

## SUPER FAST RECTIFIER

VOLTAGE RANGE: 1500 V  
CURRENT: 12.0 A

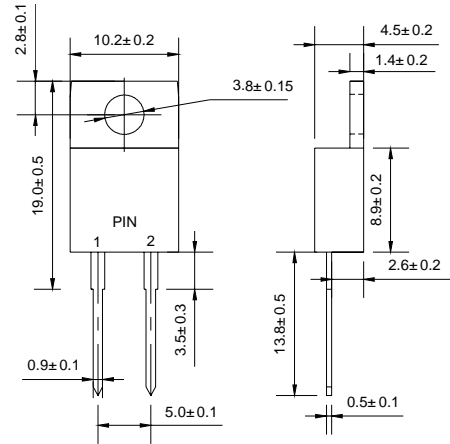
### FEATURES

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with alcohol, Isopropanol and similar solvents
- ◇ The plastic material carries U/L recognition 94V-0

### MECHANICAL DATA

- ◇ Case: JEDEC TO-220AC, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.064 ounces, 1.96 gram
- ◇ Mounting position: Any

### TO - 220AC



Dimensions in millimeters

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 50Hz, resistive or inductive load. For capacitive load, derate by 20%.

|                                                                                                                   |                  | BY459            | UNITS            |
|-------------------------------------------------------------------------------------------------------------------|------------------|------------------|------------------|
| Maximum recurrent peak reverse voltage                                                                            | $V_{RRM}$        | 1500             | V                |
| Maximum RMS voltage                                                                                               | $V_{RMS}$        | 1050             | V                |
| Maximum DC blocking voltage                                                                                       | $V_{DC}$         | 1500             | V                |
| Maximum average forward rectified current<br>@ $T_A=75^\circ\text{C}$                                             | $I_{F(AV)}$      | 12.0             | A                |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load @ $T_J=125^\circ\text{C}$ | $I_{FSM}$        | 110.0            | A                |
| Maximum instantaneous forward voltage<br>@ 6.5A                                                                   | $V_F$            | 1.30             | V                |
| Maximum reverse current @ $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage @ $T_A=100^\circ\text{C}$        | $I_R$            | 10.0<br>100      | $\mu\text{A}$    |
| Maximum reverse recovery time (Note1)                                                                             | $t_{rr}$         | 0.35             | $\mu\text{s}$    |
| Typical thermal resistance (Note2)                                                                                | $R_{\theta Jmb}$ | 1.5              | K/W              |
| Typical thermal resistance (Note3)                                                                                | $R_{\theta JA}$  | 60               | K/W              |
| Operating junction temperature range                                                                              | $T_J$            | - 55 ----- + 150 | $^\circ\text{C}$ |
| Storage temperature range                                                                                         | $T_{STG}$        | - 55 ----- + 150 | $^\circ\text{C}$ |

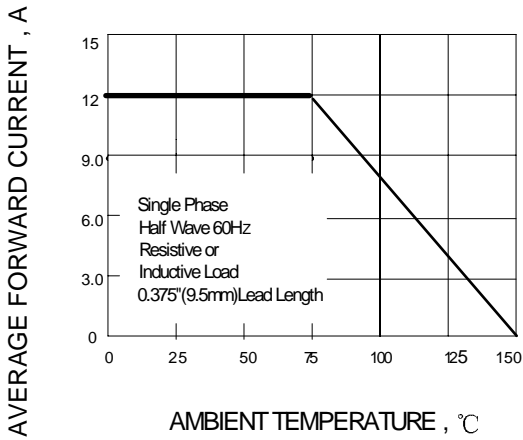
NOTE: 1. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

2. Thermal resistance from junction to case.

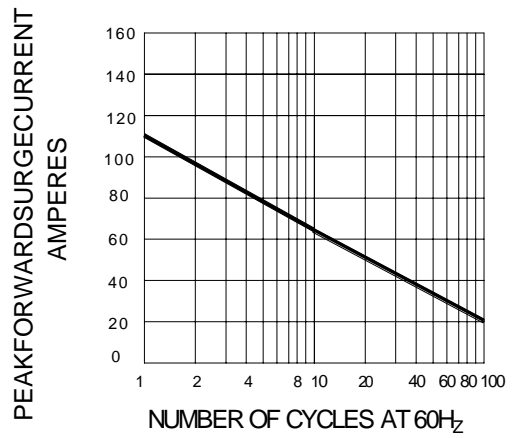
3. Thermal resistance from junction to ambient.

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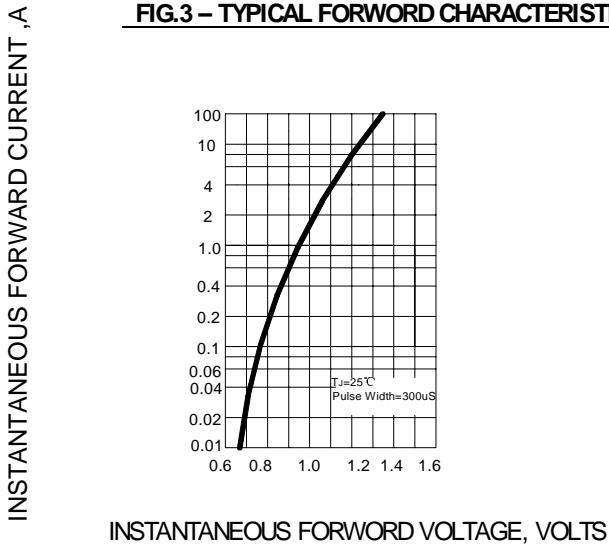
**FIG.1 – FORWARD DERATING CURVE**



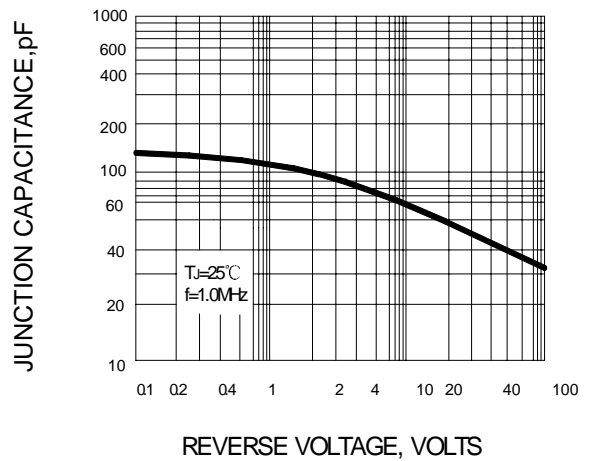
**FIG.2 – PEAK FORWARD SURGE CURRENT**



**FIG.3 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.4 – TYPICAL JUNCTION CAPACITANCE**



**FIG.5 – AVERAGE FORWARD POWER DISSIPATION**

