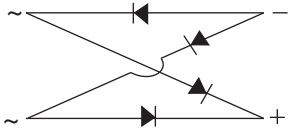


Miniature Glass Passivated Ultrafast Surface Mount Bridge Rectifiers



Case Style DFS

FEATURES

- UL recognition, file number E54214
- Ideal for automated placement
- Glass passivated pallet 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

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

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 ² s
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				μ A
	$T_A = 125$ °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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	EDF1AS	EDF1BS	EDF1CS	EDF1DS	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$	38				$^\circ\text{C/W}$
	$R_{\theta JL}$	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

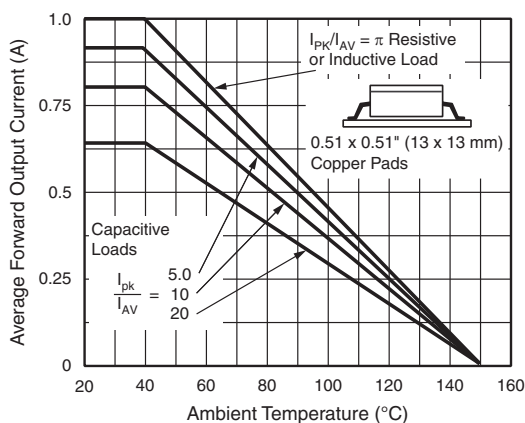
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Derating Curves Output Rectified Current

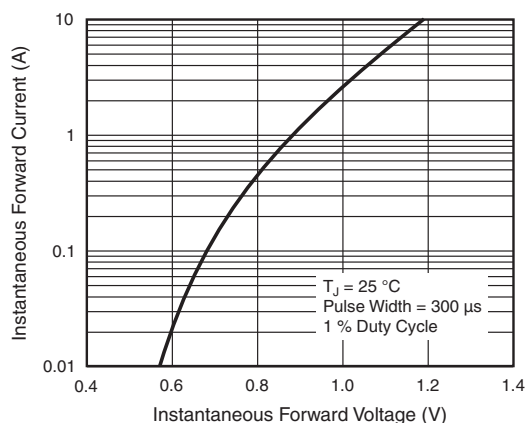


Fig. 3 - Typical Forward Characteristics Per Diode

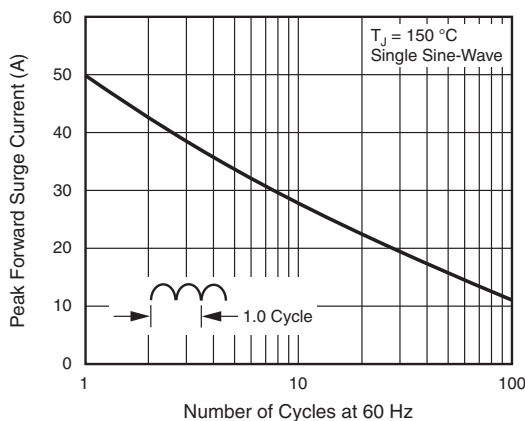


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

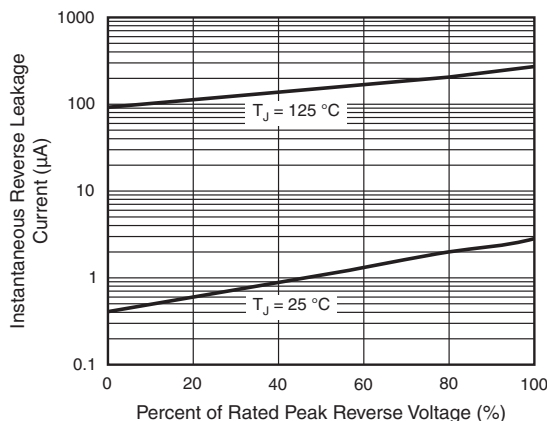


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

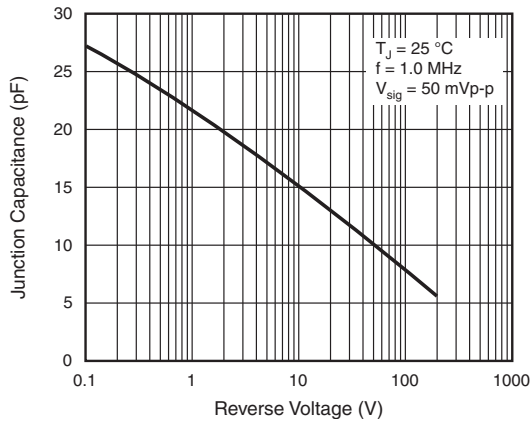
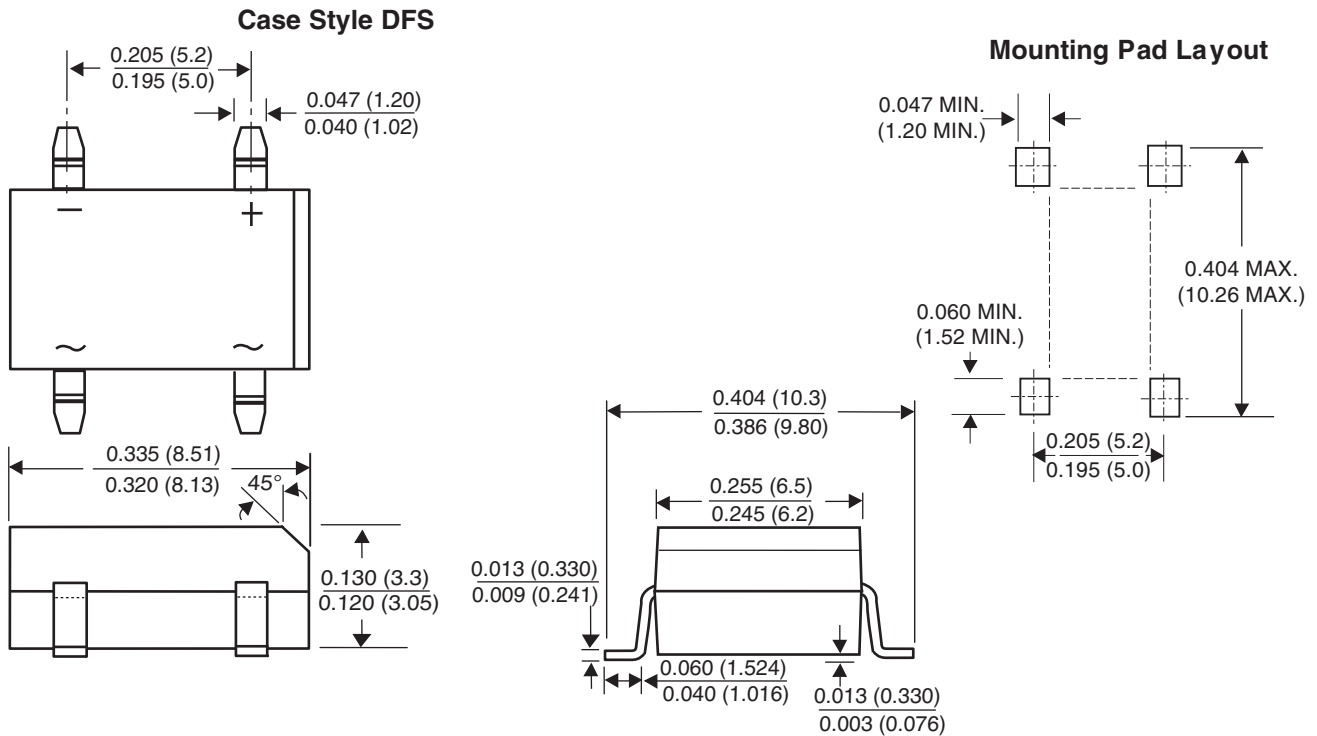


Fig. 5 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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