

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	

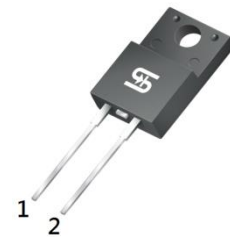
APPLICATIONS

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

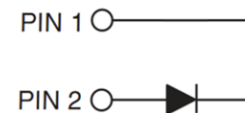


MECHANICAL DATA

- 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

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case resistance	$R_{\theta JC}$	2	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	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 ⁽²⁾		$T_J = 25^\circ\text{C}$	I_R	-	10	μA
		$T_J = 125^\circ\text{C}$		-	400	μA
Junction capacitance	HERAF801G	1MHz, $V_R = 4.0\text{V}$	C_J	80	-	pF
	HERAF802G			-	-	-
	HERAF803G			-	-	-
	HERAF804G			-	-	-
	HERAF805G			-	-	-
	HERAF806G HERAF807G HERAF808G			60	-	pF
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	ns
	HERAF802G			-	-	-
	HERAF803G			-	-	-
	HERAF804G			-	-	-
	HERAF805G			-	-	-
	HERAF806G HERAF807G HERAF808G			-	80	ns

Notes:

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

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
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

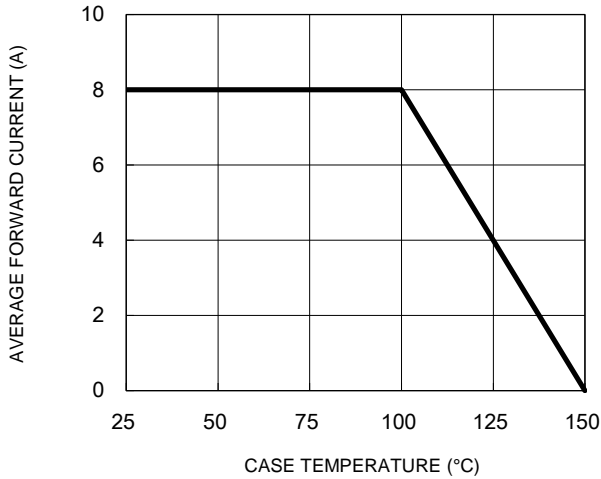


Fig.2 Typical Junction Capacitance

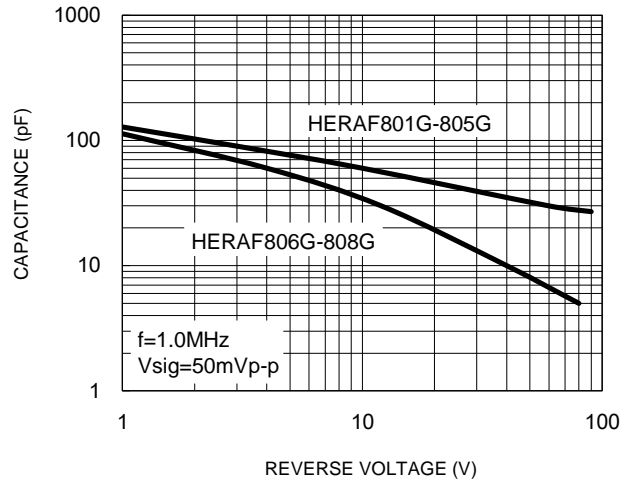


Fig.3 Typical Reverse Characteristics

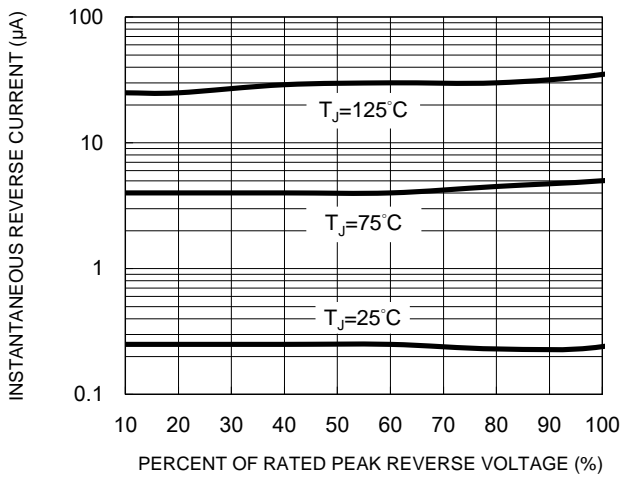


Fig.4 Typical Forward Characteristics

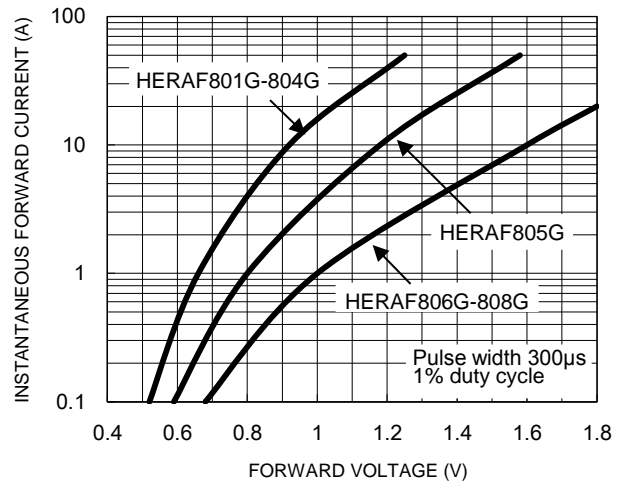
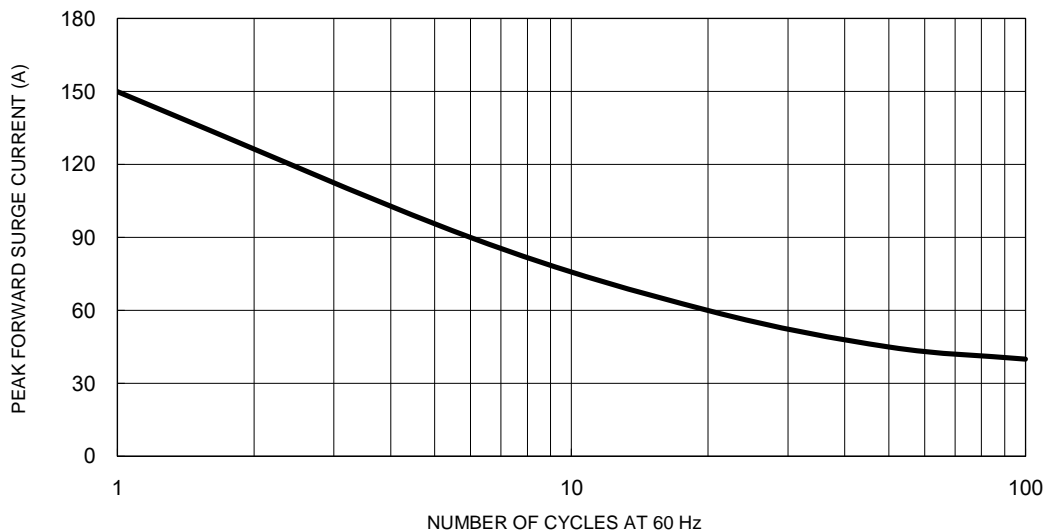


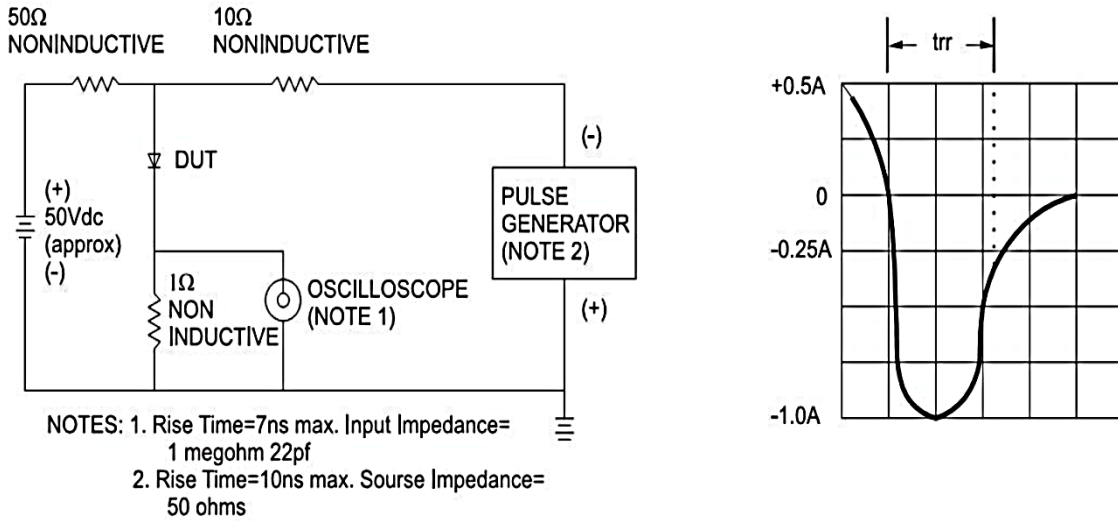
Fig.5 Maximum Non-Repetitive Forward Surge Current



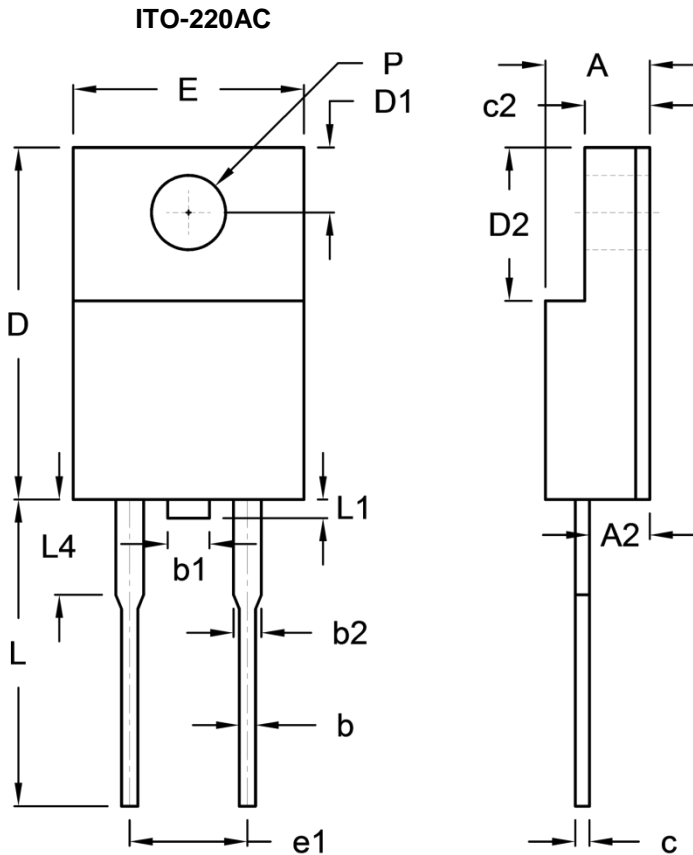
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ 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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