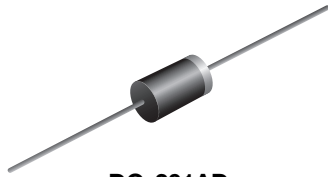


## Glass Passivated Ultrafast Plastic Rectifier



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](http://www.vishay.com/doc?99912)



RoHS  
COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	5.0 A
$V_{RRM}$	50 V, 100 V, 150 V, 200 V, 300 V, 400 V
$I_{FSM}$	150 A
$t_{rr}$	50 ns
$V_F$	0.96 V, 1.25 V
$T_J \text{ max.}$	175 °C
Package	DO-201AD
Diode variations	Single die

### 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	EGP51A	EGP51B	EGP51C	EGP51D	EGP51F	EGP51G	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 $T_L = 138.8\text{ °C}$	$I_{F(AV)}$	5						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	150						A
Operating and storage temperature range	$T_J, T_{STG}$	-65 to +175						°C



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	EGP51A	EGP51B	EGP51C	EGP51D	EGP51F	EGP51G	UNIT
Maximum instantaneous forward voltage	5.0 A	$V_F$ <sup>(1)</sup>	0.96			1.25			V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$	$I_R$ <sup>(2)</sup>	5.0						$\mu\text{A}$
	$T_A = 125\text{ }^\circ\text{C}$		50						
Maximum reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $t_{rr} = 0.25\text{ A}$	$t_{rr}$	50						ns
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	117			48			pF

**Notes**

- (1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle
- (2) Pulse test: pulse width,  $\leq 40\text{ ms}$

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	EGP51A	EGP51B	EGP51C	EGP51D	EGP51F	EGP51G	UNIT	
Typical thermal resistance	$R_{\theta JA}$ <sup>(1)(2)</sup>	55						$^\circ\text{C/W}$	
	$R_{\theta JL}$ <sup>(2)(3)</sup>	8.5							

**Notes**

- (1) The heat generated must be less than the thermal conductivity from junction-to-ambient:  $dP_D/dT_J < 1/R_{\theta JA}$
- (2) Thermal resistance  $R_{\theta JA}$  - junction to ambient,  $R_{\theta JL}$  - 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.

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
EGP51G-E3/C	1.21	C	1400	13" diameter paper tape and reel
EGP51G-E3/D	1.21	D	1000	Ammo pack packaging

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

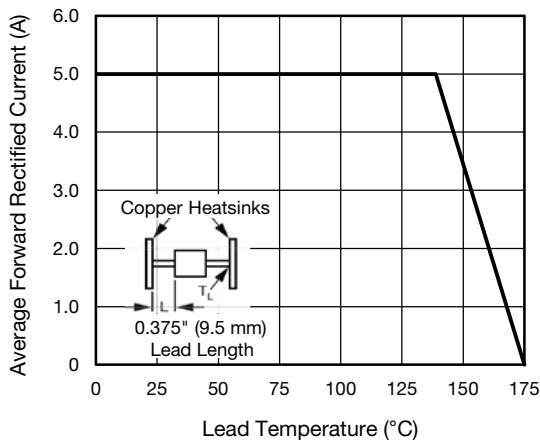


Fig. 1 - Maximum Forward Current Derating Curve

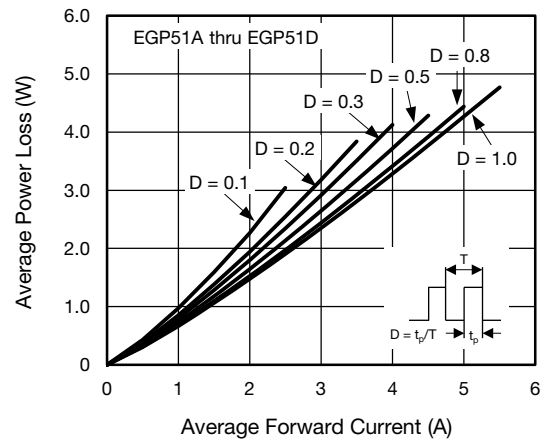


Fig. 2 - Forward Power Loss Characteristics

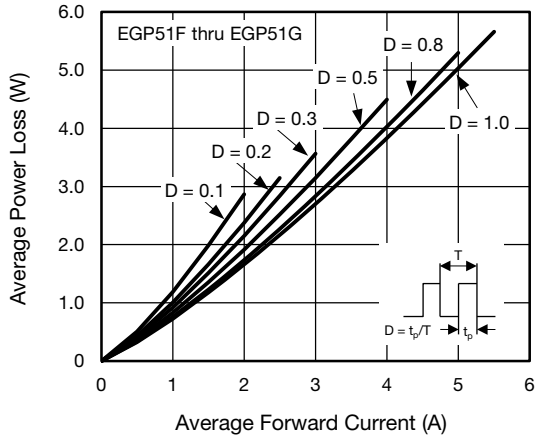


Fig. 3 - Forward Power Loss Characteristics

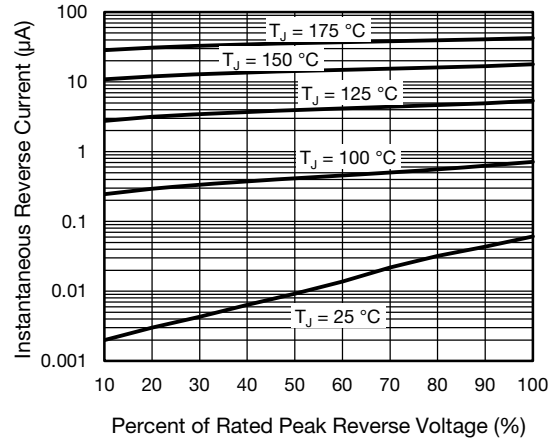


Fig. 6 - Typical Reverse Leakage Characteristics

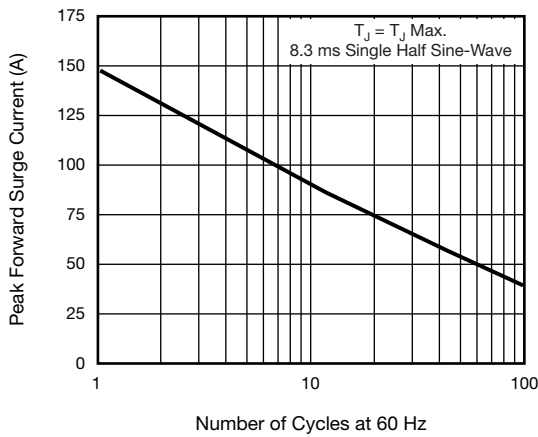


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current

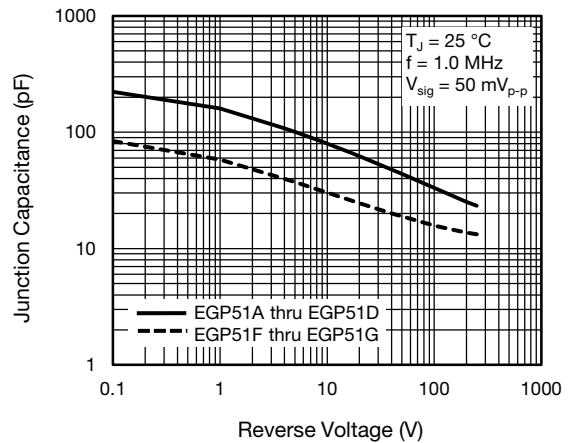


Fig. 7 - Typical Junction Capacitance

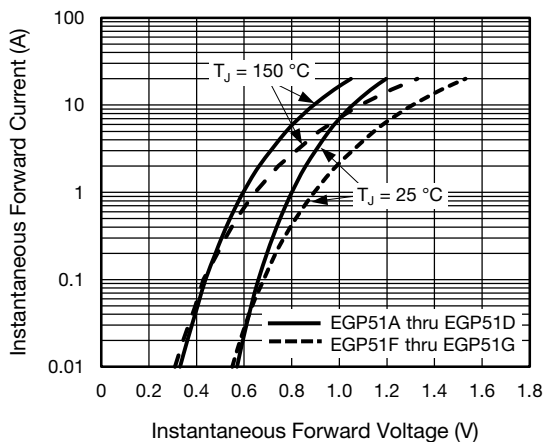


Fig. 5 - Typical Instantaneous Forward Characteristics

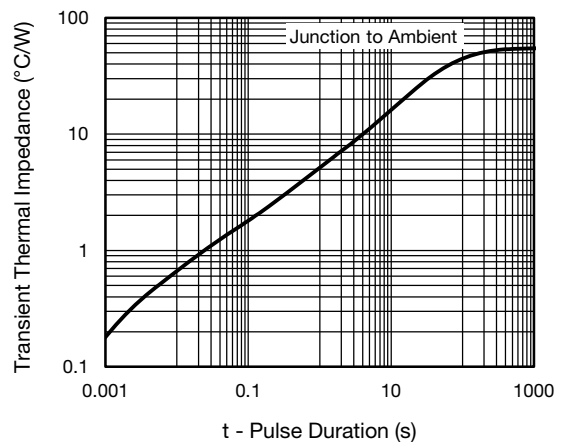
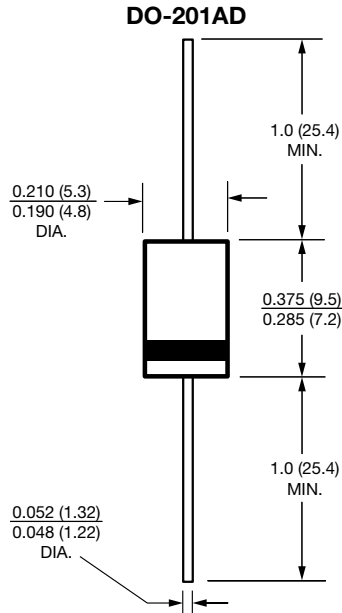


Fig. 8 - Typical Transient Thermal Impedance



**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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