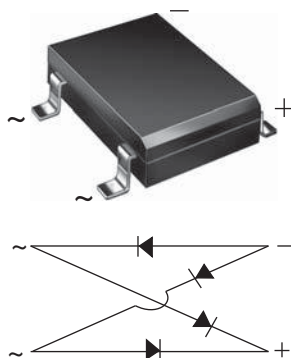




Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers



Case Style DFS

FEATURES

- 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

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: 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	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 μ 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	DF15005S	DF1501S	DF1502S	DF1504S	DF1506S	DF1508S	DF1510S	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 ⁽¹⁾	$I_{F(AV)}$	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 ² 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 _A = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	DF15005S	DF1501S	DF1502S	DF1504S	DF1506S	DF1508S	DF1510S	UNIT
Maximum instantaneous forward voltage drop per diode	1.5 A	V _F	1.1							V
Maximum DC reverse current at rated DC blocking voltage per diode	T _A = 25 °C	I _R	5.0							μA
	T _A = 125 °C		500							
Typical junction capacitance per diode ⁽¹⁾		C _J	25							pF

Note

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	DF15005S	DF1501S	DF1502S	DF1504S	DF1506S	DF1508S	DF1510S	UNIT
Typical thermal resistance ⁽¹⁾	R _{θJA}	40							°C/W
	R _{θJL}	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
DF1506S-E3/45	0.399	45	50	Tube
DF1506S-E3/77	0.399	77	1500	13" diameter paper tape and reel

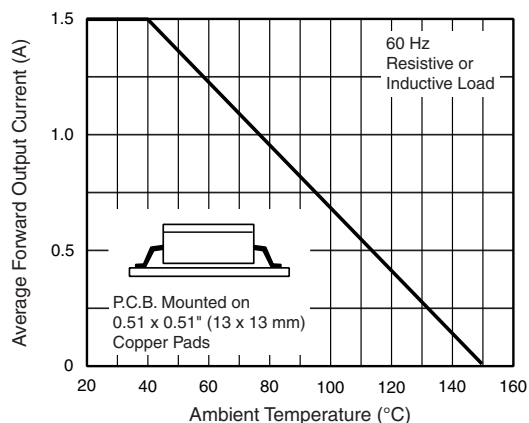
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Derating Curve Output Rectified Current

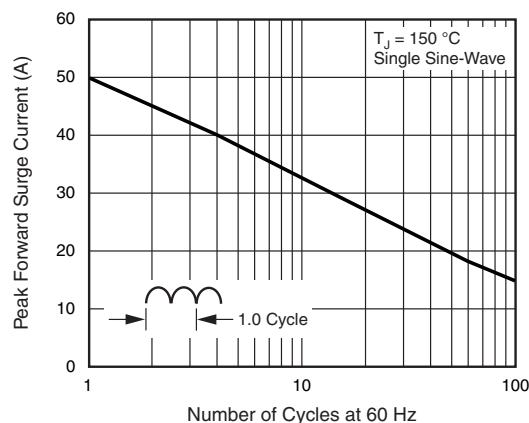


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

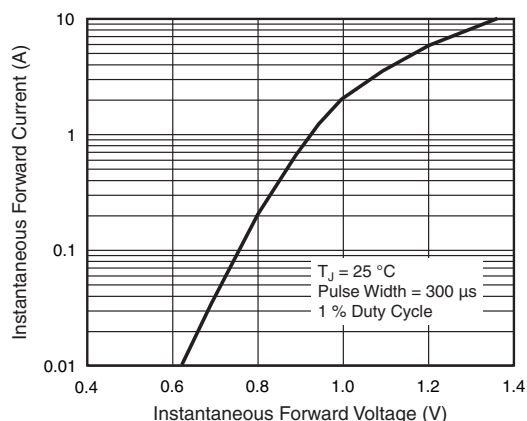


Fig. 3 - Typical Forward Characteristics Per Diode

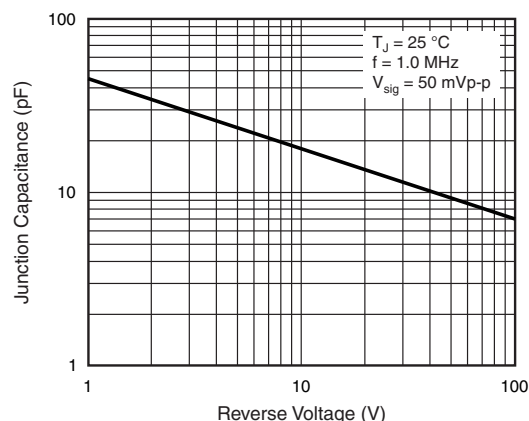


Fig. 5 - Typical Junction Capacitance Per Diode

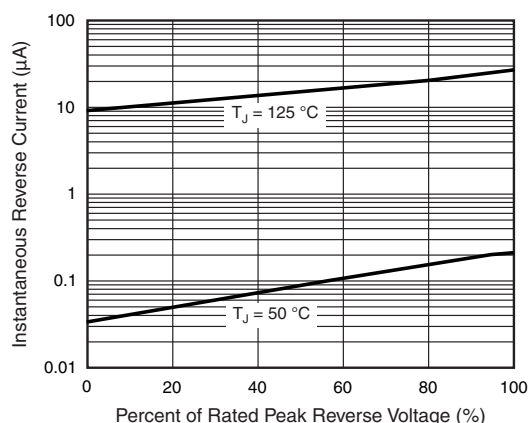


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

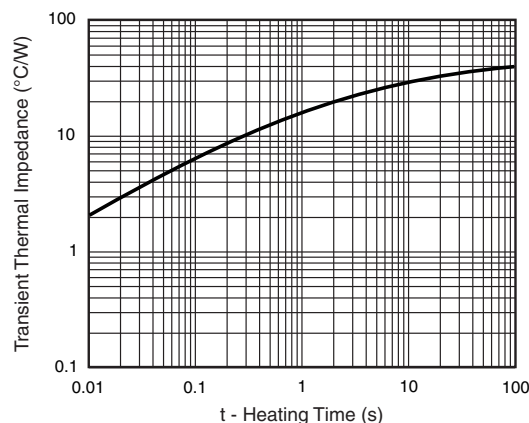
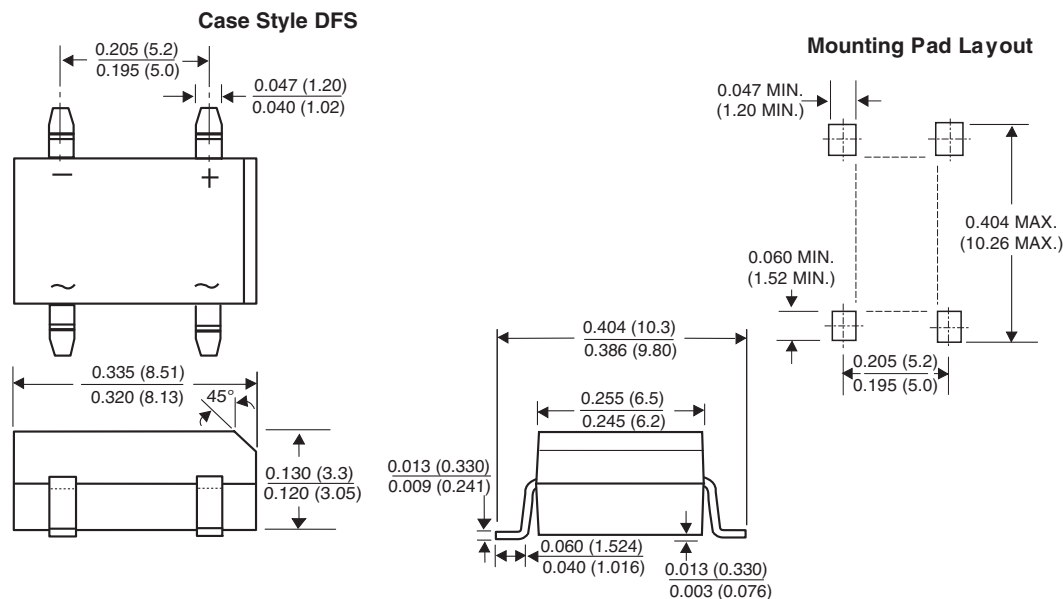


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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