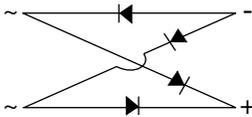




Low Profile Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifiers



Case Style Low Pro le 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 250 °C
- Solder dip 260 °C, 40 s
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS
COMPLIANT

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

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.5 A
V_{RRM}	50 V to 1000 V
I_{FSM}	50 A
I_R	5 μ A
V_F	1.1 V
T_J max.	150 °C

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	$I_{F(AV)}$ ⁽¹⁾	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 P.C.B. with 0.51" x 0.51" (13 mm x 13 mm) copper pads

DFL15005S thru DFL1510S

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T _A = 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 _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		C _J ⁽¹⁾	16							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	DFL 15005S	DFL 1501S	DFL 1502S	DFL 1504S	DFL 1506S	DFL 1508S	DFL 1510S	UNIT	
Typical thermal resistance	R _{θJA} ⁽¹⁾					40			°C/W	
	R _{θJL} ⁽¹⁾					15				

Note

⁽¹⁾ 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_A = 25 °C unless otherwise noted)

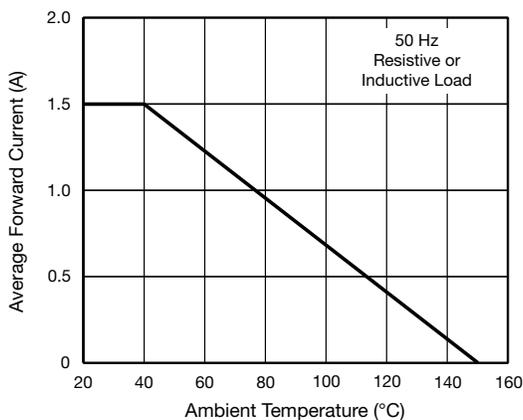


Fig. 1 - Forward Current Derating Curve Per Diode

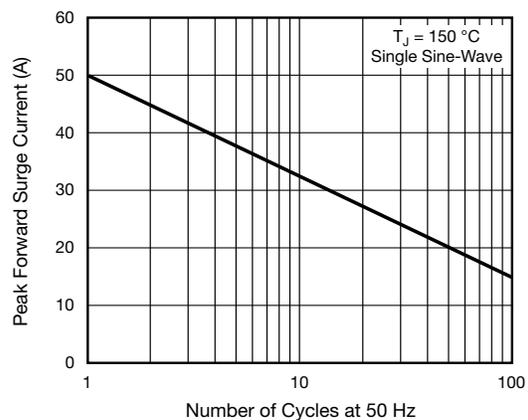


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode



DFL15005S thru DFL1510S

Vishay General Semiconductor

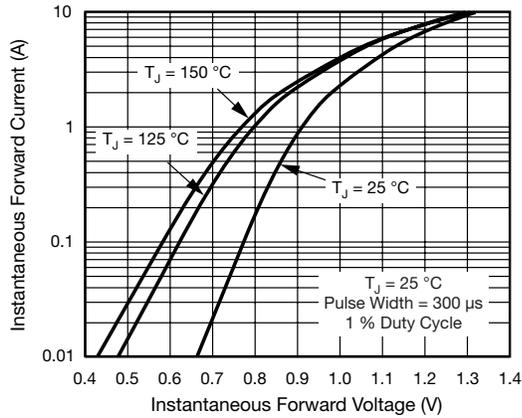


Fig. 3 - Typical Forward Voltage Characteristics Per Diode

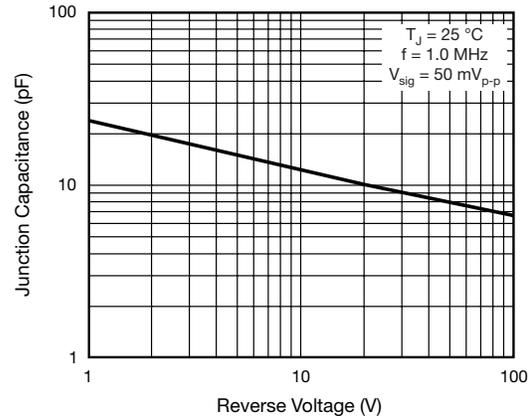


Fig. 5 - Typical Junction Capacitance Per Diode

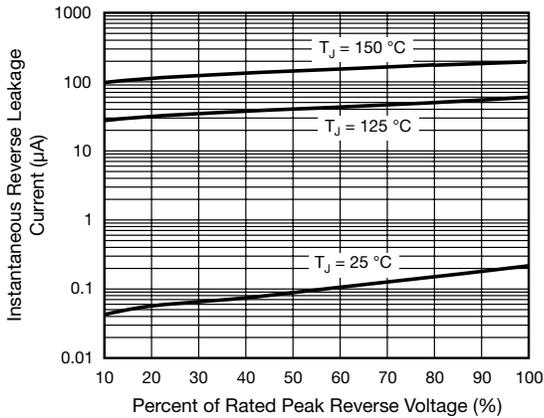
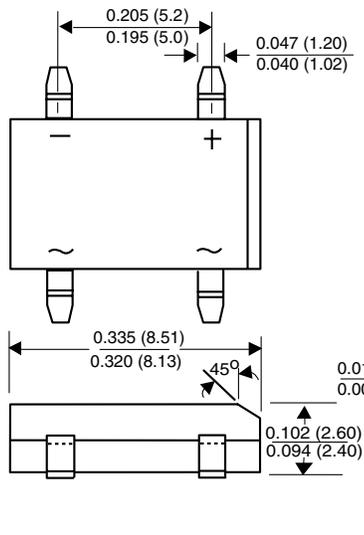


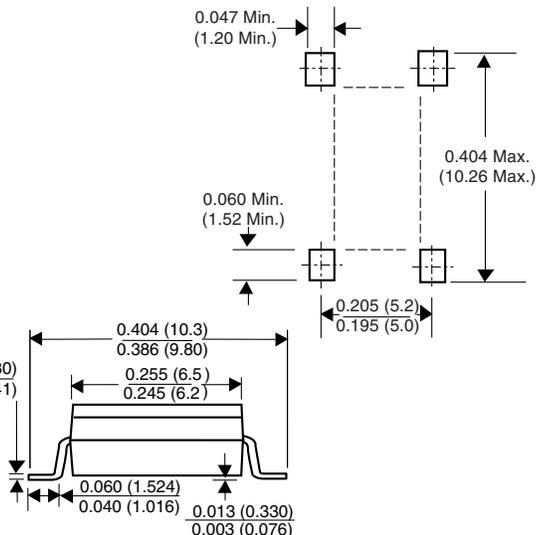
Fig. 4 - Typical Reverse Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style Low Profile DFS



Mounting Pad Layout





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