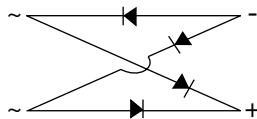




## Low Profile Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers



Case Style Low Pro le DFS

### FEATURES

- Low profile: typical height of 2.5 mm
- UL recognition, file number E54214
- Ideal for automated placement
- High surge current capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- Solder dip 260 °C, 40 s
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS  
COMPLIANT

### TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for SMPS, lighting ballaster, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

### MECHANICAL DATA

**Case:** Low profile DFS

Epoxy meets UL 94 V-0 flammability rating

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

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

**Polarity:** As marked on body

| PRIMARY CHARACTERISTICS |                |
|-------------------------|----------------|
| $I_{F(AV)}$             | 1.5 A          |
| $V_{RRM}$               | 50 V to 1000 V |
| $I_{FSM}$               | 50 A           |
| $I_R$                   | 5 $\mu$ A      |
| $V_F$                   | 1.1 V          |
| $T_J$ max.              | 150 °C         |

| MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)                     |                            |               |           |           |           |           |           |           |                  |
|---|----------------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|
| PARAMETER   | SYMBOL                     | DFL 15005S    | DFL 1501S | DFL 1502S | DFL 1504S | DFL 1506S | DFL 1508S | DFL 1510S | UNIT             |
| Maximum repetitive peak reverse voltage                                     | $V_{RRM}$                  | 50            | 100       | 200       | 400       | 600       | 800       | 1000      | V                |
| Maximum RMS voltage   | $V_{RMS}$                  | 35            | 70        | 140       | 280       | 420       | 560       | 700       | V                |
| Maximum DC blocking voltage   | $V_{DC}$                   | 50            | 100       | 200       | 400       | 600       | 800       | 1000      | V                |
| Maximum average forward output rectified current at $T_A = 40$ °C           | $I_{F(AV)}$ <sup>(1)</sup> | 1.5           |           |           |           |           |           |           | 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> Units mounted on P.C.B. with 0.51" x 0.51" (13 mm x 13 mm) copper pads

# DFL15005S thru DFL1510S

Vishay General Semiconductor



| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                         |                               |            |           |           |           |           |           |           |      |
|--|-------------------------|-------------------------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------|
| PARAMETER  | TEST CONDITIONS         | SYMBOL                        | DFL 15005S | DFL 1501S | DFL 1502S | DFL 1504S | DFL 1506S | DFL 1508S | DFL 1510S | UNIT |
| Max. instantaneous forward voltage drop per diode                          | 1.5 A                   | V <sub>F</sub>                | 1.1        |           |           |           |           |           |           | V    |
| Maximum DC reverse current at rated DC blocking voltage per diode          | T <sub>A</sub> = 25 °C  | I <sub>R</sub>                | 5.0        |           |           |           |           |           |           | μA   |
|  | T <sub>A</sub> = 125 °C |                               | 500        |           |           |           |           |           |           |      |
| Typical junction capacitance per diode                                     |                         | C <sub>J</sub> <sup>(1)</sup> | 16         |           |           |           |           |           |           | pF   |

**Note**

<sup>(1)</sup> Measured at 1.0 MHz and applied reverse voltage of 4.0 V

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                 |            |           |           |           |           |           |           |      |  |
|---|---------------------------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------|--|
| PARAMETER   | SYMBOL                          | DFL 15005S | DFL 1501S | DFL 1502S | DFL 1504S | DFL 1506S | DFL 1508S | DFL 1510S | UNIT |  |
| Typical thermal resistance  | R <sub>θJA</sub> <sup>(1)</sup> | 40         |           |           |           | °C/W      |           |           |      |  |
|   | R <sub>θJL</sub> <sup>(1)</sup> | 15         |           |           |           |           |           |           |      |  |

**Note**

<sup>(1)</sup> Units mounted on P.C.B. with 0.51" x 0.51" (13 mm x 13 mm) copper pads

| ORDERING INFORMATION (Example) |                 |                        |               |                                  |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
| DFL1506S-E3/45                 | 0.341           | 45                     | 50            | Tube                             |
| DFL1506S-E3/77                 | 0.341           | 77                     | 1500          | 13" diameter paper tape and reel |

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

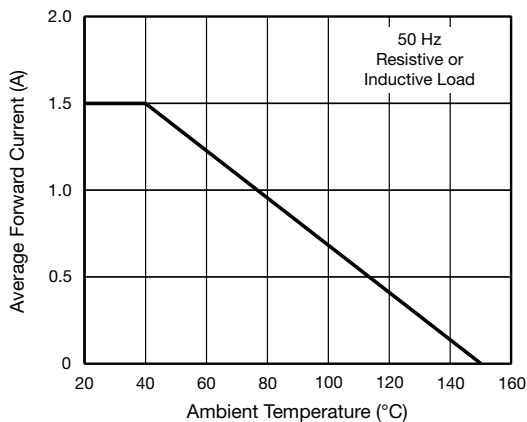


Fig. 1 - Forward Current Derating Curve Per Diode

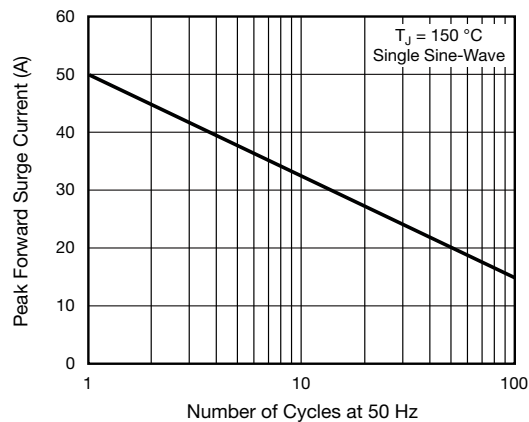
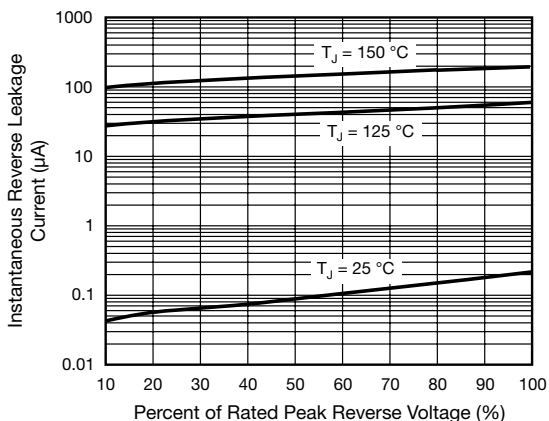
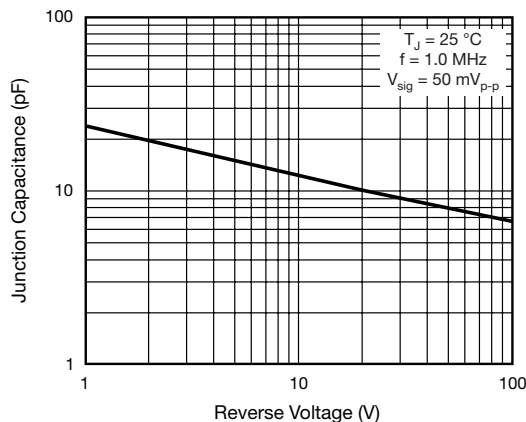
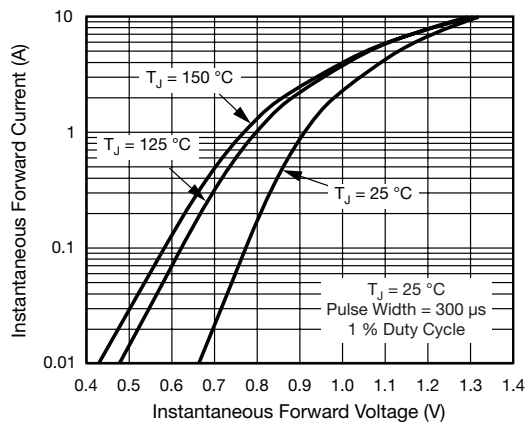


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode



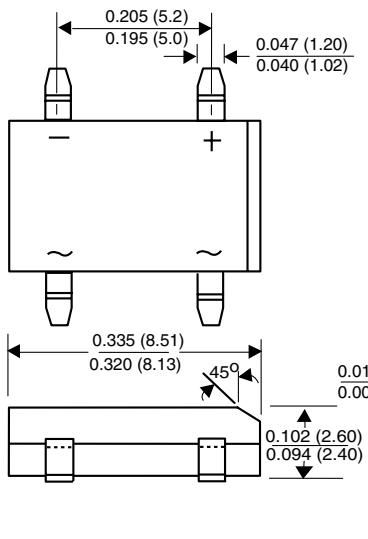
# DFL15005S thru DFL1510S

Vishay General Semiconductor

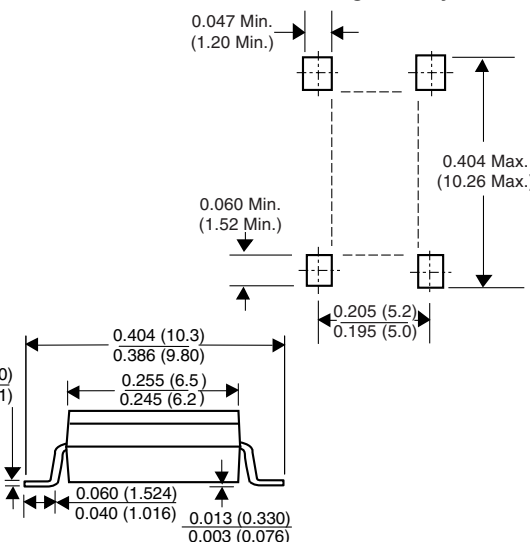


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### Case Style Low Profile DFS



### Mounting Pad Layout





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