

## 3A, 50V - 1000V High Efficient Rectifier

### FEATURES

- AEC-Q101 qualified available
- High current capability, Low  $V_F$
- High reliability
- High surge current capability
- Low power loss, high efficiency
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

### MECHANICAL DATA

- Case: DO-201AD
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 1.10g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	125	A
$T_{JMAX}$	150	°C
Package	DO-201AD	
Configuration	Single die	



DO-201AD



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	HER 301G	HER 302G	HER 303G	HER 304G	HER 305G	HER 306G	HER 307G	HER 308G	UNIT
Marking code on the device		HER 301G	HER 302G	HER 303G	HER 304G	HER 305G	HER 306G	HER 307G	HER 308G	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	210	280	420	560	700	V
Forward current	$I_F$	3								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	125								A
Junction temperature	$T_J$	-55 to +150								°C
Storage temperature	$T_{STG}$	-55 to +150								°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	10	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	35	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>			
Forward voltage <sup>(1)</sup>	HER301G HER302G HER303G HER304G	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V			
	HER305G			-	1.3	V			
	HER306G HER307G HER308G			-	1.7	V			
	Reverse current @ rated $V_R$ <sup>(2)</sup>			$T_J = 25^\circ\text{C}$	$I_R$	-	10	$\mu\text{A}$	
				$T_J = 125^\circ\text{C}$		-	200	$\mu\text{A}$	
Junction capacitance	HER301G HER302G HER303G HER304G HER305G	1MHz, $V_R = 4.0\text{V}$	$C_J$	60	-	pF			
	HER306G HER307G HER308G			35	-	pF			
Reverse recovery time	HER301G HER302G HER303G HER304G HER305G	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	$t_{rr}$	-	50	ns			
	HER306G HER307G HER308G			-	75	ns			

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> <sup>(1)(2)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
HER3xG	DO-201AD	1,250 / Tape & Reel
HER3xG A0G	DO-201AD	500 / Ammo box
HER3xGH	DO-201AD	1,250 / Tape & Reel
HER3xGHA0G	DO-201AD	500 / Ammo box

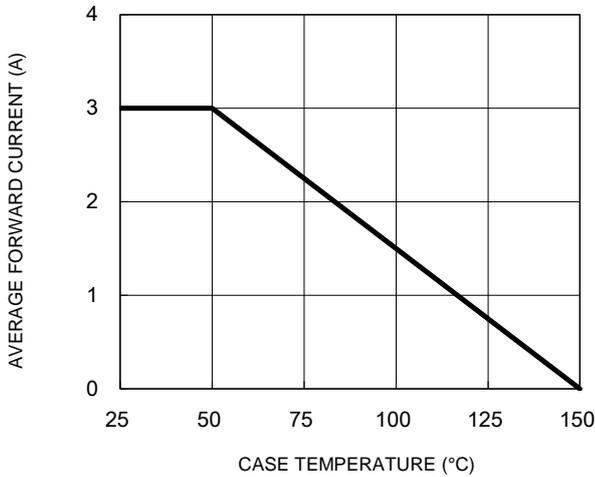
**Notes:**

1. "x" defines voltage from 50V (HER301G) to 1000V (HER308G)
2. "H" means AEC-Q101 qualified

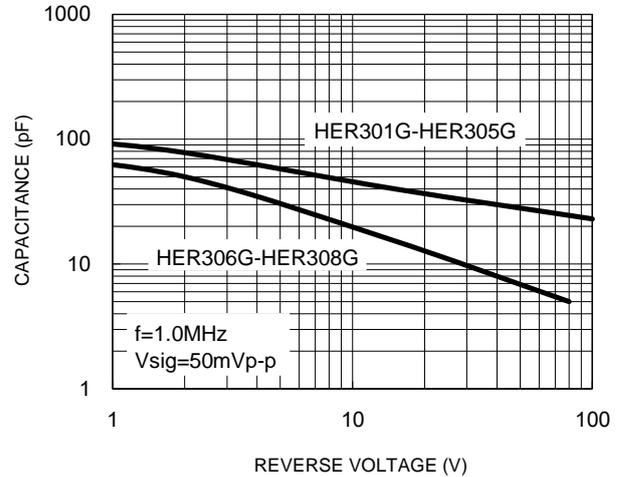
**CHARACTERISTICS CURVES**

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

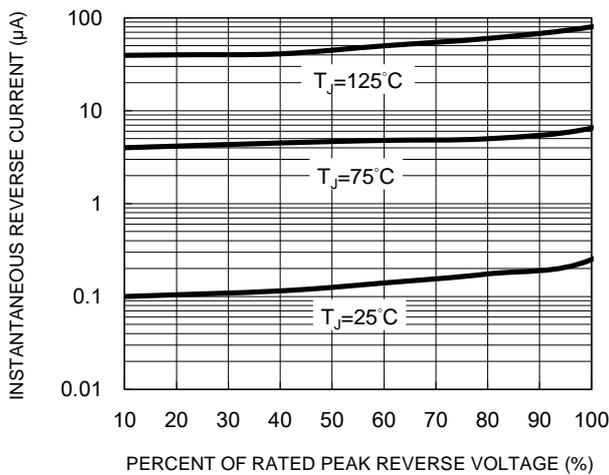
**Fig.1 Forward Current Derating Curve**



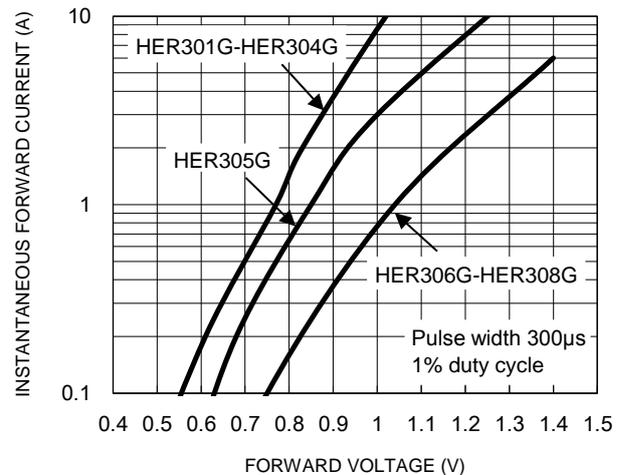
**Fig.2 Typical Junction Capacitance**



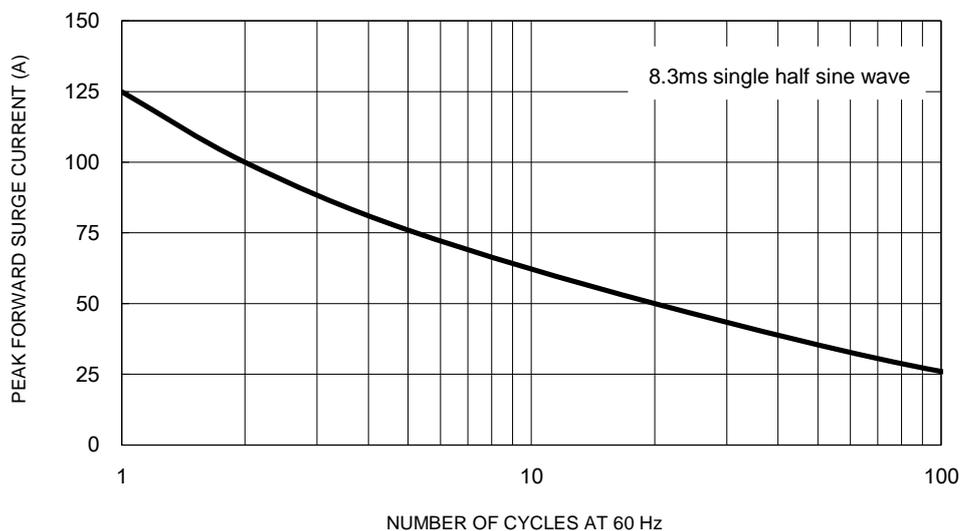
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



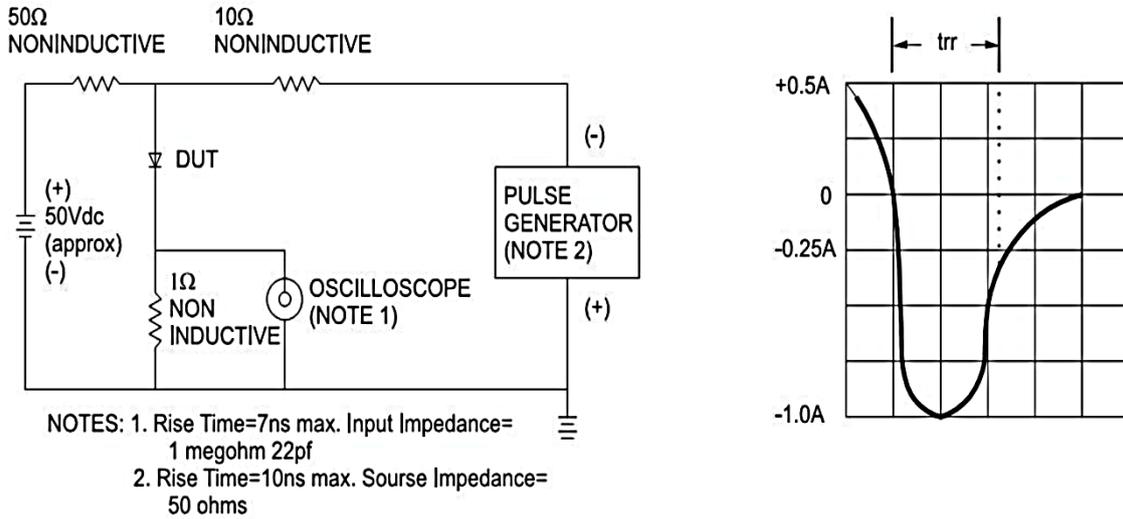
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



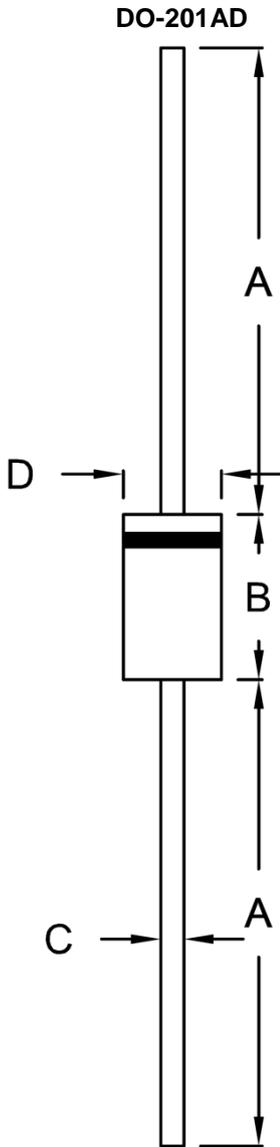
**CHARACTERISTICS CURVES**

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

**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	8.50	9.50	0.335	0.374
C	1.20	1.30	0.047	0.051
D	5.00	5.60	0.197	0.220

**MARKING DIAGRAM**



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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