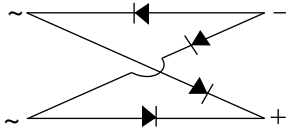
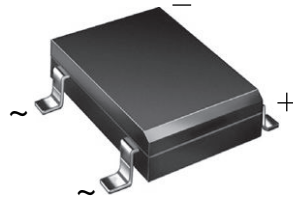


## Miniature Glass Passivated Ultrafast Surface-Mount Bridge Rectifiers



Case Style DFS

### LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

#### PRIMARY CHARACTERISTICS

|                        |                           |
|------------------------|---------------------------|
| $I_{F(AV)}$            | 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                    |
| Package                | DFS                       |
| Circuit configuration  | 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

#### 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



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

**Note**

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

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                 |        |        |        |        |                    |  |
|---|-----------------|--------|--------|--------|--------|--------------------|--|
| PARAMETER   | SYMBOL          | EDF1AS | EDF1BS | EDF1CS | EDF1DS | UNIT               |  |
| Typical thermal resistance <sup>(1)</sup>   | $R_{\theta JA}$ | 38     |        |        |        | $^\circ\text{C/W}$ |  |
|   | $R_{\theta JL}$ | 12     |        |        |        |                    |  |

**Note**

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

| <b>ORDERING INFORMATION</b> (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)

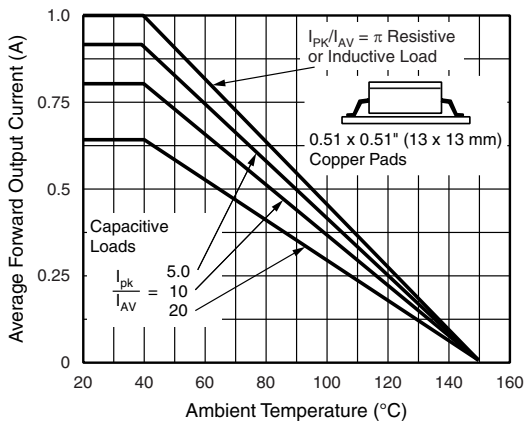


Fig. 1 - Derating Curves Output Rectified Current

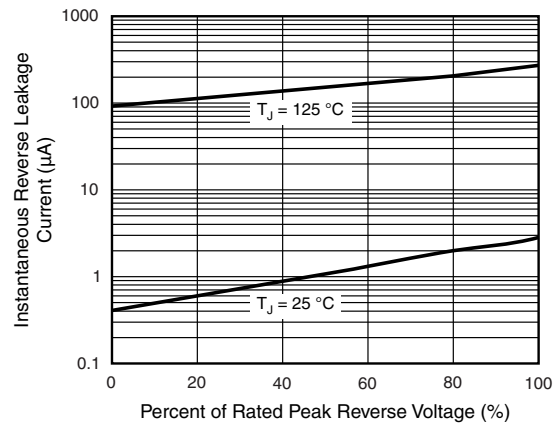


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

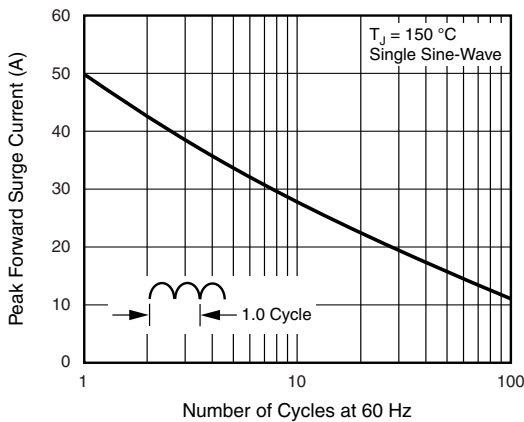


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

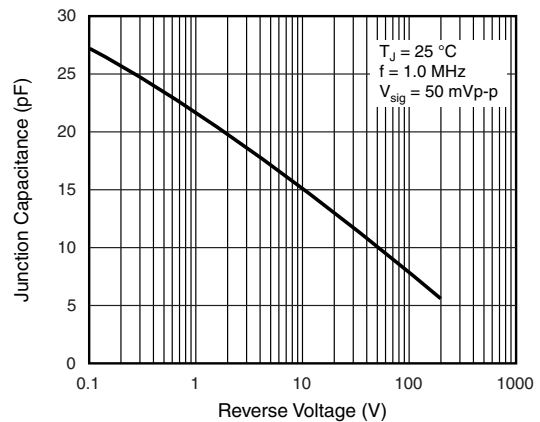


Fig. 5 - Typical Junction Capacitance Per Diode

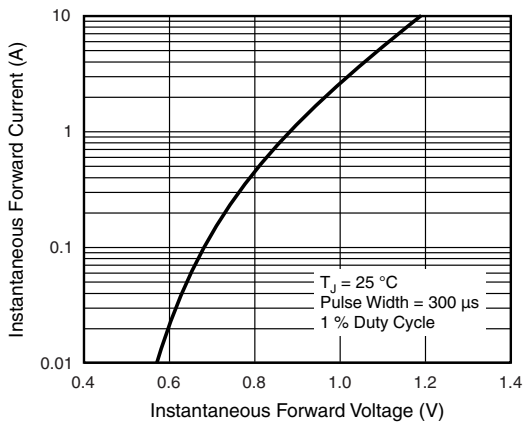
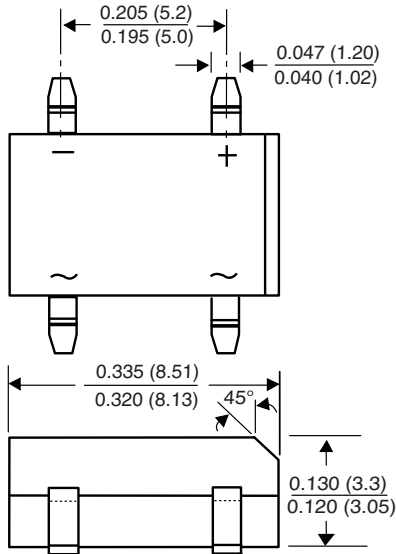


Fig. 3 - Typical Forward Characteristics Per Diode

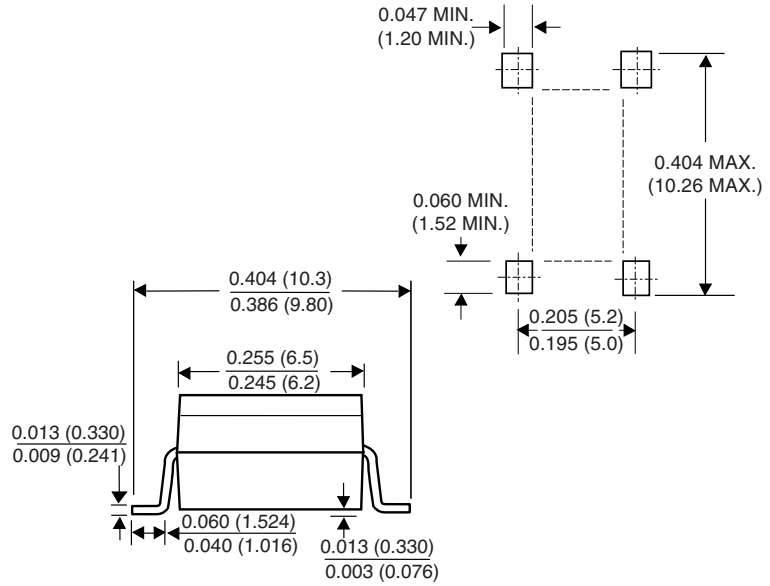


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Style DFS



### Mounting Pad Layout





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