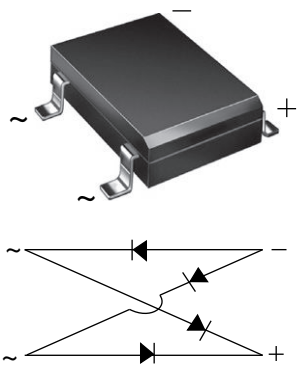
Miniature Glass Passivated Ultrafast Surface-Mount Bridge Rectifiers



Case Style DFS

LINKS TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1 A
V_{RRM}	50 V, 100 V, 150 V, 200 V
I_{FSM}	50 A
I_R	5 µA
V_F at I_F = 1.0 A	1.05 V
t_{rr}	50 ns
T_J max.	150 °C
Package	DFS
Circuit configuration	Quad

FEATURES

- UL recognition, file number E54214
- Ideal for automated placement
- Glass passivated pellet chip junction
- Ultrafast reverse recovery time for high frequency
- 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

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	EDF1AS	EDF1BS	EDF1CS	EDF1DS	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Maximum RMS voltage	V_{RMS}	35	70	106	140	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	V
Maximum average forward output rectified current at T_A = 40 °C (1)	$I_{F(AV)}$	1.0				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^2s
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150				°C

Note

(1) Pulse test: 300 ms pulse width, 1 % duty cycle

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**EDF1AS**	**EDF1BS**	**EDF1CS**	**EDF1DS**	**UNIT**
Maximum instantaneous forward voltage drop per diode	1.0 A (1)	V_F	1.05				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		1.0				mA
Maximum reverse recovery time per diode	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	50				ns

Note

(1) Pulse test: 300 ms pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**SYMBOL**	**EDF1AS**	**EDF1BS**	**EDF1CS**	**EDF1DS**	**UNIT**	
Typical thermal resistance (1)	$R_{\theta JA}$	38				°C/W	
	$R_{\theta JL}$	12					

Note

(1) PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
EDF1DS-E3/45	0.406	45	50	Tube
EDF1DS-E3/77	0.406	77	1500	13" diameter paper tape and reel

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

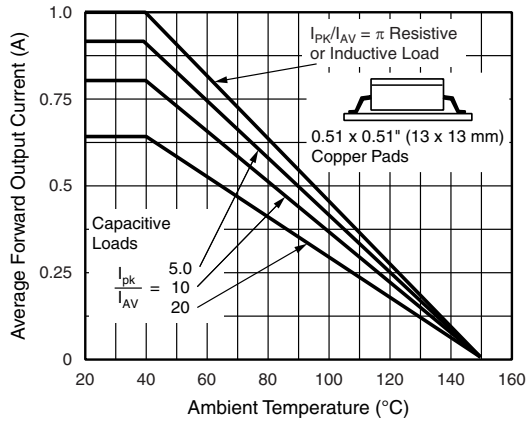


Fig. 1 - Derating Curves Output Rectified Current

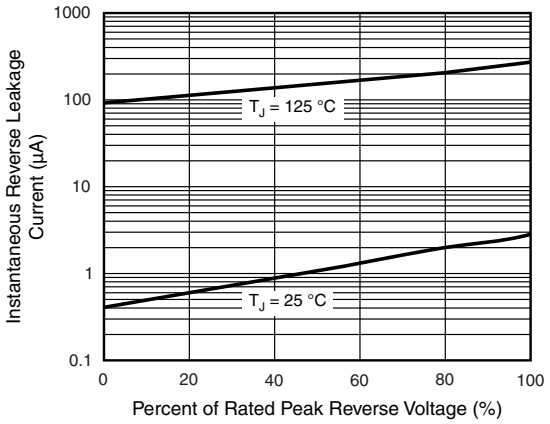


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

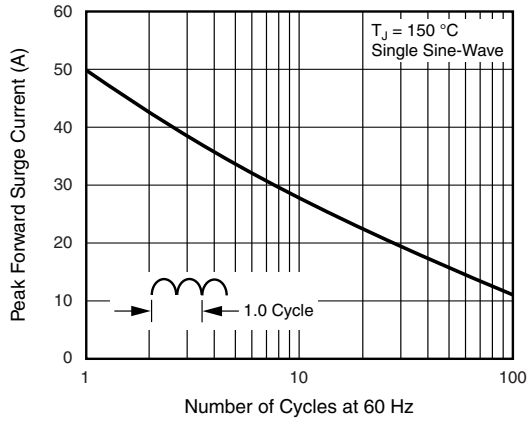


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

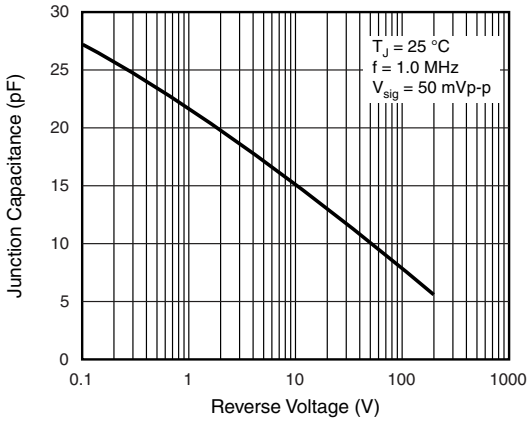


Fig. 5 - Typical Junction Capacitance Per Diode

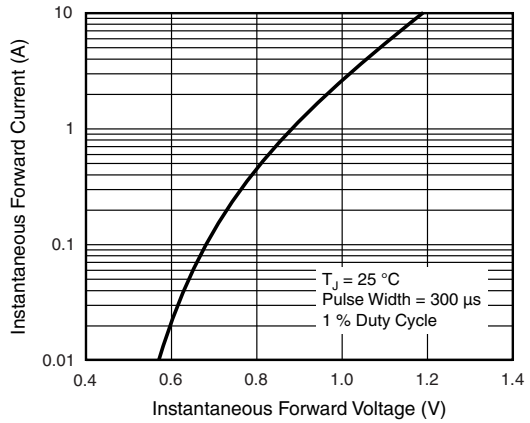
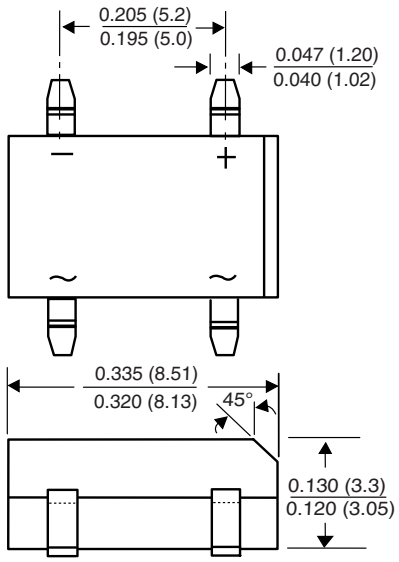


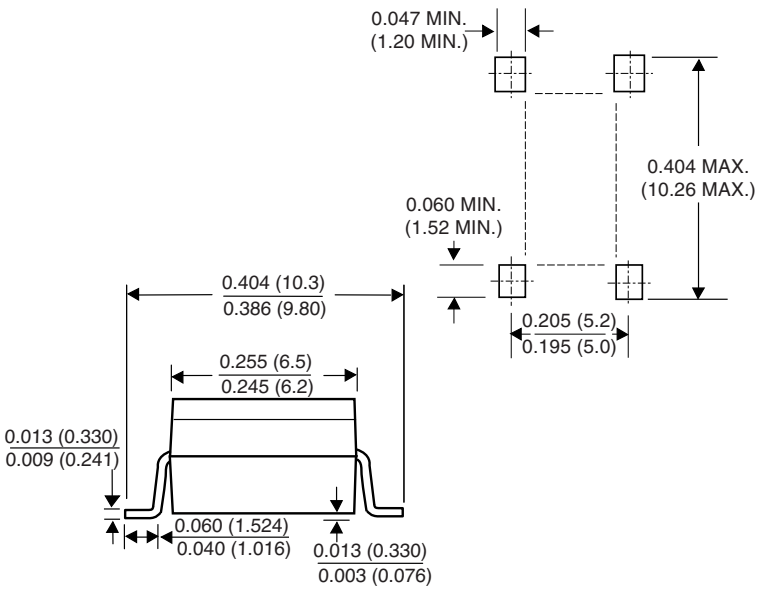
Fig. 3 - Typical Forward Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style DFS



Mounting Pad Layout



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