

## 8A, 50V - 1000V High Efficient Rectifier

### FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High efficiency, Low  $V_F$
- High current capability
- High reliability
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	8	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	150	A
$T_{JMAX}$	150	°C
Package	ITO-220AC	
Configuration	Single die	

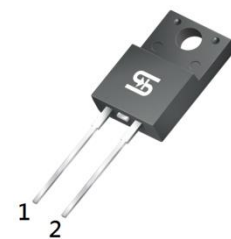
### APPLICATIONS

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

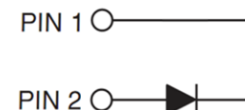


### MECHANICAL DATA

- Case: ITO-220AC
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N-m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)



ITO-220AC



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	HERAF 801G	HERAF 802G	HERAF 803G	HERAF 804G	HERAF 805G	HERAF 806G	HERAF 807G	HERAF 808G	UNIT
Marking code on the device		HERAF 801G	HERAF 802G	HERAF 803G	HERAF 804G	HERAF 805G	HERAF 806G	HERAF 807G	HERAF 808G	
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	$I_F$	8								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	150								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-case resistance	$R_{\theta JC}$	2	°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>	HERAF801G	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V			
	HERAF802G				-	1.3	V		
	HERAF803G					-	1.7	V	
	HERAF804G			-					
	HERAF805G				-				
	HERAF806G					-			
HERAF807G	-								
HERAF808G		-							
Reverse current @ rated $V_R$ <sup>(2)</sup>			$T_J = 25^\circ\text{C}$	$I_R$	-	10	$\mu\text{A}$		
			$T_J = 125^\circ\text{C}$		-	400	$\mu\text{A}$		
Junction capacitance	HERAF801G	1MHz, $V_R = 4.0\text{V}$	$C_J$	80	-	$\mu\text{F}$			
	HERAF802G						-	$\mu\text{F}$	
	HERAF803G								-
	HERAF804G			-	$\mu\text{F}$				
	HERAF805G					-	$\mu\text{F}$		
	HERAF806G							-	$\mu\text{F}$
HERAF807G	-	$\mu\text{F}$							
HERAF808G			-	$\mu\text{F}$					
Reverse recovery time					HERAF801G	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	50
	HERAF802G	-			80				
	HERAF803G		-	80					
	HERAF804G							-	80
	HERAF805G	-			80				
	HERAF806G		-	80					
HERAF807G	-					80	ns		
HERAF808G		-			80			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>
HERAF8xG	ITO-220AC	50 / Tube
HERAF8xGH	ITO-220AC	50 / Tube

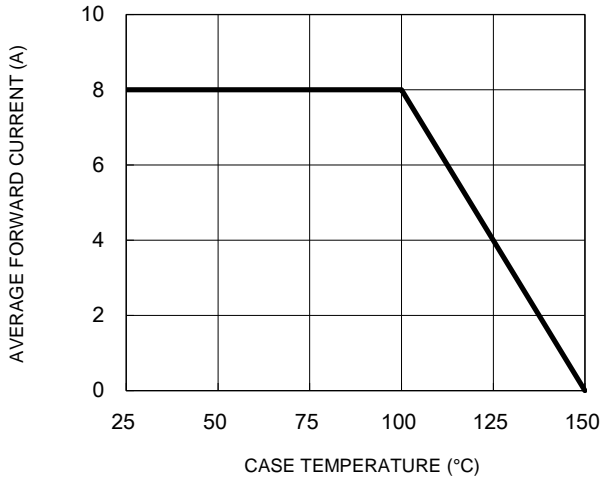
**Notes:**

1. "x" defines voltage from 50V(HERAF801G) to 1000V(HERAF808G)
2. "H" means AEC-Q101 qualified

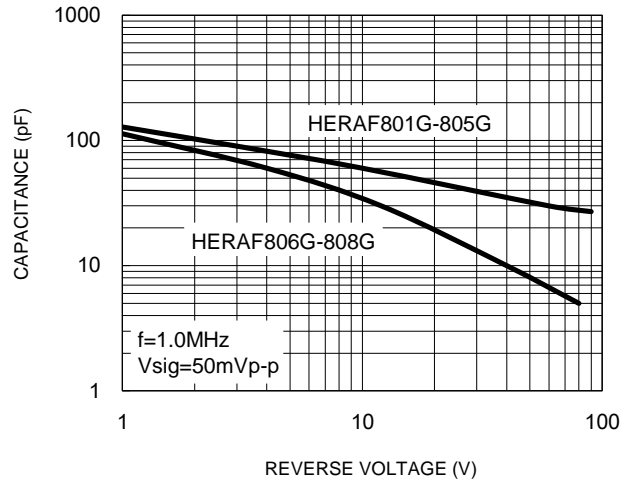
**CHARACTERISTICS CURVES**

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

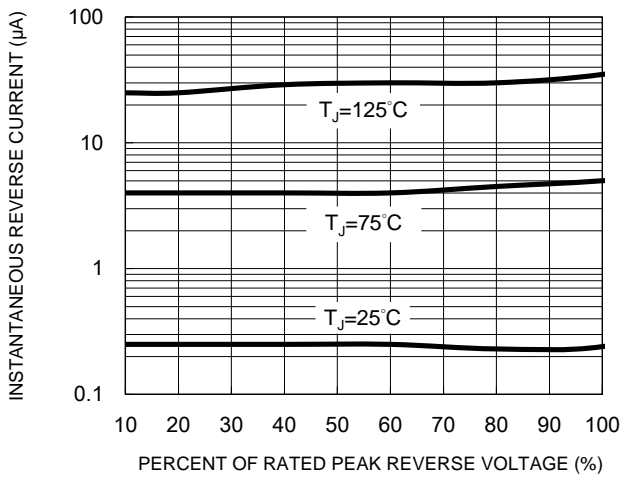
**Fig.1 Forward Current Derating Curve**



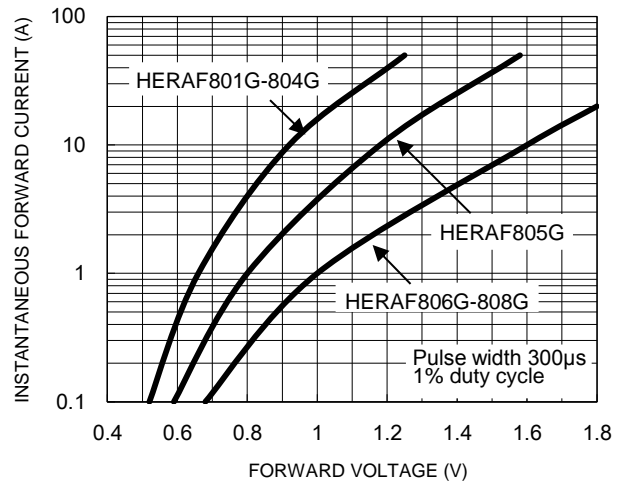
**Fig.2 Typical Junction Capacitance**



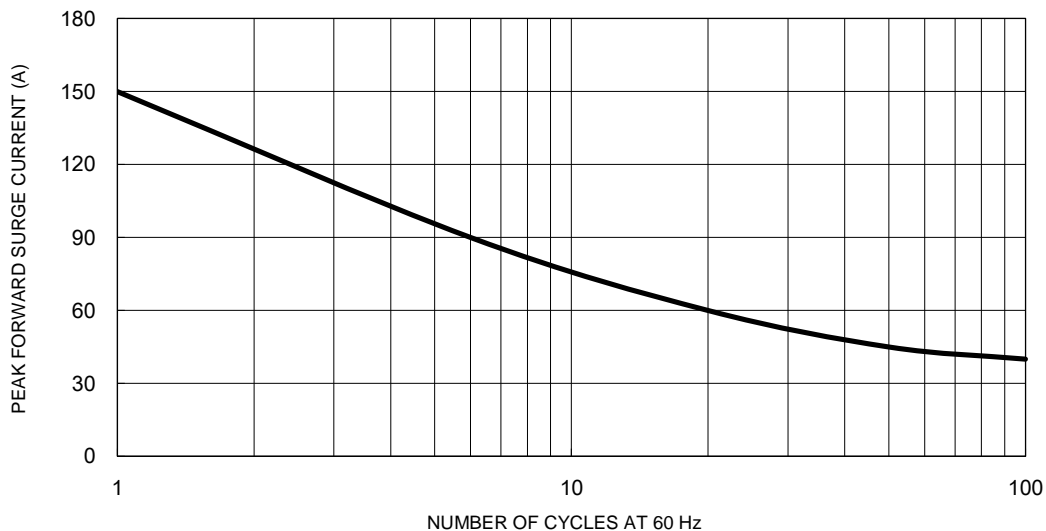
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



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



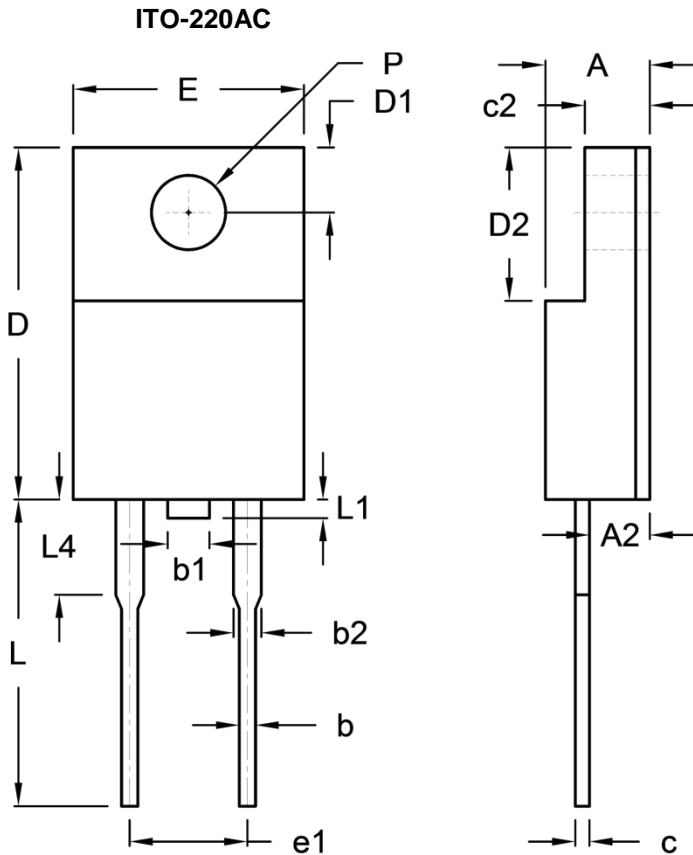
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  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	4.30	4.70	0.169	0.185
A2	2.30	2.90	0.091	0.114
b	0.50	0.90	0.020	0.035
b1	-	1.80	-	0.071
b2	0.95	1.45	0.037	0.057
c	0.46	0.76	0.018	0.030
c2	2.50	3.10	0.098	0.114
D	14.80	15.50	0.583	0.610
D1	2.40	3.20	0.094	0.126
D2	6.30	6.90	0.248	0.272
E	9.60	10.30	0.378	0.406
e1	4.95	5.20	0.195	0.205
L	12.60	13.80	0.496	0.543
L1	0.00	1.60	0.000	0.063
L4	-	4.10	-	0.161
P	3.00	3.40	0.118	0.134

**MARKING DIAGRAM**



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

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