

### **DFL15005S thru DFL1510S**

Vishay General Semiconductor

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



Case Style Low Pro le DFS

PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub> 1.5 A							
$V_{RRM}$	50 V to 1000 V						
I <sub>FSM</sub>	50 A						
I <sub>R</sub>	5 μΑ						
$V_{F}$	1.1 V						
T <sub>J</sub> max.	150 °C						

#### **FEATURES**

• Low profile: typical height of 2.5 mm



· Ideal for automated placement

• High surge current capability

 Meets MSL level 1, per J-STD-020, LF maximum con 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

#### **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

MAXIMUM RATINGS (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
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	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 <sub>A</sub> = 40 °C	I <sub>F(AV)</sub> (1)	1.5							А
Peak forward surge current single half sine-wave superimposed on rated load	I <sub>FSM</sub>	50							А
Rating for fusing (t < 8.3 ms)	I <sup>2</sup> t	10						A <sup>2</sup> s	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150						°C	

#### Note

 $^{(1)}$  Units mounted on P.C.B. with 0.51" x 0.51" (13 mm x 13 mm) copper pads

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<b>ELECTRICAL CHARACTERISTICS</b> (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	T <sub>A</sub> = 25 °C								μA	
voltage per diode	T <sub>A</sub> = 125 °C	I <sub>R</sub>	500							μΑ
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	SYMBOL DFL 15005S DFL 1501S DFL 1502S DFL 1504S DFL 1506S DFL 1508S DFL 1510S UN						UNIT	
Typical thermal resistance	R <sub>0JA</sub> (1)	40							°C/W
Typical thermal resistance	R <sub>θJL</sub> <sup>(1)</sup>	15						•	- C/VV

#### 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)

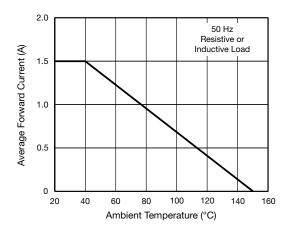


Fig. 1 - Forward Current Derating Curve Per Diode

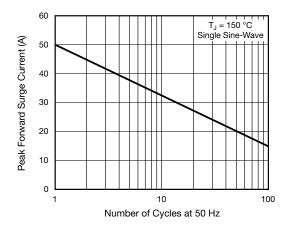


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode



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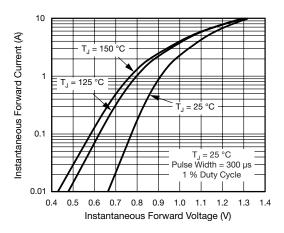


Fig. 3 - Typical Forward Voltage Characteristics Per Diode

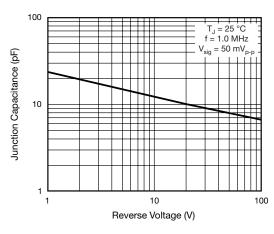


Fig. 5 - Typical Junction Capacitance Per Diode

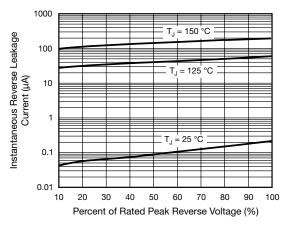


Fig. 4 - Typical Reverse Characteristics Per Diode

#### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters) Case Style Low Profile DFS **Mounting Pad Layout** 0.205 (5.2) 0.047 Min. 0.195 (5.0) (1.20 Min.) 0.047 (1.20) 0.040 (1.02) 0.404 Max. (10.26 Max.) 0.060 Min. (1.52 Min.) 0.205 (5.2) 0.195 (5.0) 0.335 (8.51) 0.404 (10.3) 0<del>.386 (9.8</del>0) 0.320 (8.13) 0.013 (0.330) 0.255 (6.5) 0.009 (0.241) 0.245 (6.2) 0.102 (2.60) 0.094 (2.40) 0.060 (1.524) 0.040 (1.016) 0.013 (0.330) 0.003 (0.076)



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