

Pb Free Plating Product

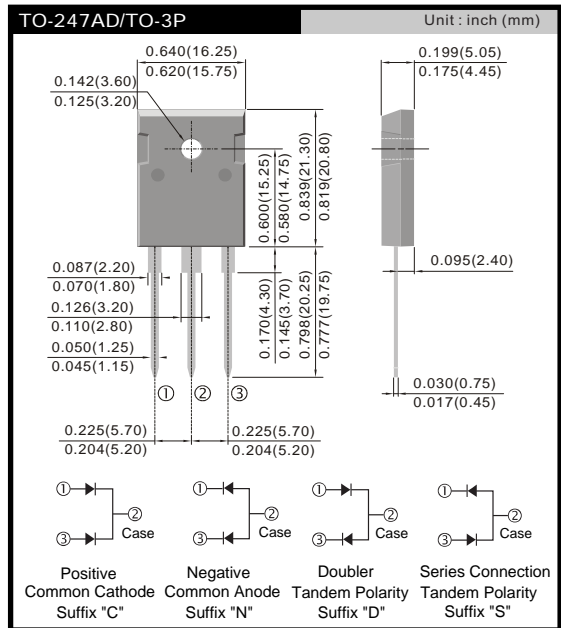
ESAD33-02D/ESAD33-02S



16 Ampere Heatsink Doubler Ultra Fast Recovery Half Bridge Rectifiers

- Features**
- ★ Latest GPP technology with super fast recovery time
  - ★ Low forward voltage drop
  - ★ Glass passivated with high current capability
  - ★ Low reverse leakage current
  - ★ High surge current capability
- Application**
- ★ Automotive Inverters/Solar Inverters
  - ★ Plating Power Supply, SMPS, Motor Control and UPS
  - ★ Car Audio Amplifiers and Sound Device Systems

- Mechanical Data**
- ★ Case: Heatsink TO-3P/TO-247AD
  - ★ Epoxy: UL 94V-0 rate flame retardant
  - ★ Terminals: Solderable per MIL-STD-202 method 208
  - ★ Polarity: As marked on diode body
  - ★ Mounting position: Any
  - ★ Weight: 5.6 gram approximately



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

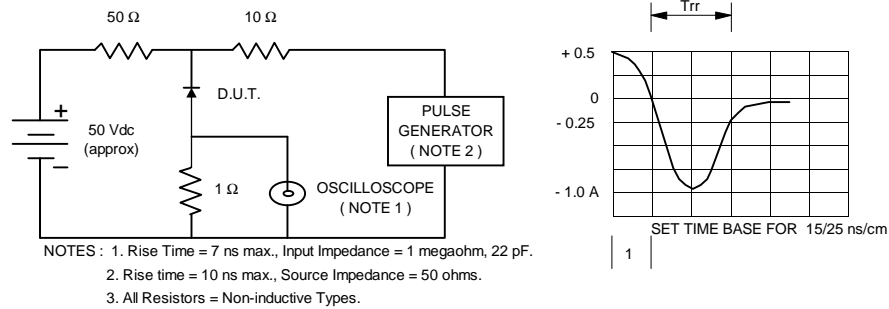
Rating at 25°C ambient temperature unless otherwise specified.  
 Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| RATING  | SYMBOL             | ESAD33-02D/ESAD33-02S              | UNIT |
|---|--------------------|------------------------------------|------|
| Maximum Repetitive Peak Reverse Voltage   | V <sub>RRM</sub>   | 200                                | V    |
| Maximum Working Reverse Voltage   | V <sub>RWM</sub>   | 200                                | V    |
| Maximum DC Blocking Voltage   | V <sub>DC</sub>    | 200                                | V    |
| Maximum Average Forward Current<br>Total Device, (Rated V <sub>R</sub> ), T <sub>c</sub> = 150°C              | I <sub>F(AV)</sub> | 8.0 (Per Leg)<br>16 (Total Device) | A    |
| Maximum Peak Rectified Forward Current<br>(Rated V <sub>R</sub> , Square Wave, 20 kHz) T <sub>c</sub> = 150°C | I <sub>FRM</sub>   | 16                                 | A    |
| Maximum Non-repetitive Peak Forward Surge Current<br>(Halfwave, single phase, 60 Hz) Per Leg                  | I <sub>FSM</sub>   | 100                                | A    |
| Maximum Forward Voltage at I <sub>F</sub> = 8 A, T <sub>c</sub> = 25°C  | V <sub>F</sub>     | 0.975 <sup>(1)</sup>               | V    |
| Maximum Instantaneous Reverse Current <sup>(1)</sup><br>( Rated dc Voltage)                                   | I <sub>R</sub>     | 5 (T <sub>c</sub> = 25°C)          | μA   |
|   | I <sub>R(H)</sub>  | 250 (T <sub>c</sub> = 150°C)       | μA   |
| Maximum Reverse Recovery Time<br>(I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1A ; I <sub>rr</sub> = 0.25 A)      | T <sub>rr</sub>    | 25~35                              | ns   |
| Maximum Thermal Resistance, Junction to Case  | R <sub>θJC</sub>   | 3.0                                | °C/W |
| Junction Temperature Range  | T <sub>J</sub>     | - 65 to + 175                      | °C   |
| Storage Temperature Range   | T <sub>STG</sub>   | - 65 to + 175                      | °C   |

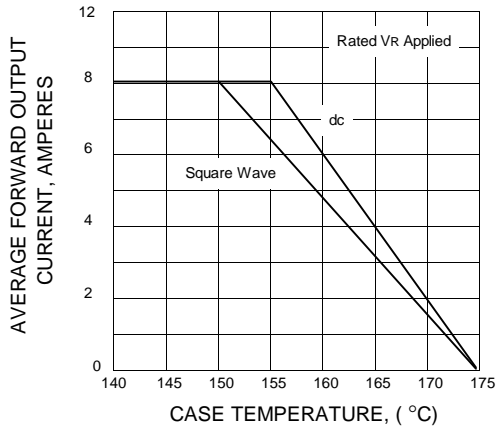
**Note :**  
 (1) Pulse Test : Pulse Width = 300 μs Duty Cycle ≤ 2 0%

**RATING AND CHARACTERISTIC CURVES (ESAD33-02D/ESAD33-02S)**

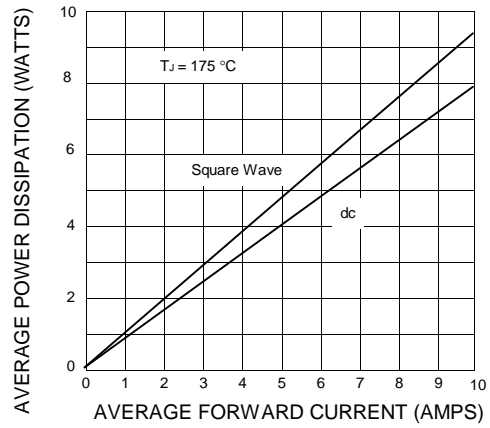
**FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



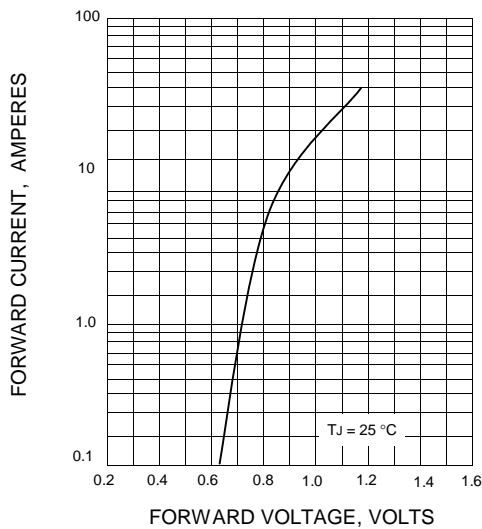
**FIG. 2 - CURRENT DERATING CASE, PER LEG**



**FIG. 3 - POWER DISSIPATION, PER LEG**



**FIG. 4 - TYPICAL FORWARD VOLTAGE, PER LEG**



**FIG. 5 - TYPICAL REVERSE CURRENT, PER LEG**

