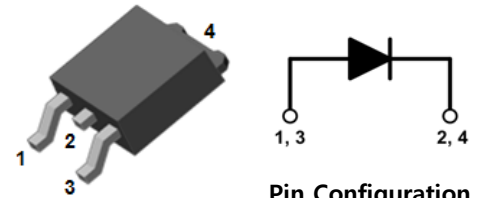


ULTRAFast RECOVERY POWER RECTIFIER

Features

- Ultrafast recovery time
- High voltage and high reliability
- High speed switching
- Low power loss and High efficiency
- Halogen-free component and RoHS compliant device



Pin Configuration

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

Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits
- DC-DC converter systems

TO-252

Product Characteristics

| | |
|-----------------|------|
| $I_{F(AV)}$ | 10A |
| V_{RRM} | 600V |
| t_{rr} (Typ.) | 22ns |

Description

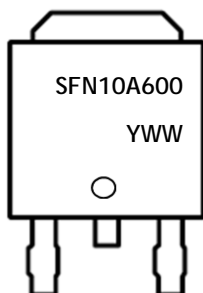
The SFN10A600D is ideally as boost diode in discontinuous or critical mode power factor corrections. The planar structure and the platinum doper life time control guarantee the best overall performance, ruggedness and reliability characteristics.

The device is also intended for use as a freewheeling diode in power supplies and other power switching applications.

Ordering Information

| Device | Marking Code | Package | Packaging |
|------------|--------------|---------|-------------|
| SFN10A600D | SFN10A600 | TO-252 | Tape & Reel |

Marking Information



SFN10A600D = Specific Device Code

YWW = Year & Week Code Marking

-. Y = Year Code

-. WW = Week 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 | 600 | 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 per diode | I_{FSM} | 100 | 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 | °C/W |

Electrical Characteristics

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---------------------------|----------------|------------------------------------|------|------|------|------|
| Peak forward voltage drop | $V_{FM}^{(1)}$ | $I_{FM} = 10A$ $T_J = 25^\circ C$ | - | 1.58 | 2.1 | V |
| Reverse leakage current | $I_{RM}^{(1)}$ | $V_R = V_{RRM}$ $T_J = 25^\circ C$ | - | - | 5 | uA |
| | | $T_J = 125^\circ C$ | - | - | 200 | uA |
| Reverse recovery time | t_{rr} | $I_F = 1A$, $di/dt = -100 A/us$ | - | 22 | 27 | ns |
| Junction capacitance | C_j | $V_R = 10V_{DC}$, $f=1MHz$ | - | 38 | - | pF |

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

Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

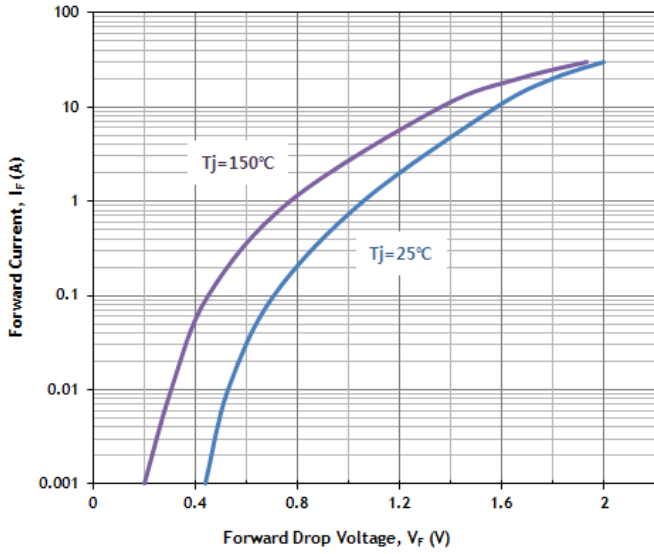


Fig. 2) Typical Reverse Characteristics

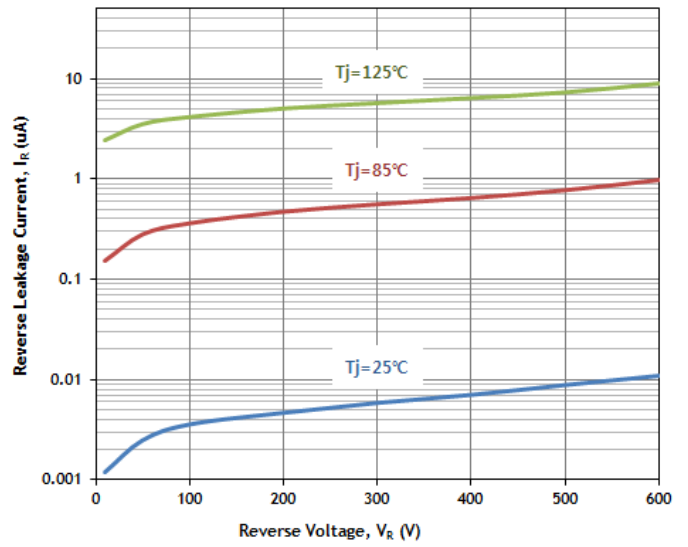


Fig. 3) Typical Junction Capacitance Characteristics

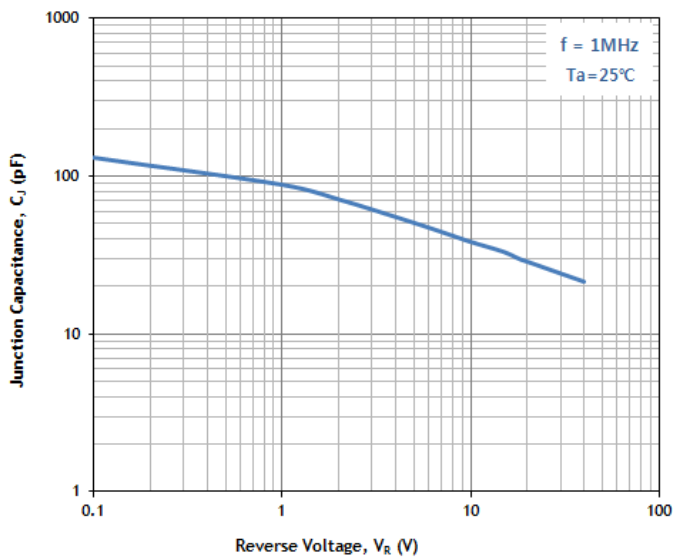


Fig. 4) Peak Forward Surge Current Characteristics

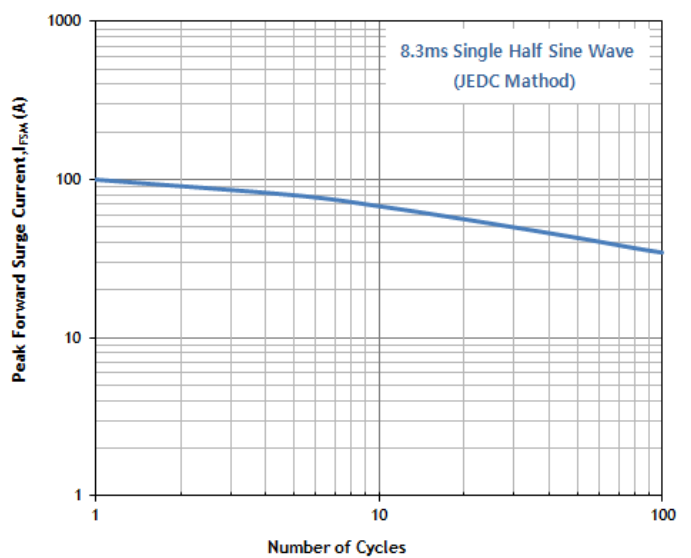


Fig. 5) Thermal Impedance Characteristics

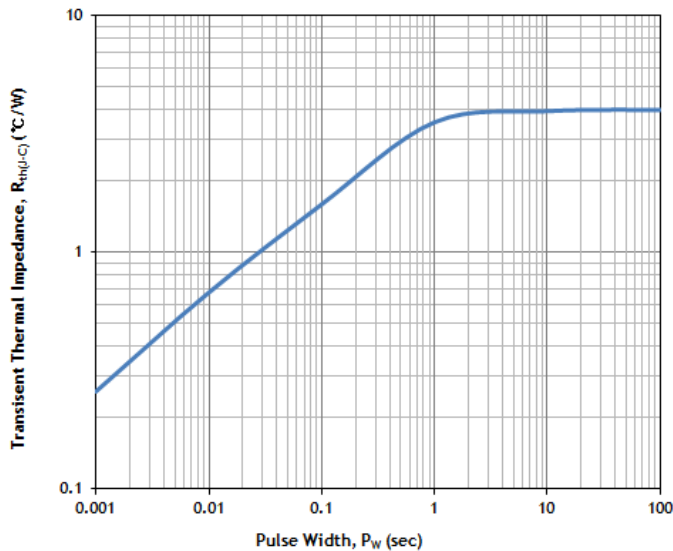
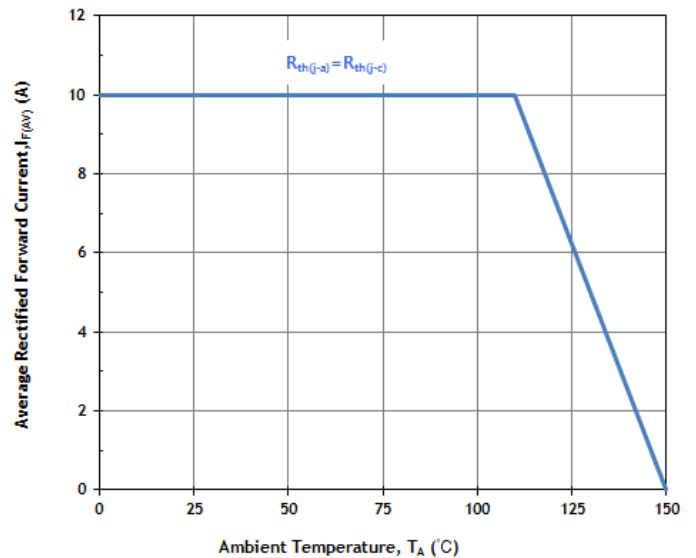
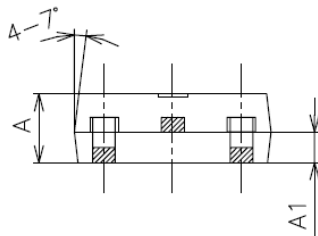
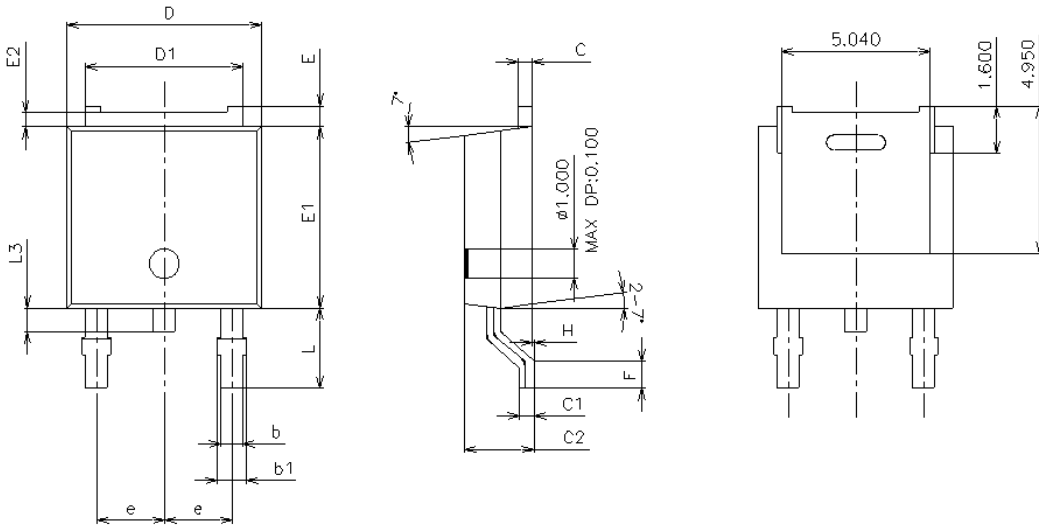


Fig. 6) Average Forward Current Characteristics

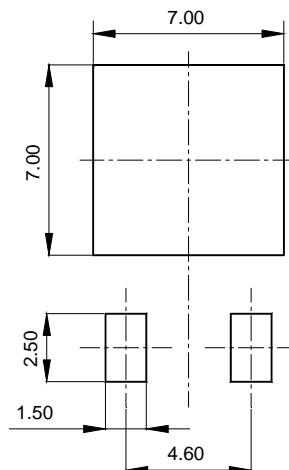


Package Outline Dimension



| 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)



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