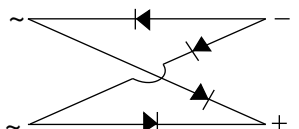
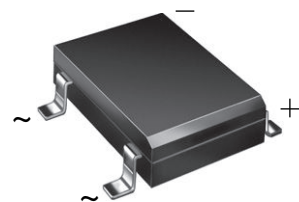


## Miniature Glass Passivated Ultrafast Surface Mount Bridge Rectifiers



Case Style DFS

### FEATURES

- UL recognition, file number E54214
- Ideal for automated placement
- Glass passivated pellet chip junction
- Ultrafast reverse recovery time for high frequency
- High surge current capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for SMPS, lighting ballaster, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

### MECHANICAL DATA

#### Case: DFS

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** As marked on body

| PRIMARY CHARACTERISTICS |                           |
|-------------------------|---------------------------|
| Package                 | DFS                       |
| $I_{F(AV)}$             | 1 A                       |
| $V_{RRM}$               | 50 V, 100 V, 150 V, 200 V |
| $I_{FSM}$               | 50 A                      |
| $I_R$                   | 5 $\mu$ A                 |
| $V_F$ at $I_F = 1.0$ A  | 1.05 V                    |
| $t_{rr}$                | 50 ns                     |
| $T_J$ max.              | 150 °C                    |
| Diode variations        | Quad                      |

| MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)                          |                |             |        |        |        |                  |
|----------------------------------------------------------------------------------|----------------|-------------|--------|--------|--------|------------------|
| PARAMETER                                                                        | SYMBOL         | EDF1AS      | EDF1BS | EDF1CS | EDF1DS | UNIT             |
| Maximum repetitive peak reverse voltage                                          | $V_{RRM}$      | 50          | 100    | 150    | 200    | V                |
| Maximum RMS voltage                                                              | $V_{RMS}$      | 35          | 70     | 106    | 140    | V                |
| Maximum DC blocking voltage                                                      | $V_{DC}$       | 50          | 100    | 150    | 200    | V                |
| Maximum average forward output rectified current at $T_A = 40$ °C <sup>(1)</sup> | $I_{F(AV)}$    | 1.0         |        |        |        | A                |
| Peak forward surge current single half sine-wave superimposed on rated load      | $I_{FSM}$      | 50          |        |        |        | A                |
| Rating for fusing ( $t < 8.3$ ms)                                                | $I^2t$         | 10          |        |        |        | A <sup>2</sup> s |
| Operating junction and storage temperature range                                 | $T_J, T_{STG}$ | -55 to +150 |        |        |        | °C               |

#### Note

<sup>(1)</sup> Pulse test: 300 ms pulse width, 1 % duty cycle

| ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted) |                                                 |          |        |        |        |        |
|--------------------------------------------------------------------|-------------------------------------------------|----------|--------|--------|--------|--------|
| PARAMETER                                                          | TEST CONDITIONS                                 | SYMBOL   | EDF1AS | EDF1BS | EDF1CS | EDF1DS |
| Maximum instantaneous forward voltage drop per diode               | 1.0 A <sup>(1)</sup>                            | $V_F$    | 1.05   |        |        |        |
| Maximum DC reverse current at rated DC blocking voltage per diode  | $T_A = 25$ °C                                   | $I_R$    | 5.0    |        |        |        |
|                                                                    | $T_A = 125$ °C                                  |          | 1.0    |        |        |        |
| Maximum reverse recovery time per diode                            | $I_F = 0.5$ A, $I_R = 1.0$ A, $t_{rr} = 0.25$ A | $t_{rr}$ | 50     |        |        |        |

#### Note

<sup>(1)</sup> Pulse test: 300 ms pulse width, 1 % duty cycle



## THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER                                 | SYMBOL           | EDF1AS | EDF1BS | EDF1CS | EDF1DS | UNIT |
|-------------------------------------------|------------------|--------|--------|--------|--------|------|
| Typical thermal resistance <sup>(1)</sup> | R <sub>θJA</sub> | 38     |        |        |        | °C/W |
|                                           | R <sub>θJL</sub> | 12     |        |        |        |      |

### Note

<sup>(1)</sup> PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

## ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| EDF1DS-E3/45  | 0.406           | 45                     | 50            | Tube                             |
| EDF1DS-E3/77  | 0.406           | 77                     | 1500          | 13" diameter paper tape and reel |

## RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

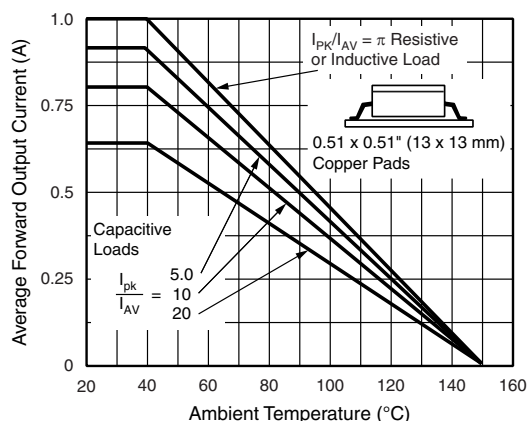


Fig. 1 - Derating Curves Output Rectified Current

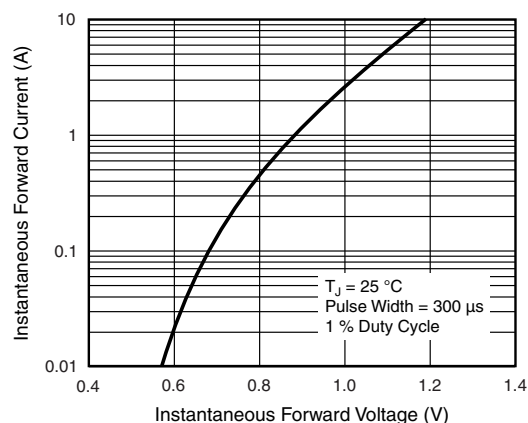


Fig. 3 - Typical Forward Characteristics Per Diode

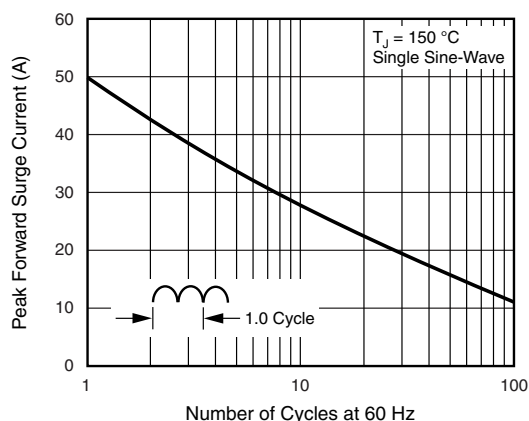


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

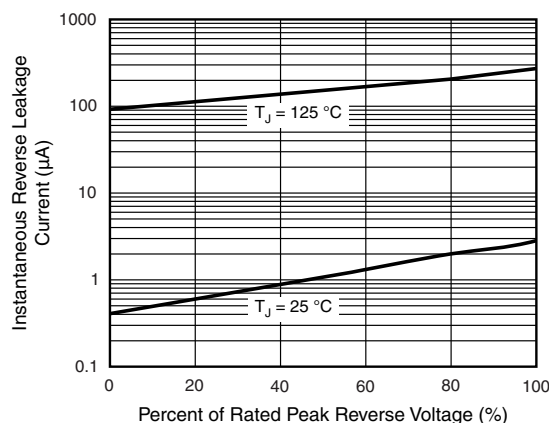


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

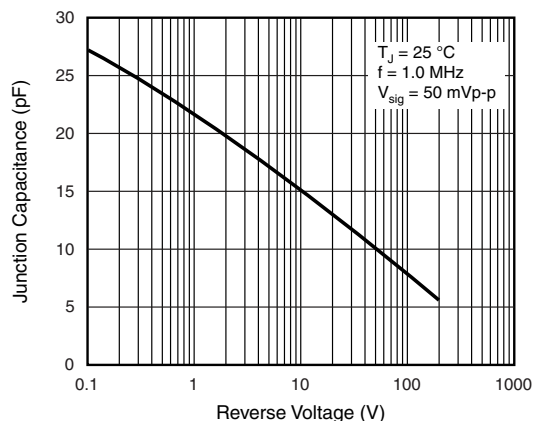
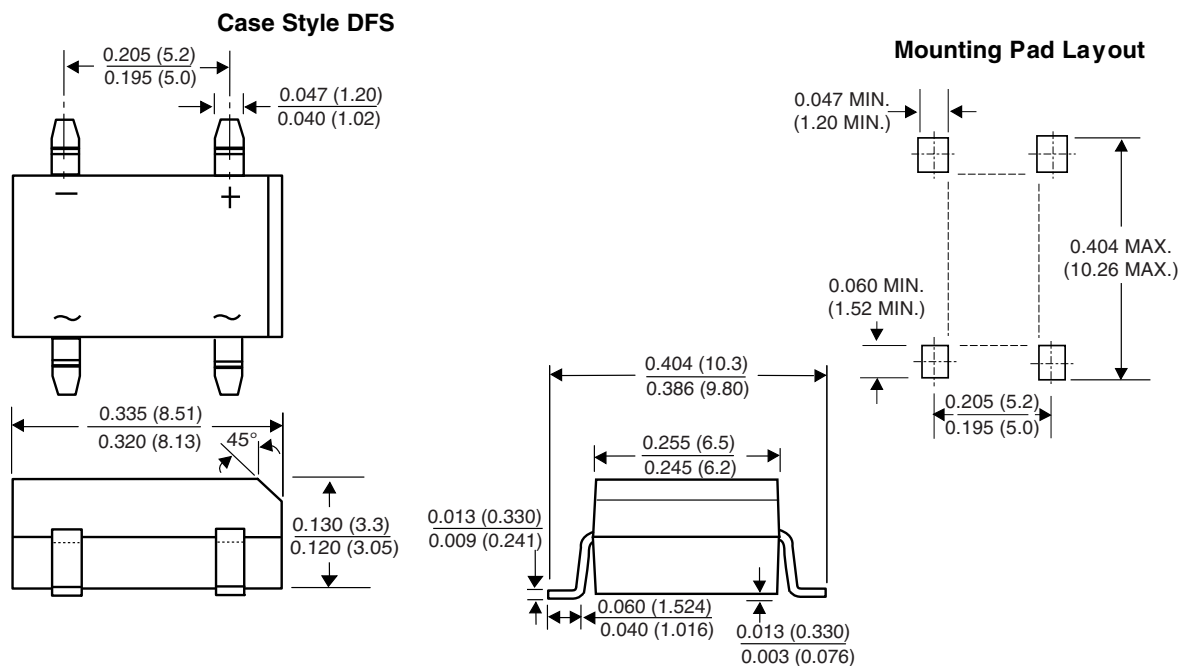


Fig. 5 - Typical Junction Capacitance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)




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