

Pb Free Plating Product

ESAD39M-02C/ESAD39M-04C/ESAD39M-06C



10 Ampere Insulated Common Cathode 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**

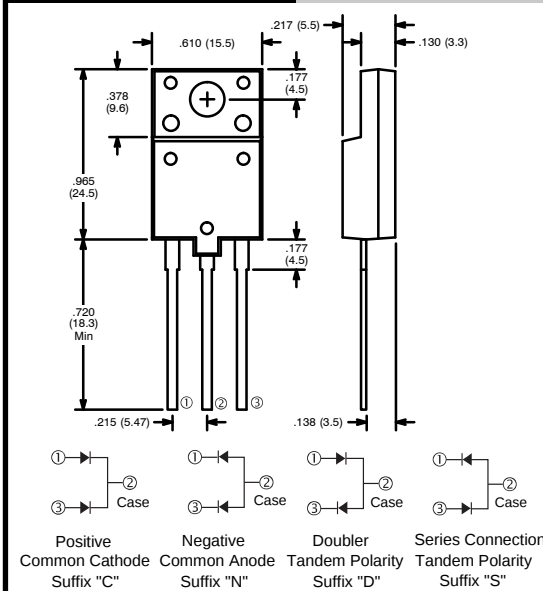
- ★ Automotive Inverters/Solar Inverters
- ★ Plating Power Supply, SMPS, Motor Control and UPS
- ★ Car Audio Amplifiers and Sound Device Systems

**Mechanical Data**

- ★ Case: TO-3PF isolated package by fully molding
- ★ 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: 6.0 gram approximately

TO-3PF/TO-3P(H)IS

Unit : inch (mm)

**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%.

|                                                                                                   | SYMBOL                            | ESAD39M-02C | ESAD39M-04C | ESAD39M-06C | UNIT |
|---------------------------------------------------------------------------------------------------|-----------------------------------|-------------|-------------|-------------|------|
| Maximum Recurrent Peak Reverse Voltage                                                            | V <sub>RRM</sub>                  | 200         | 400         | 600         | V    |
| Maximum RMS Voltage                                                                               | V <sub>RMS</sub>                  | 140         | 280         | 420         | V    |
| Maximum DC Blocking Voltage                                                                       | V <sub>DC</sub>                   | 200         | 400         | 600         | V    |
| Maximum Average Forward Rectified Current T <sub>C</sub> =100°C                                   | I <sub>F(AV)</sub>                | 10.0        |             |             | A    |
| Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub>                  | 100         |             |             | A    |
| Maximum Instantaneous Forward Voltage @ 5.0 A                                                     | V <sub>F</sub>                    | 0.98        | 1.3         | 1.7         | V    |
| Maximum DC Reverse Current @T <sub>J</sub> =25°C                                                  | I <sub>R</sub>                    | 5.0         |             |             | uA   |
| At Rated DC Blocking Voltage @T <sub>J</sub> =125°C                                               |                                   | 100         |             |             | uA   |
| Maximum Reverse Recovery Time (Note 1)                                                            | T <sub>rr</sub>                   | 35          |             |             | nS   |
| Typical junction Capacitance (Note 2)                                                             | C <sub>J</sub>                    | 65          |             |             | pF   |
| Typical Thermal Resistance (Note 3)                                                               | R <sub>θJC</sub>                  | 2.2         |             |             | °C/W |
| Operating Junction and Storage Temperature Range                                                  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |             |             | °C   |

NOTES : (1) Reverse recovery test conditions I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A.

(2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.

(3) Thermal Resistance junction to case.

FIG.1 - FORWARD CURRENT DERATING CURVE

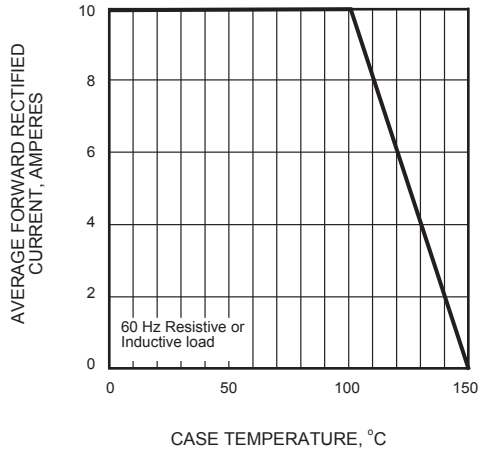


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

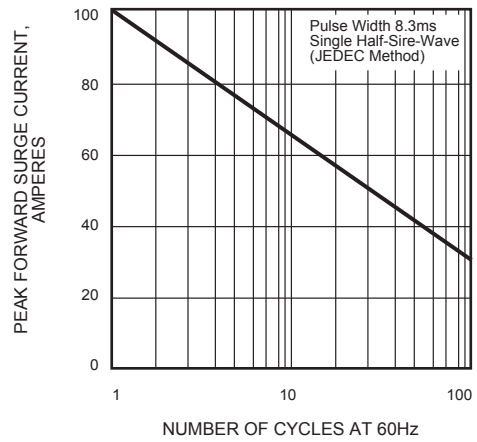


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

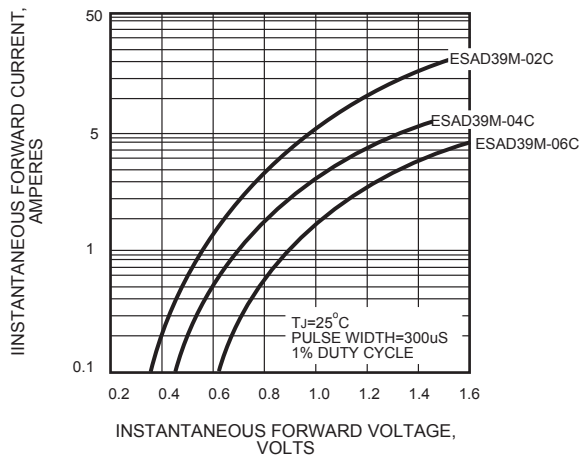


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

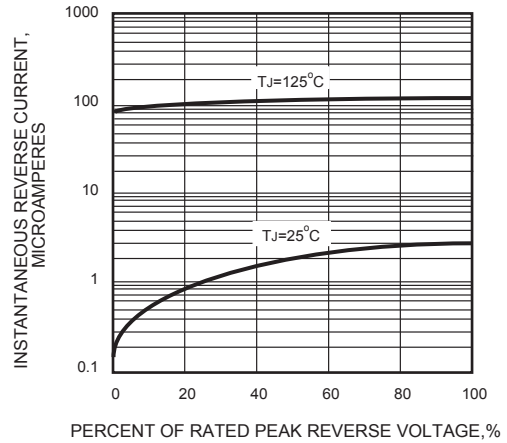


FIG.5 - TYPICAL JUNCTION CAPACITANCE

