range   | $T_{stg}$                       | -45 to +150 | °C   |
| Maximum operating junction temperature  | $T_J$                           | 150         |      |

## Thermal Characteristics

| Characteristic             | Symbol        | Ratings | Unit |
|----------------------------|---------------|---------|------|
| Maximum thermal resistance | $R_{th(j-c)}$ | 4.0     | °C/W |

## Electrical Characteristics

| Characteristic            | Symbol        | Test Condition                        | Min.                | Typ. | Max. | Unit |
|---------------------------|---------------|---------------------------------------|---------------------|------|------|------|
| Peak forward voltage drop | $V_{FM}^{1)}$ | $I_{FM} = 10A$<br>$T_J = 25^\circ C$  | -                   | 1.34 | 1.7  | V    |
| Reverse leakage current   | $I_{RM}^{2)}$ | $V_R = V_{RRM}$<br>$T_J = 25^\circ C$ | -                   | -    | 5    | uA   |
|                           |               |                                       | $T_J = 125^\circ C$ | -    | -    |      |
| Reverse recovery time     | $t_{rr}$      | $I_F = 1A, di/dt = -100 A/us$         | -                   | 18   | 22   | ns   |
| Junction capacitance      | $C_j$         | $V_R = 10V_{DC}, f=1MHz$              | -                   | 42   | -    | pF   |

<sup>1)</sup> Pulse test:  $t_p \leq 380us$ , Duty cycle  $\leq 2\%$

<sup>2)</sup> Pulse test:  $t_p \leq 20ms$ , Duty cycle  $\leq 2\%$

## Typical Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

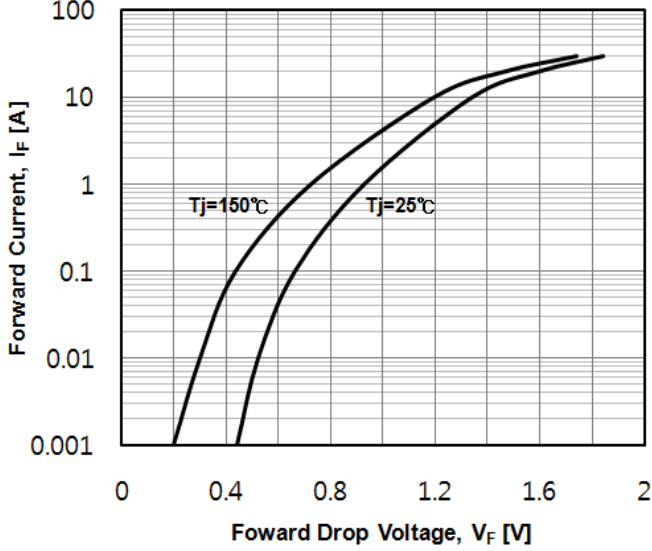


Fig. 2) Typical Reverse Characteristics

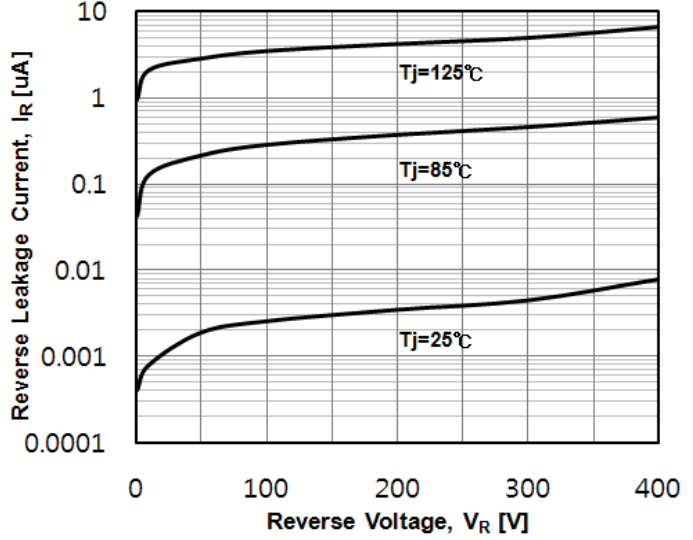


Fig. 3) Typical Junction Capacitance Characteristics

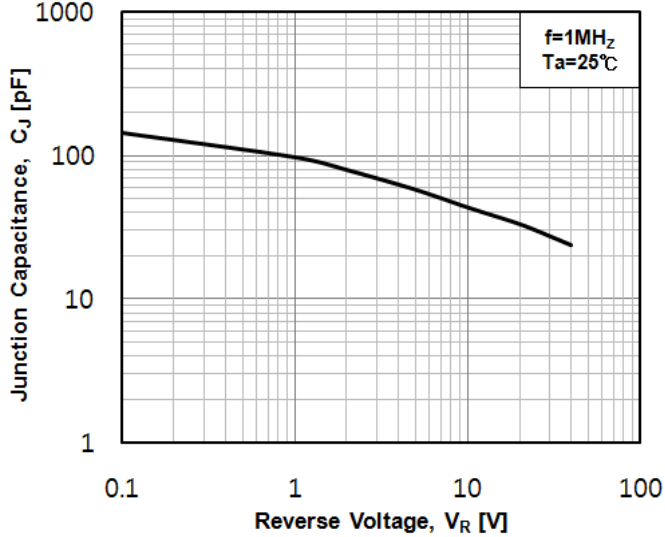


Fig. 4) Peak Forward Surge Current Characteristics

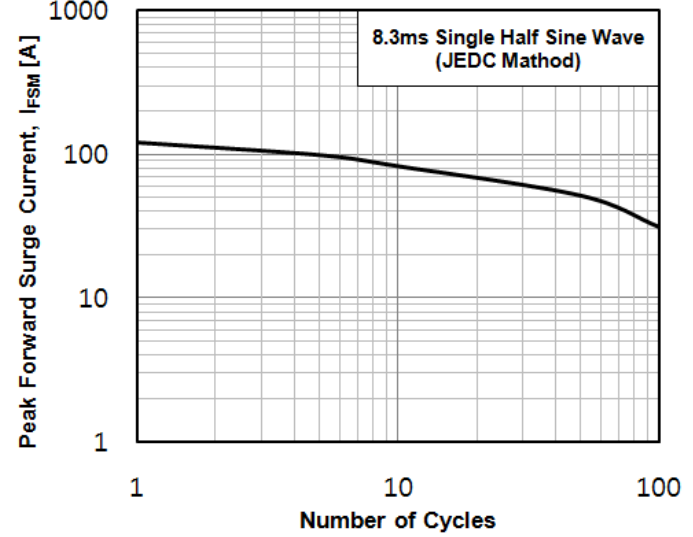


Fig. 5) Thermal Impedance Characteristics

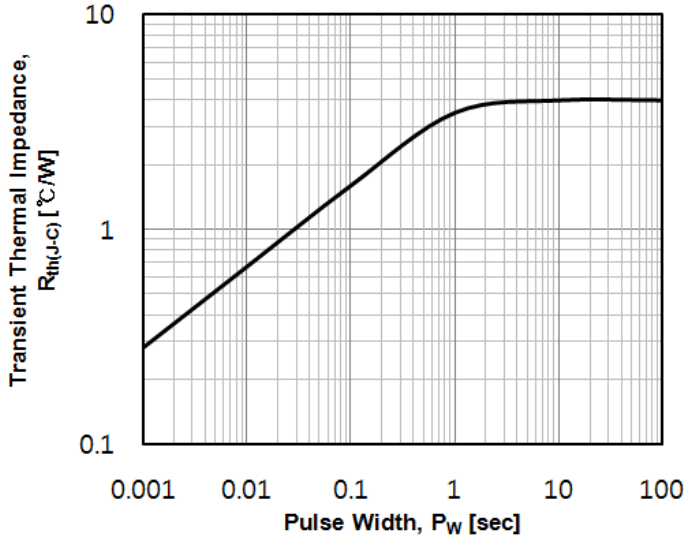
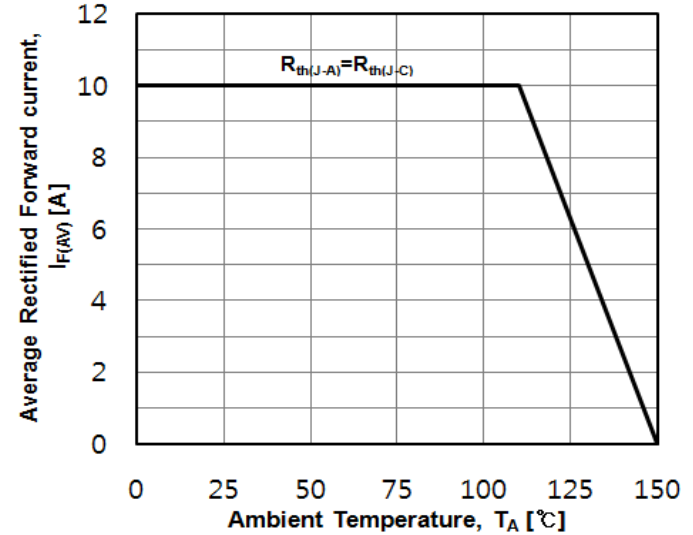
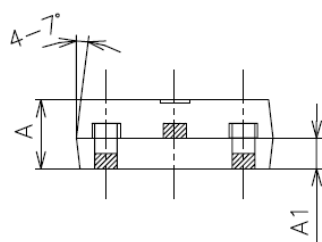
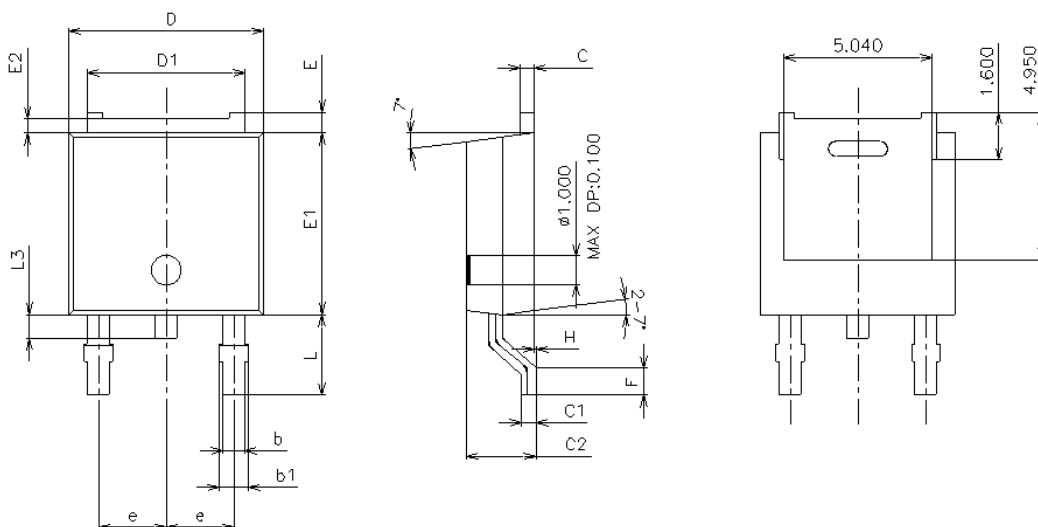


Fig. 6) Average Forward Current Characteristics

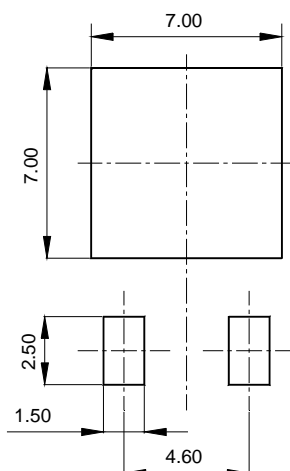


## Package Outline Dimensions (Unit: mm)



| SYMBOL | MILLIMETERS |         |         | NOTE |
|--------|-------------|---------|---------|------|
|        | MINIMUM     | NOMINAL | MAXIMUM |      |
| D      | 6.40        | 6.60    | 6.80    |      |
| D1     | 5.14        | 5.34    | 5.54    |      |
| E      | 0.50        | 0.70    | 0.90    |      |
| E1     | 5.90        | 6.10    | 6.30    |      |
| E2     | 0.50 TYP    |         |         |      |
| A      | 2.20        | 2.30    | 2.40    |      |
| A1     | 0.87        | 1.07    | 1.27    |      |
| C      | 0.40        | 0.50    | 0.60    |      |
| C1     | 0.40        | 0.50    | 0.60    |      |
| C2     | 2.10        | 2.30    | 2.50    |      |
| L      | 2.50        | 2.70    | 2.90    |      |
| L3     | 0.60        | 0.80    | 1.00    |      |
| b      | 0.66        | 0.76    | 0.86    |      |
| b1     | 0.96 MAX    |         |         |      |
| e      | 2.10        | 2.30    | 2.50    |      |
| F      | 0.80 MIN    |         |         |      |
| H      | 0.00        | -       | 0.10    |      |

## ※ Recommended Land Pattern (Unit: mm)



**The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).**

**Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..**

**Specifications mentioned in this publication are subject to change without notice.**