TAYCHIPST

*GENERAL PURPOSE RECTIFIERS*

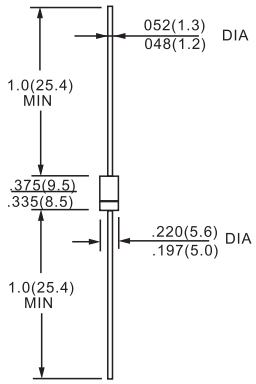
BY251 THRU BY255

200V-1300V 3.0A

## FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current, $I_R$ less than 0.1 μA
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

DO-27




Dimensions in inches and (millimeters)

## TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for both consumer and automotive applications.

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| RATING | SYMBOL | BY251 | BY252 | BY253 | BY254 | BY255 | UNIT |
|---|---|---|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 200 | 400 | 600 | 800 | 1300 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 140 | 280 | 420 | 560 | 910 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 200 | 400 | 600 | 800 | 1300 | V |
| Maximum Average Forward Current 0.375"(9.5mm) Lead Length Ta = 50 °C | $I_F$ | 3.0 | | | | | A |
| Peak Forward Surge Current 8.3ms Single half sine wave Superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 100 | | | | | A |
| Maximum Forward Voltage at $I_F$ = 3.0 Amps. | $V_F$ | 1.1 | | | | | V |
| Maximum DC Reverse Current Ta = 25 °C | $I_R$ | 20 | | | | | μA |
| at rated DC Blocking Voltage Ta = 100 °C | $I_{R(H)}$ | 50 | | | | | μA |
| Typical Junction Capacitance (Note1) | $C_J$ | 50 | | | | | pF |
| Typical Thermal Resistance (Note2) | RθJA | 18 | | | | | °C/W |
| Junction Temperature Range | $T_J$ | - 65 to + 175 | | | | | °C |
| Storage Temperature Range | $T_{STG}$ | - 65 to + 175 | | | | | °C |

**Notes :**

(1) Measured at 1.0 MHz and applied reverse voltage of 4.0$V_{DC}$

(2) Thermal resistance from Junction to Ambient at 0.375" (9.5mm) Lead Lengths, P.C. Board Mounted.

**FIG.1 -- TYPICAL FORWARD CHARACTERISTICS**

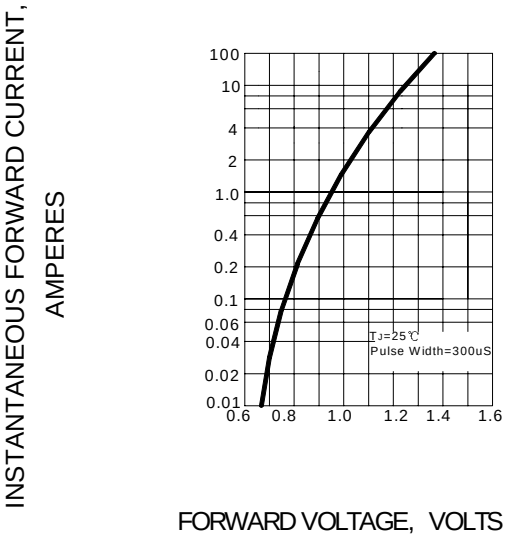
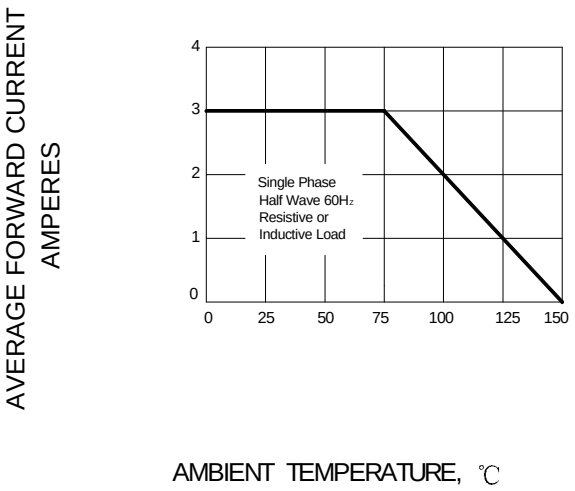



**FIG.2 -- TYPICAL CURRENT DERATING CURVE**



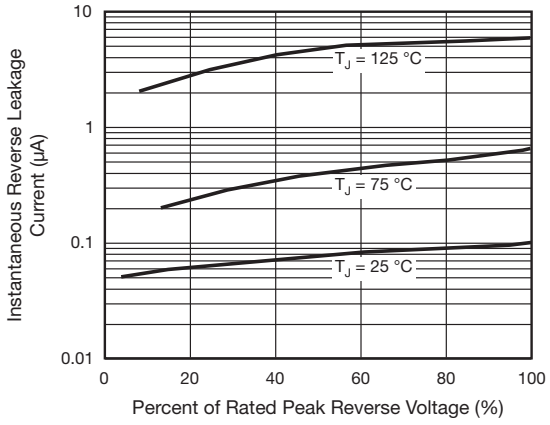




Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

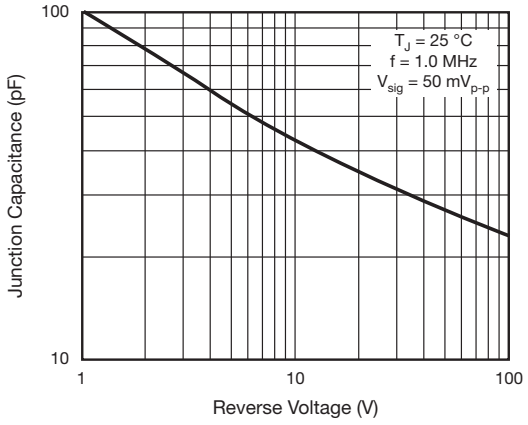



Fig. 5 - Typical Junction Capacitance

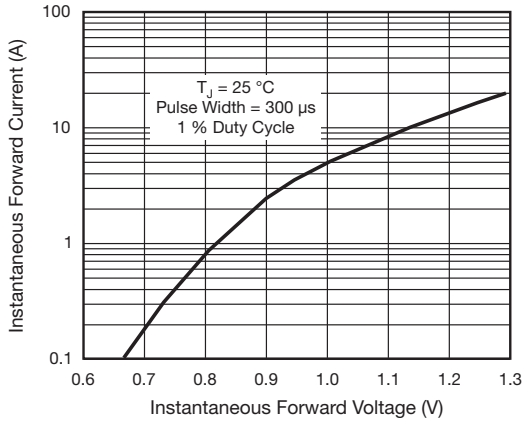



Fig. 4 - Typical Instantaneous Forward Characteristics