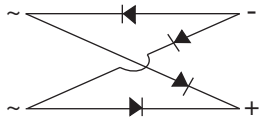




## Low Profile Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers



Case Style Low Profile 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 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:** Low profile 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	Low profile DFS
$I_{F(AV)}$	1.5 A
$V_{RRM}$	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	50 A
$I_R$	5 $\mu$ A
$V_F$ at $I_F = 1.5$ A	1.1 V
$T_J$ max.	150 °C
Diode variations	Quad

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

(1) Units mounted on PCB with 0.51" x 0.51" (13 mm x 13 mm) copper pads



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**

(1) 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**

(1) Units mounted on PCB 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)**

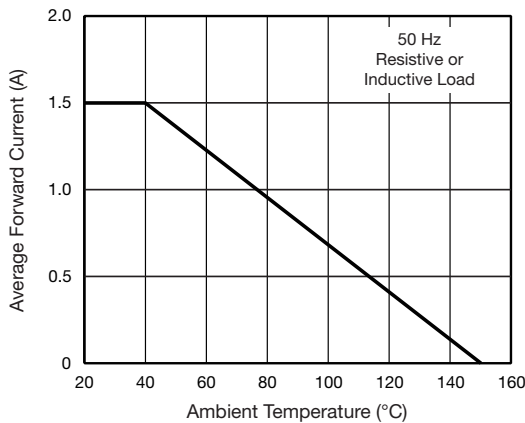


Fig. 1 - Forward Current Derating Curve Per Diode

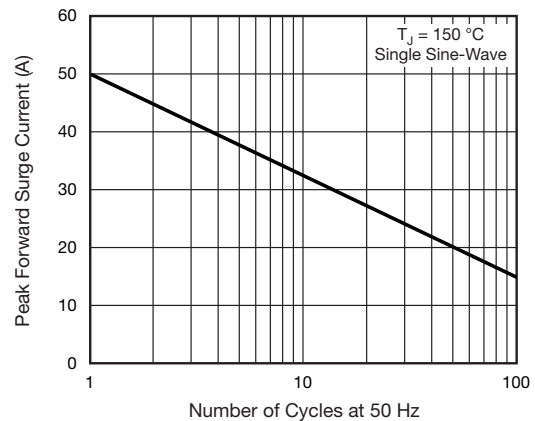


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

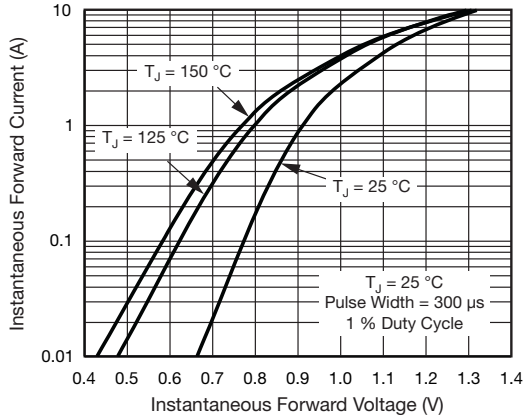


Fig. 3 - Typical Forward Voltage Characteristics Per Diode

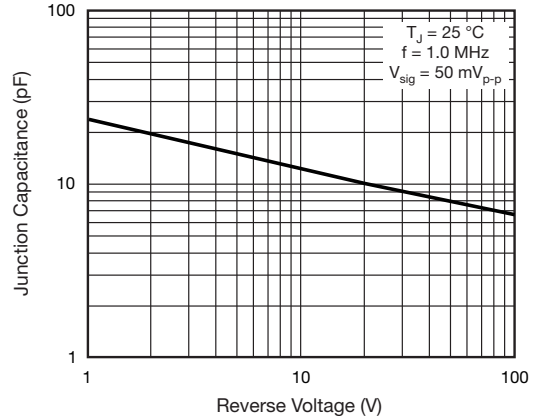


Fig. 5 - Typical Junction Capacitance Per Diode

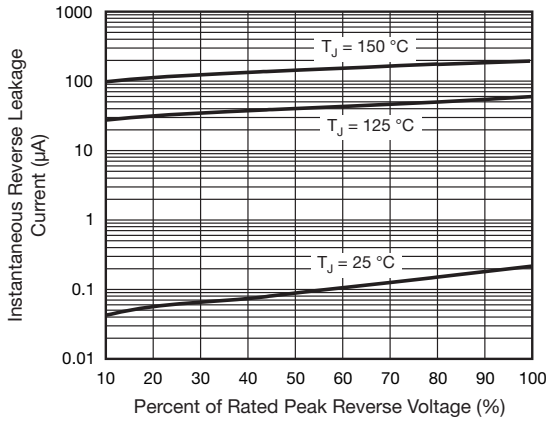
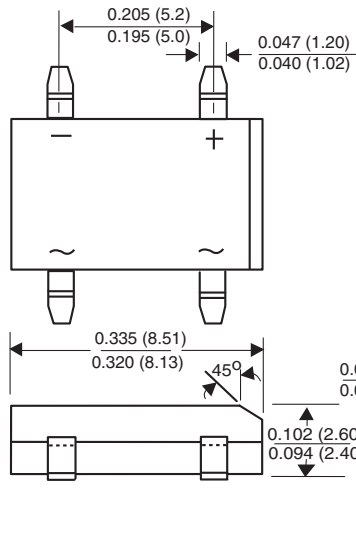


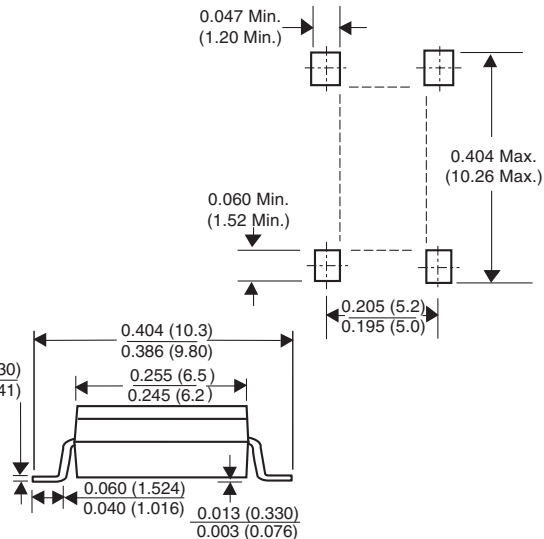
Fig. 4 - Typical Reverse Characteristics Per Diode

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

**Case Style Low Profile DFS**



**Mounting Pad Layout**





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