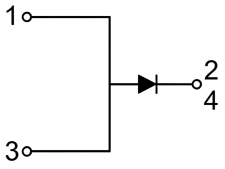
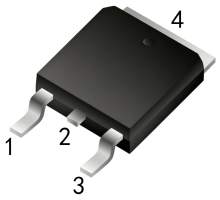
# Superfast Recovery Rectifiers

| Parameter | Value | Unit |
|---|---|---|
| $V_{RRM}$ | 100~600 | V |
| $I_{F(AV)}$ | 8 | A |




## Features

- High current capability
- Low forward voltage drop
- Low power loss, high efficiency
- High surge capability
- High temperature soldering guaranteed

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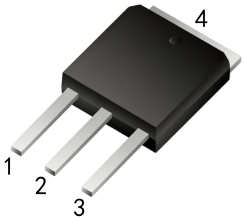


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## Applications

- Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

## Absolute Maximum Ratings(Ta=25℃,unless otherwise noted)

| Parameter | TO-251 | SF801VS | SF802VS | SF803VS | SF804VS | SF805VS | SF806VS | Unit |
|---|---|---|---|---|---|---|---|---|
| | TO-252 | SF801DS | SF802DS | SF803DS | SF804DS | SF805DS | SF806DS | |
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 100 | 200 | 300 | 400 | 500 | 600 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 70 | 140 | 210 | 280 | 350 | 420 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 100 | 200 | 300 | 400 | 500 | 600 | V |
| Maximum Average Forward Rectified Current | $I_{F(AV)}$ | 8.0 | | | | | | A |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method) | $I_{FSM}$ | 160 | | | | | | A |
| Maximum Forward Voltage at 8.0A DC | $V_F$ | 1.0 | | 1.30 | | 1.70 | | V |
| Maximum DC Reverse Current $T_J$=25℃<br>at Rated DC Blocking Voltage $T_J$=125℃ | $I_R$ | 1.0<br>300 | | | | | | uA |
| Typical Junction Capacitance Per Element (Note1) | $C_J$ | 45 | | | | | | pF |
| Typical Thermal Resistance(Note2) | $R_{\theta JC}$ | 15 | | | | | | ℃/W |
| Maximum Reverse Recovery Time(Note3) | $T_{rr}$ | 35 | | | | | | ns |
| Operating Temperature Range | $T_J$ | -55 to +150 | | | | | | ℃ |
| Storage Temperature Range | $T_{STG}$ | -55 to +150 | | | | | | ℃ |

Notes:
1.Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
2.Mounted on 10cm x 10cm x 1mm copper pad area
3.Reverse Recovery Test Conditions:IF=0.5A,IR=1A,Irr=0.25A

## Typical Characteristics

FIG.1 - FORWARD CURRENT DERATING CURVE

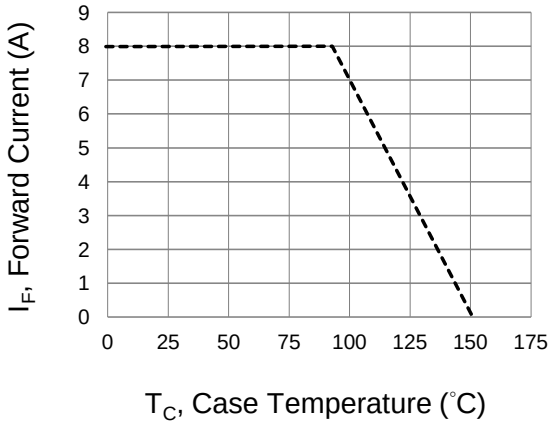



FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

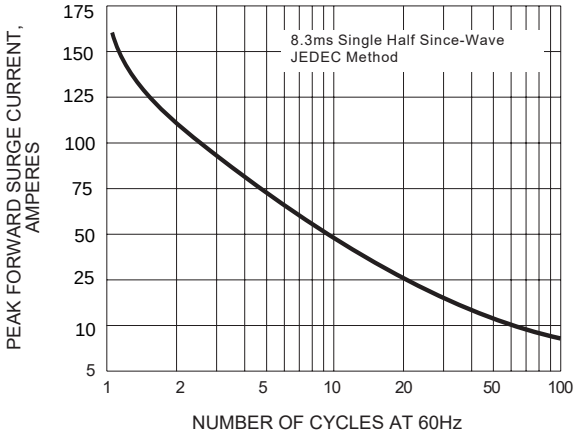



FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

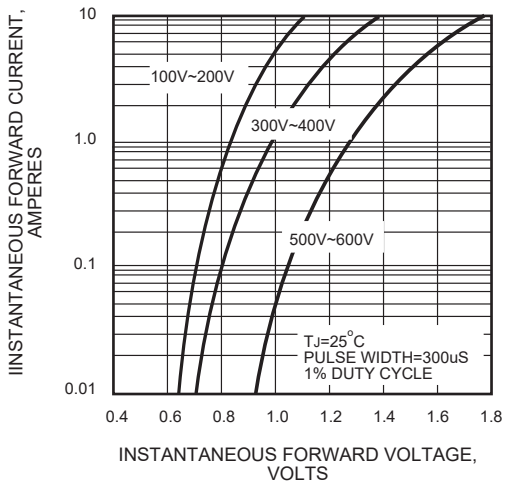



FIG.4 - TYPICAL REVERSE CHARACTERISTICS

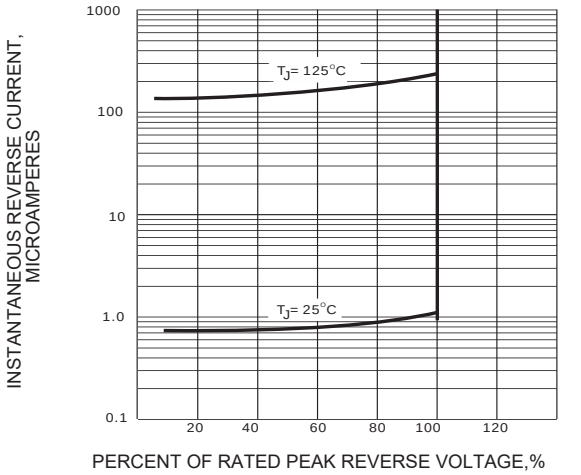
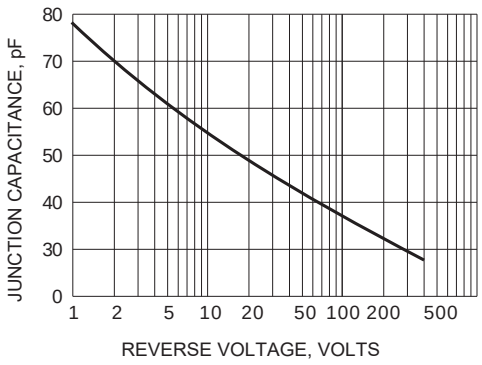
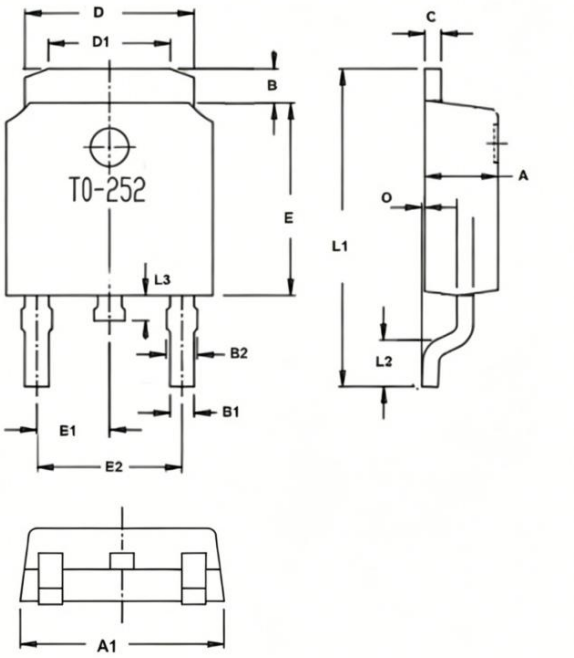



FIG.5 - TYPICAL JUNCTION CAPACITANCE



## Package Outlines

### TO-252




| Dim. | Min. | Max. |
|---|---|---|
| A | 2.1 | 2.5 |
| A1 | 6.3 | 6.9 |
| B | 0.95 | 1.55 |
| B1 | 0.6 | 0.8 |
| B2 | 0.75 | 0.95 |
| C | Typ0.5 | |
| D | 5.3 | 5.5 |
| D1 | 3.65 | 4.05 |
| E | 5.8 | 6.4 |
| E1 | Typ2.3 | |
| E2 | Typ4.6 | |
| O | 0 | 0.15 |
| L1 | 9 | 11 |
| L2 | Typ1.5 | |
| L3 | 0.7 | 1.0 |
| Dimensions in mm | | |

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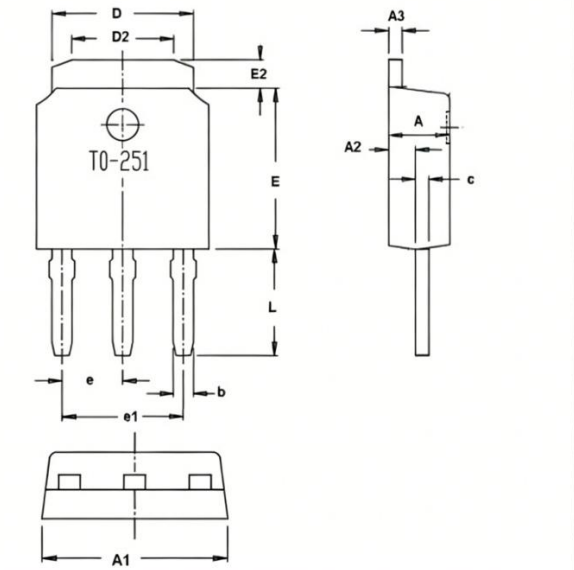


| Dim. | Min. | Max. |
|---|---|---|
| A | 2.1 | 2.5 |
| A1 | 6.3 | 6.9 |
| A2 | 0.9 | 1.1 |
| A3 | Typ0.5 | |
| b | 0.6 | 0.8 |
| c | 0.4 | 0.5 |
| D | 5.3 | 5.5 |
| D2 | 3.65 | 4.05 |
| E | 5.8 | 6.4 |
| E2 | 0.9 | 1.4 |
| e | Typ2.29 | |
| e1 | Typ4.58 | |
| L | 3.7 | 4.3 |
| Dimensions in mm | | |

***Important Usage Information and Disclaimer**

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