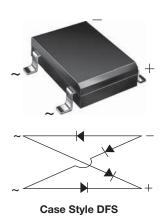


## DF005SA, DF01SA, DF02SA, DF04SA, DF06SA, DF08SA, DF10SA

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Vishay General Semiconductor

# Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers



PRIMARY CHARACTERISTICS							
Package	DFS						
I <sub>F(AV)</sub>	1 A						
V <sub>RRM</sub>	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V						
I <sub>FSM</sub>	30 A						
I <sub>R</sub>	5 μΑ						
V <sub>F</sub> at I <sub>F</sub> = 1.0 A	1.1 V						
T <sub>J</sub> max.	150 °C						
Diode variations	Quad						

#### **FEATURES**





- · Ideal for automated placement
- · Middle surge current capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

RoHS

 Material categorization: For definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

#### **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

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	DF005SA	DF01SA	DF02SA	DF04SA	DF06SA	DF08SA	DF10SA	UNIT
Device marking code		DFA005S	DFA01S	DFA02S	DFA04S	DFA06S	DFA08S	DFA10S	
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 $T_A = 40  ^{\circ}\text{C}^{(1)}$	I <sub>F(AV)</sub>	1.0							Α
Peak forward surge current single half sine-wave superimposed on rated load	I <sub>FSM</sub>	SM 30							Α
Rating for fusing (t < 8.3 ms)	l <sup>2</sup> t 4.5							A <sup>2</sup> s	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub> - 55 to + 150							°C	

#### Note

<sup>(1)</sup> Units mounted on PCB 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	DF005SA	DF01SA	DF02SA	DF04SA	DF06SA	DF08SA	DF10SA	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	T <sub>A</sub> = 25 °C	1				5.0				
blocking voltage per diode	T <sub>A</sub> = 125 °C	IR	500						μA	
Typical junction capacitance per diode (1)		CJ				25				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 DF005SA DF01SA DF02SA DF04SA DF06SA DF08SA DF10SA UNIT							
Typical thermal resistance (1)	nicel thermal registence (1) R <sub>0</sub> JA 40						°C/W	
Typical thermal resistance (*)	$R_{ heta JL}$	15						C/VV

#### 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									
DF06SA-E3/45	0.386	45	50	Tube					
DF06SA-E3/77	0.386	77	1500	13" diameter paper tape and reel					

### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

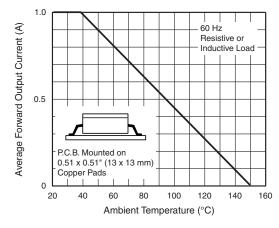


Fig. 1 - Derating Curve Output Rectified Current

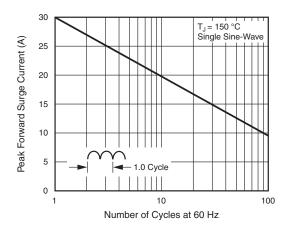


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode



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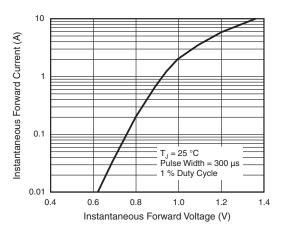


Fig. 3 - Typical Forward Characteristics Per Diode

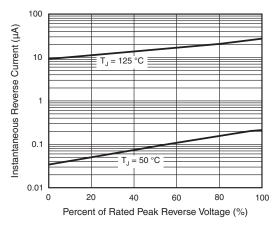


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

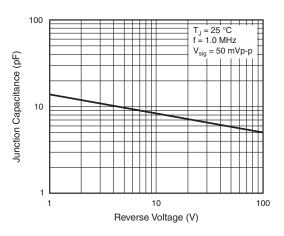


Fig. 5 - Typical Junction Capacitance Per Diode

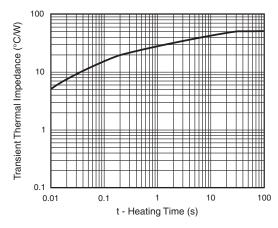
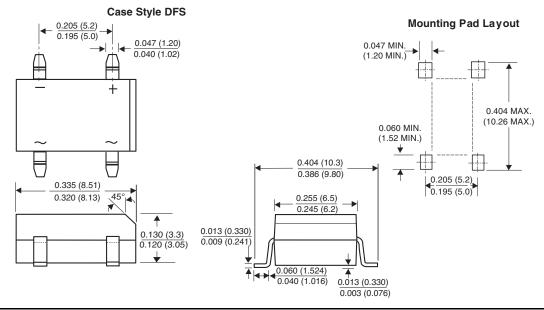


Fig. 6 - Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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