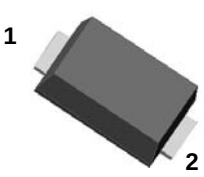
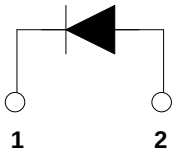
# ULTRA FAST RECOVERY POWER RECTIFIER




**Pin Configuration**
Pin 1: Cathode
Pin 2: Anode

**SOD-106**

## Features

- Low forward voltage drop
- Ultrafast reverse recovery time : trr(Typ.)=22ns
- High surge capability
- Low power loss and High efficiency
- Full lead (Pb)-free and RoHS compliant device

## Applications

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

## Product Characteristics

| | |
|---|---|
| $I_{F(AV)}$ | 3A |
| $V_{RRM}$ | 300V |
| $V_{FM}$ @ Tj=125℃ | 0.92V |
| $t_{rr}$ (Typ.) | 22ns |

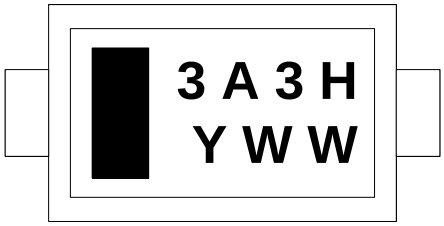
## Description

The SF3A300H is specially suited for switching mode base drive & transistor circuits. 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 |
|---|---|---|---|
| SF3A300H | 3A3H | SOD-106 | Tape & Reel |

## Marking Information




3A3H = Specific Device Code
YWW = Year & Week Code Marking
-. Y = Year Code
-. WW = Week Code
■ = Color band denote cathode

## 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>$V_R$ | 300 | V |
| Maximum average forward rectified current | $I_{F(AV)}$ | 3 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$ | 85 | 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 ambient | $R_{th(j-a)}$ | 76 | ℃/W |

## Electrical Characteristics

| Characteristic | Symbol | Test Condition | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Peak forward voltage drop | $V_{FM}$ (1) | $I_{FM}$ = 3A | $T_j$=25℃ | - | - | 1.20 | V |
| | | | $T_j$=125℃ | - | - | 0.92 | V |
| Reverse leakage current | $I_{RM}$ (1) | $V_R = V_{RRM}$ | $T_j$=25℃ | - | - | 5 | uA |
| | | | $T_j$=125℃ | - | - | 100 | uA |
| Reverse recovery time | $t_{rr}$ | $I_F$ = 0.5A, di/dt =-100 A/us | | - | 22 | 30 | ns |
| Junction capacitance | $C_j$ | $V_R = 4V_{DC}$, f=1MHz | | - | 40 | 100 | pF |

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

## Rating & Electrical Characteristic Curves

**Fig. 1) Typical Forward Characteristics**

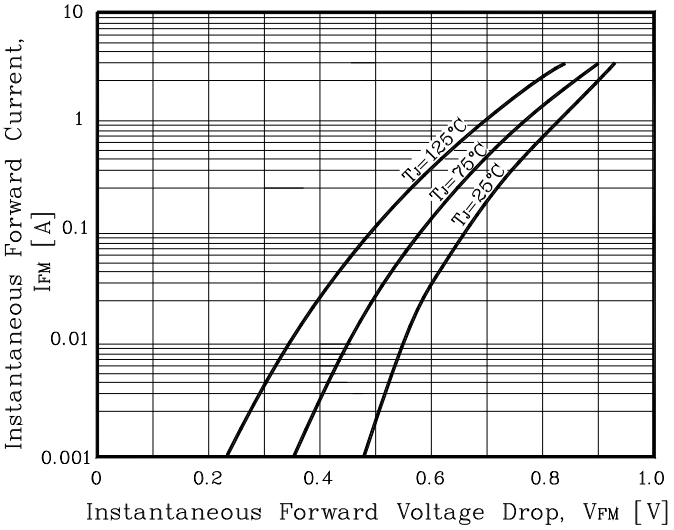



**Fig. 2) Typical Reverse Characteristics**

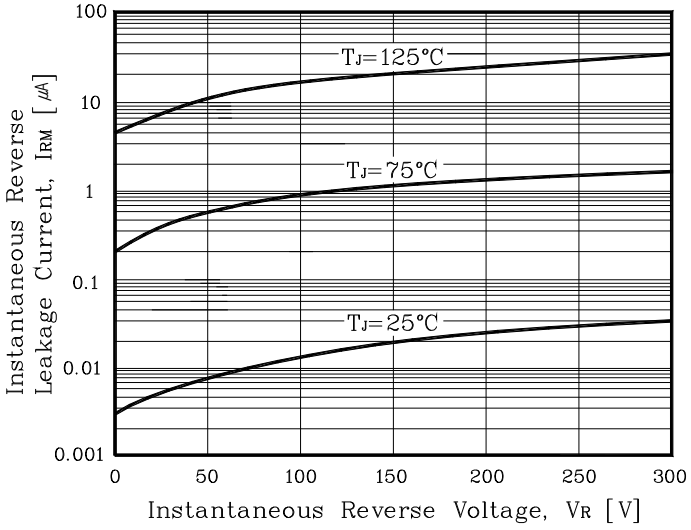



**Fig. 3) Maximum Forward Derative Curve**

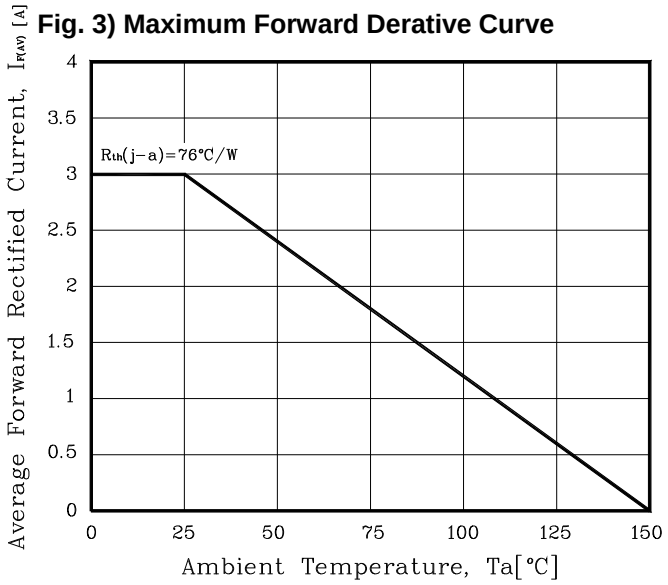



**Fig. 4) Forward Power Dissipation**

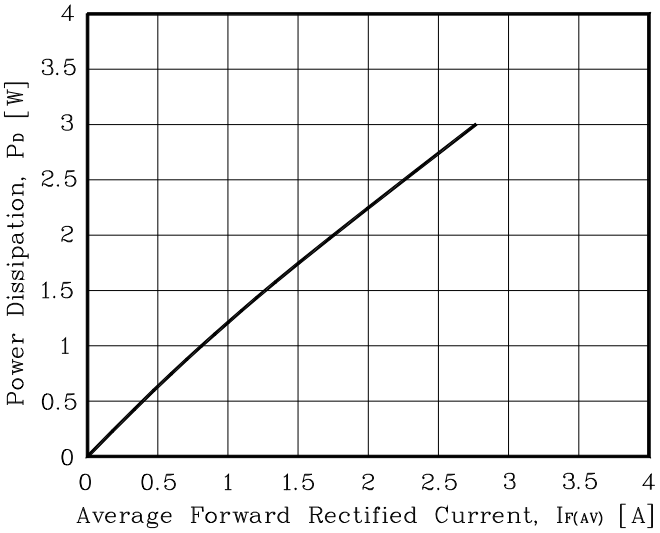



**Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current**

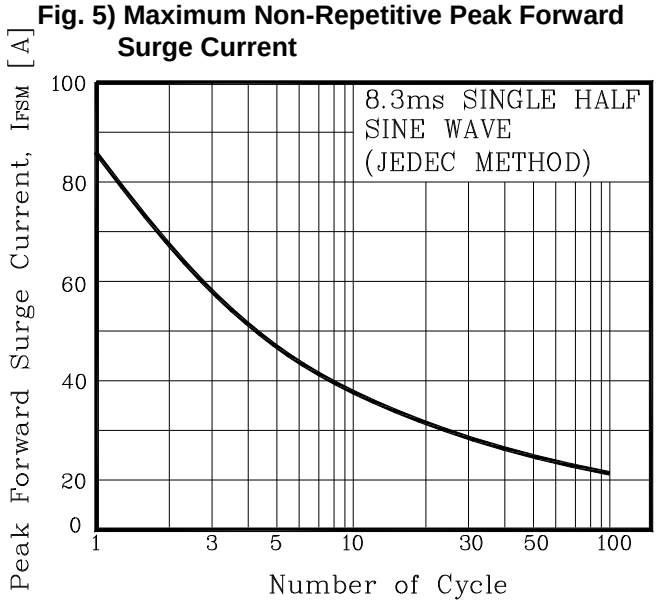
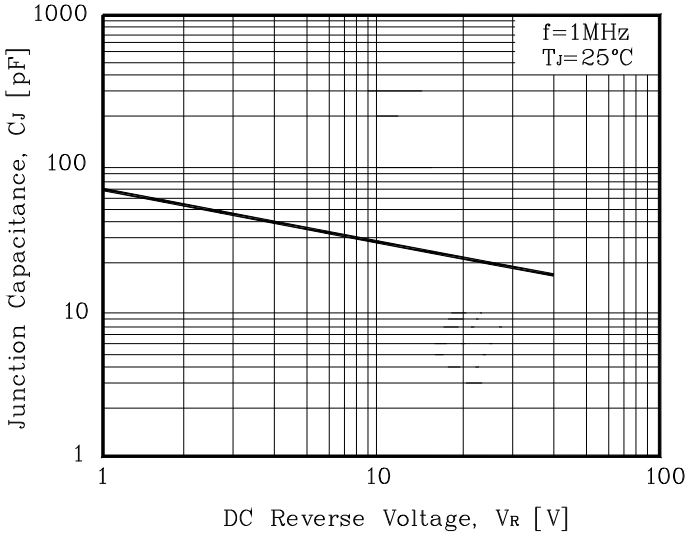
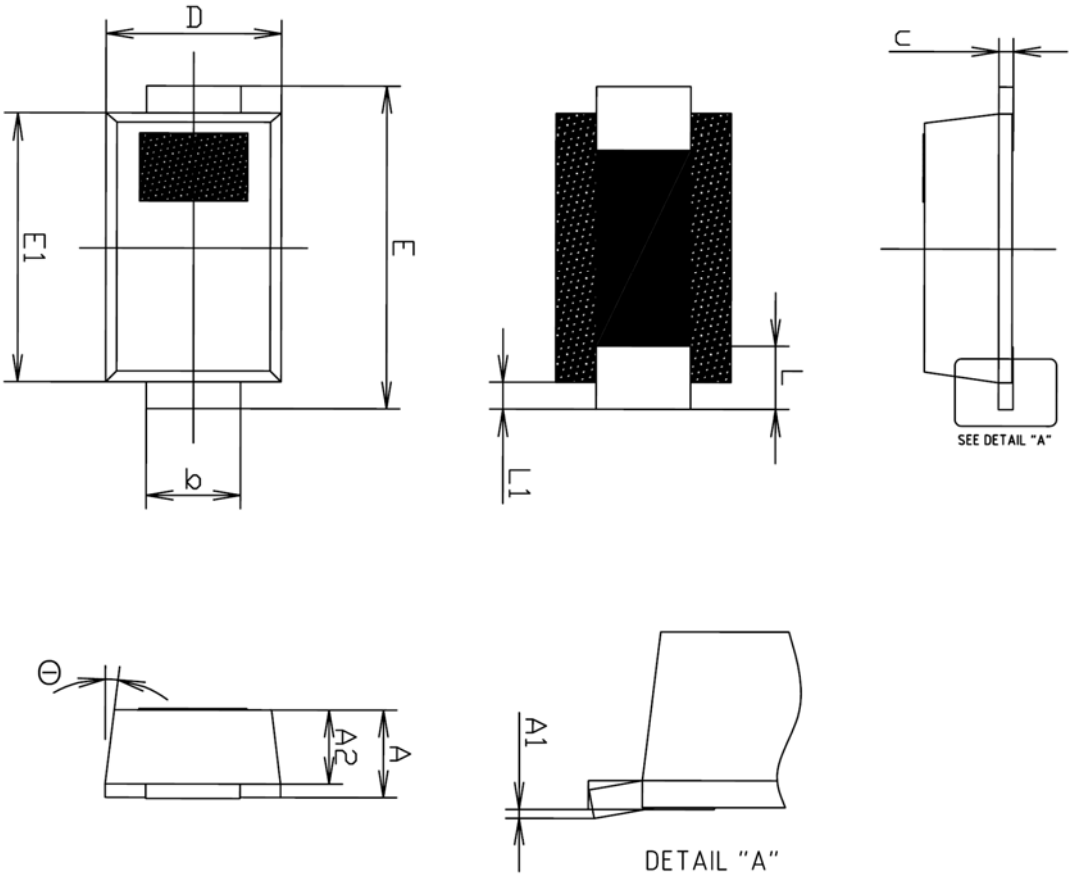



**Fig. 6) Typical Junction Capacitance**

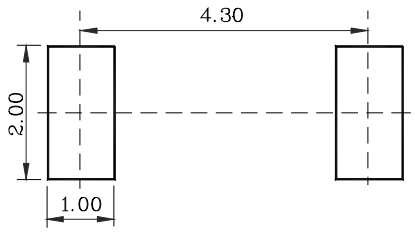


## Package Outline Dimension




| SYMBOL | MILLIMETERS | | | NOTE |
|---|---|---|---|---|
| | MINIMUM | NOMINAL | MAXIMUM | |
| A | 1.25 | 1.30 | 1.35 | |
| A1 | 0.00 | — | 0.10 | |
| A2 | 1.05 | 1.10 | 1.15 | |
| b | 1.35 | 1.42 | 1.49 | |
| c | 0.17 | 0.22 | 0.27 | |
| D | 2.50 | 2.60 | 2.70 | |
| E | 4.60 | 4.80 | 5.00 | |
| E1 | 3.90 | 4.00 | 4.10 | |
| L | 0.79 | 0.94 | 1.09 | |
| L1 | 0.30 | 0.40 | 0.50 | |
| Θ | 4° | — | 10° | |

**※ Recommend PCB solder land [Unit : mm]**



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