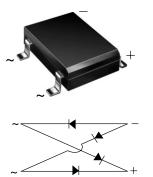
Vishay General Semiconductor

# Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers



**Case Style DFS** 

PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub> 1 A							
V <sub>RRM</sub>	50 V to 1000 V						
I <sub>FSM</sub>	50 A						
I <sub>R</sub>	5 μΑ						
V <sub>F</sub>	1.1 V						
T <sub>J</sub> max.	150 °C						

### FEATURES

- UL recognition, file number E54214
- · Ideal for automated placement
- High surge current capability



ROHS COMPLIANT

- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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: DFS

Epoxy meets UL 94V-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	DF005S	DF01S	DF02S	DF04S	DF06S	DF08S	DF10S	UNIT
Device marking code		DF005S	DF01S	DF02S	DF04S	DF06S	DF08S	DF10S	
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 <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum average forward output rectified current at $T_A = 40 \ ^\circ C^{(1)}$	I <sub>F(AV)</sub>	I <sub>F(AV)</sub> 1.0							A
Peak forward surge current single half sine-wave superimposed on rated load	I <sub>FSM</sub> 50							A	
Rating for fusing (t < 8.3 ms)	l <sup>2</sup> t 10						A <sup>2</sup> s		
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	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 x 13 mm) copper pads

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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25$ °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	DF005S	DF01S	DF02S	DF04S	DF06S	DF08S	DF10S	UNIT
Maximum instantaneous forward voltage drop per diode	1.0 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 T <sub>A</sub> = 125 °C	I <sub>R</sub>	5.0 500						μA	
Typical junction capacitance per diode <sup>(1)</sup>		CJ				25				pF

Note:

(1) Measured at 1.0 MHz and applied reverse voltage of 4.0 V

<b>THERMAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL DF005S DF01S DF02S DF04S DF06S DF08S DF10S UN							UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{ heta JA} \ R_{ heta JL}$	40 15						°C/W

Note:

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

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
DF06S-E3/45	0.399	45	50	Tube					
DF06S-E3/77	0.399	77	1500	13" diameter paper tape and reel					

### **RATINGS AND CHARACTERISTICS CURVES**

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

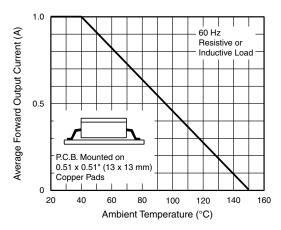
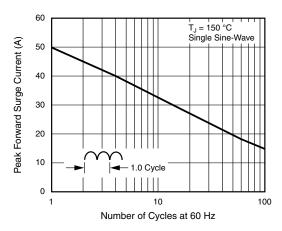
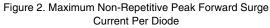


Figure 1. Derating Curve Output Rectified Current







# DF005S thru DF10S

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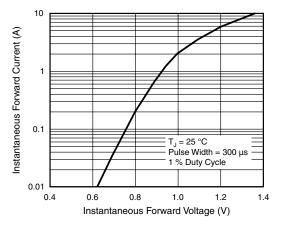


Figure 3. Typical Forward Characteristics Per Diode

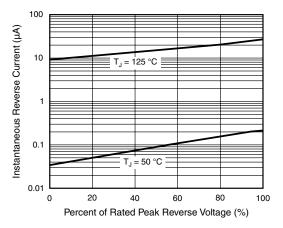


Figure 4. Typical Reverse Leakage Characteristics Per Diode

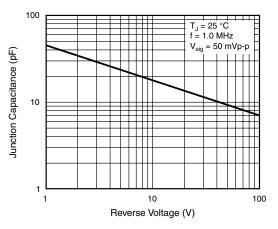


Figure 5. Typical Junction Capacitance Per Diode

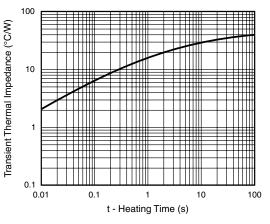
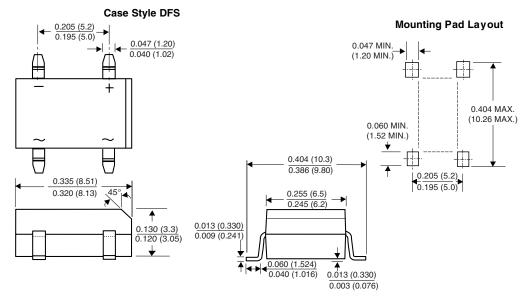


Figure 6. Typical Transient Thermal Impedance

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





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