

## 1. Description

This series are state-of-the-art devices designed for use in switching power supplies, inverters and as free wheeling diodes.

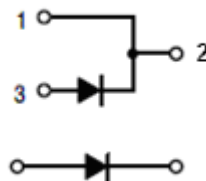
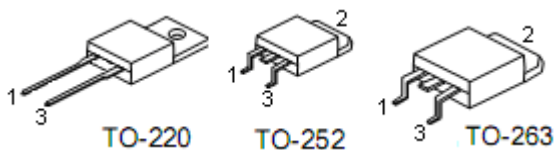
## 2. Features

- n Ultrafast 25 nanosecond recovery time
- n 175°C operating junction temperature
- n Epoxy meets UL 94 V-0 @ 0.125 in
- n Low forward voltage
- n Low leakage current
- n High temperature glass passivated junction
- n Reverse voltage to 700 V
- n Pb-free packages are available

## 3. Mechanical Characteristics

- n Case: epoxy, molded
- n Weight: 1.9 grams (approximately)
- n Finish: all external surfaces corrosion resistant and terminal
- n Leads are readily solderable
- n Lead temperature for soldering purposes: 260°C max for 10 seconds

## 4. Pin configuration



| Pin (TO-220) | Function |
|--------------|----------|
| 1            | Cathode  |
| 3            | Anode    |

| Pin (TO-252、TO-263) | Function |
|---------------------|----------|
| 1                   | Cathode  |
| 2                   | Cathode  |
| 3                   | Anode    |

## 5. Maximum ratings

| Parameter  | Symbol                          | Rating      | Units            |
|--|---------------------------------|-------------|------------------|
| Peak repetitive reverse voltage<br>Working peak reverse voltage<br>DC blocking voltage                     | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 700         | V                |
| Average rectified forward current<br>Total device, (Rated VR), $T_C = 150^\circ\text{C}$                   | $I_{F(AV)}$                     | 8.0         | A                |
| Peak repetitive forward current<br>(Rated VR, square wave, 20 kHz), $T_C = 150^\circ\text{C}$              | $I_{FM}$                        | 16          | A                |
| Nonrepetitive peak surge current<br>(Surge applied at rated load conditions halfwave, single phase, 60 Hz) | $I_{FSM}$                       | 100         | A                |
| Operating junction temperature and storage temperature range   | $T_J, T_{stg}$                  | -65 to +175 | $^\circ\text{C}$ |

## 6. Thermal characteristics

| Parameter                                    | Symbol          | Rating | Unit               |
|--|-----------------|--------|--------------------|
| Maximum thermal resistance, junction-to-case | $R_{\theta JC}$ | 2.0    | $^\circ\text{C/W}$ |

## 7. Electrical characteristics

| Parameter   | Symbol   | Conditions   | Rating                  |     |     | Unit |               |
|---|----------|--|-------------------------|-----|-----|------|---------------|
|   |          |  | Min                     | Typ | Max |      |               |
| Maximum Instantaneous Forward Voltage<br>(Note 1) | $V_F$    | $I_F=8.0\text{A}, T_C=25^\circ\text{C}$                  | -                       | 1.8 | 2.6 | V    |               |
| Maximum Instantaneous Reverse Current<br>(Note 1) | $I_R$    | $V_R=600\text{V}$  | $T_J=150^\circ\text{C}$ | -   | -   | 500  | $\mu\text{A}$ |
|   |          |  | $T_J=25^\circ\text{C}$  | -   | -   | 25   |               |
| Maximum Reverse Recovery Time                     | $t_{rr}$ | $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{REC}=0.25\text{A}$ | -                       | -   | 30  | ns   |               |

Note:1. Pulse test: pulse width=5ms, Duty cycle  $\leq 2.0\%$ .

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