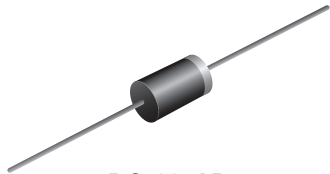




Glass Passivated Ultrafast Plastic Rectifier



DO-201AD

FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS
COMPLIANT

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	3.0 A
V_{RRM}	50 V, 100 V, 150 V, 200 V, 300 V, 400 V
I_{FSM}	125 A
t_{rr}	50 ns
V_F	0.95 V, 1.25 V
$T_J \text{ max.}$	175 °C
Package	DO-201AD
Circuit configuration	Single

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, and telecommunication.

MECHANICAL DATA

Case: DO-201AD

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 JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	EGP31A	EGP31B	EGP31C	EGP31D	EGP31F	EGP31G	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 150\text{ °C}$	$I_{F(AV)}$	3.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	125						A
Operating and storage temperature range	T_J, T_{STG}	-65 to +175						°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	EGP31A	EGP31B	EGP31C	EGP31D	EGP31F	EGP31G	UNIT
Maximum instantaneous forward voltage	3.0 A	V _F ⁽¹⁾	0.95				1.25		V
Maximum DC reverse current at rated DC blocking voltage	T _A = 25 °C	I _R ⁽²⁾	5.0						μA
	T _A = 125 °C		100						
Maximum reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	t _{rr}	50						ns
Typical junction capacitance	4.0 V, 1 MHz	C _J	117				48		pF

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: pulse width, ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	EGP31A	EGP31B	EGP31C	EGP31D	EGP31F	EGP31G	UNIT	
Typical thermal resistance	R _{θJA} ⁽¹⁾⁽²⁾	55						°C/W	
	R _{θJL} ⁽²⁾⁽³⁾	8.5							

Notes

- (1) The heat generated must be less than the thermal conductivity from junction-to-ambient: dP_D/dT_J < 1/ R_{θJA}
- (2) Thermal resistance R_{θJA} - junction to ambient, R_{θJL} - junction to lead at 0.375" (9.5 mm) lead length (use DC test method)
- (3) Device mounted on 30 mm x 30 mm PCB pad size areas.

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
EGP31G-E3/C	1.21	C	1400	13" diameter paper tape and reel
EGP31G-E3/D	1.21	D	1000	Ammo pack packaging

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

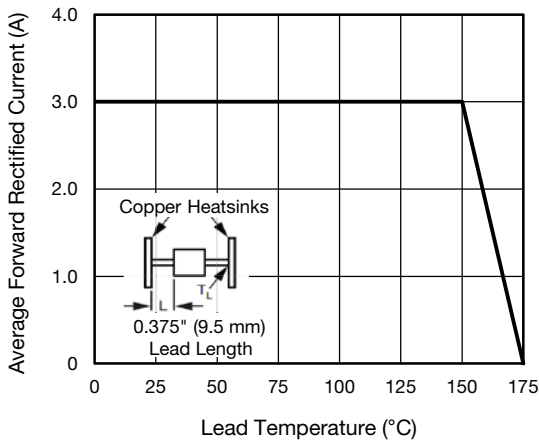


Fig. 1 - Maximum Forward Current Derating Curve

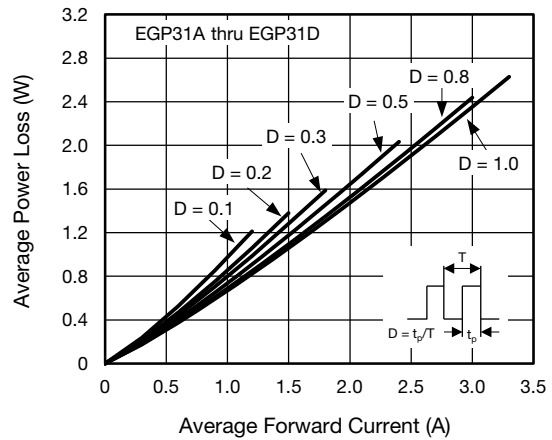


Fig. 2 - Forward Power Loss Characteristics

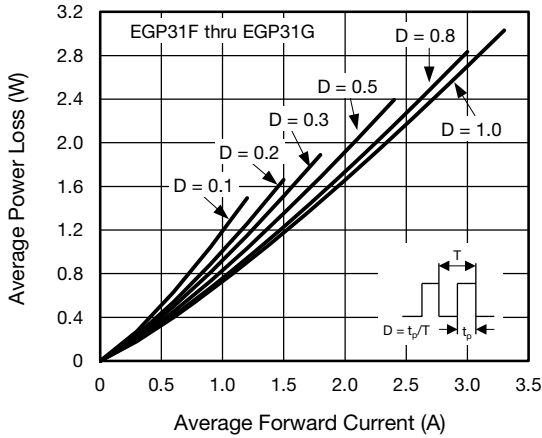


Fig. 3 - Forward Power Loss Characteristics

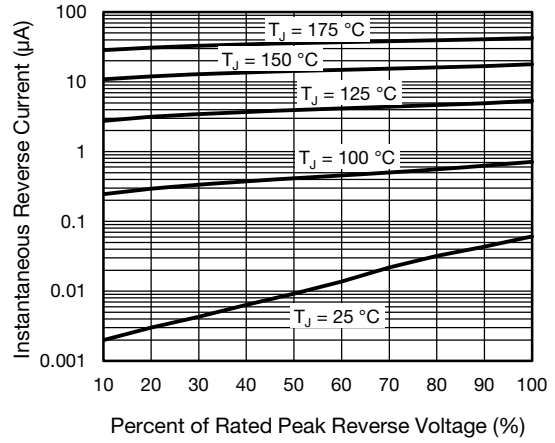


Fig. 6 - Typical Reverse Leakage Characteristics

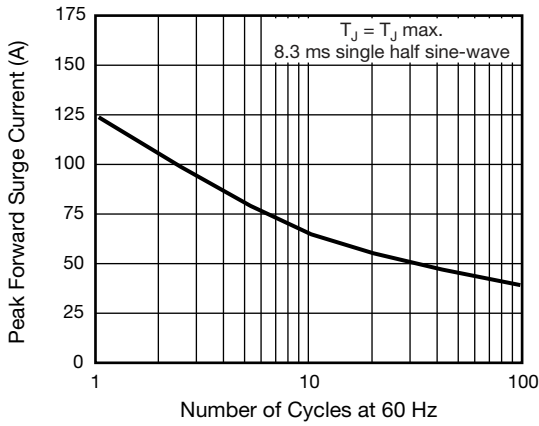


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current

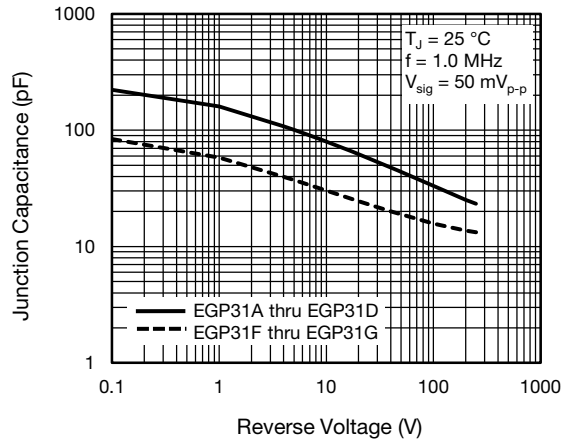


Fig. 7 - Typical Junction Capacitance

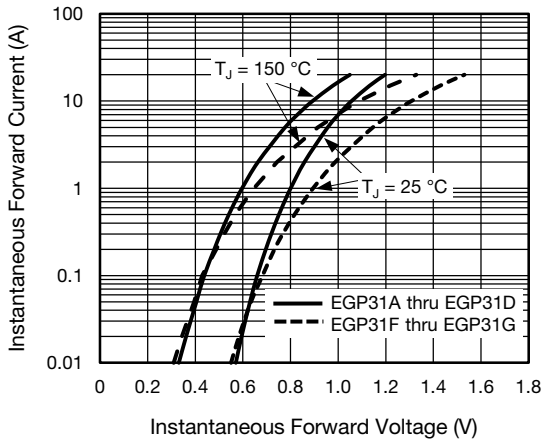


Fig. 5 - Typical Instantaneous Forward Characteristics

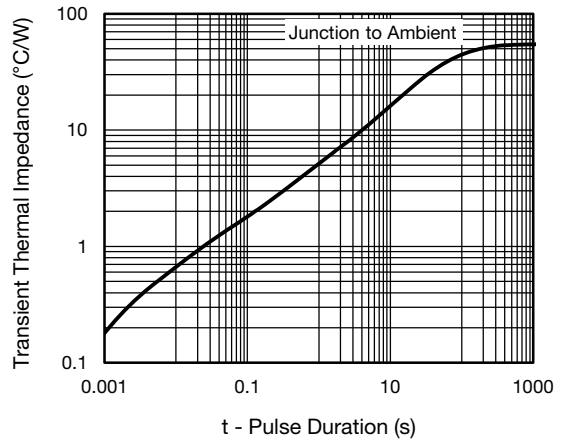
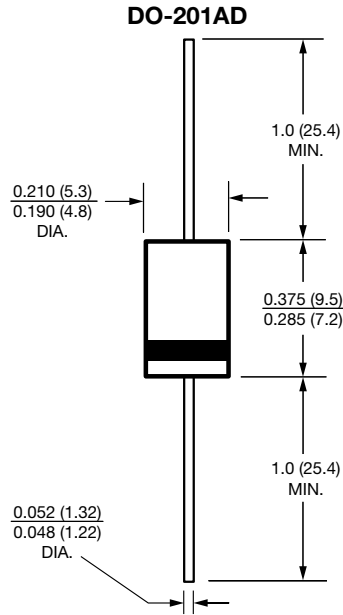


Fig. 8 - Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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