

8A, 50V - 1000V High Efficient Rectifier

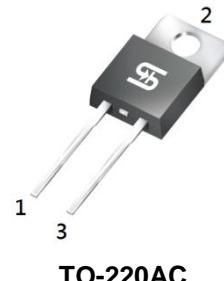
FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High efficiency, Low V_F
- High current capability
- High reliability
- High surge current capability
- 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
$T_{J MAX}$	150	°C
Package	TO-220AC	
Configuration	Single die	

APPLICATIONS

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



MECHANICAL DATA

- Case: TO-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: 1.80g (approximately)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	HERA 801G	HERA 802G	HERA 803G	HERA 804G	HERA 805G	HERA 806G	HERA 807G	HERA 808G	UNIT	
Marking code on the device		HERA 801G	HERA 802G	HERA 803G	HERA 804G	HERA 805G	HERA 806G	HERA 807G	HERA 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_{EJC}	2	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.0	V
			-	1.3	V
			-	1.7	V
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	HERA801G HERA802G HERA803G HERA804G HERA805G	C_J	65	-	pF
			55	-	pF
	HERA806G HERA807G HERA808G	t_{rr}	-	50	ns
			-	80	ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
HERA8xG	TO-220AC	50 / Tube
HERA8xGH	TO-220AC	50 / Tube

Notes:

1. "x" defines voltage from 50V(HERA801G) to 1000V(HERA808G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

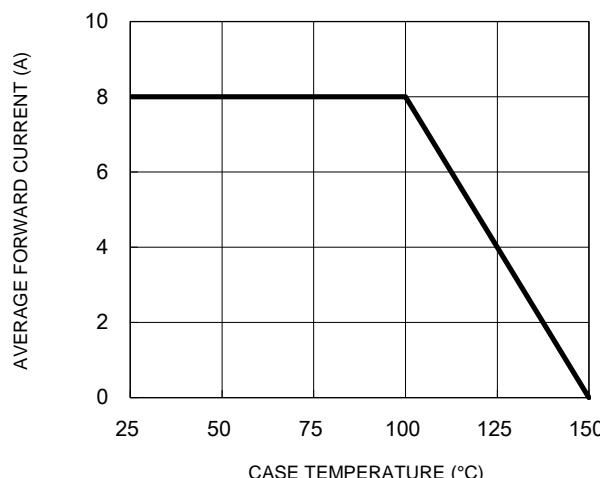


Fig.2 Typical Junction Capacitance

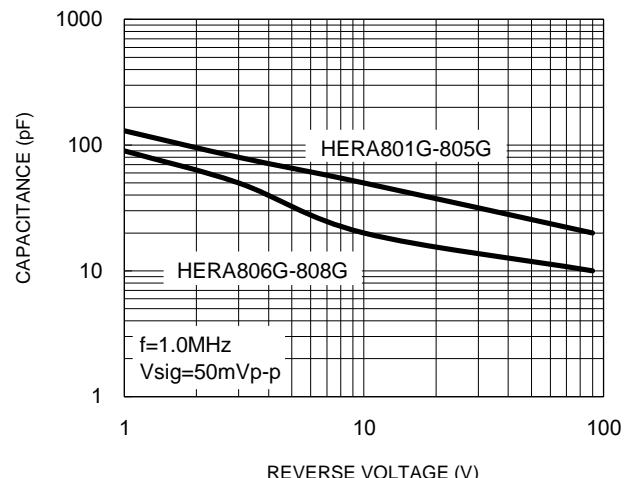


Fig.3 Typical Reverse Characteristics

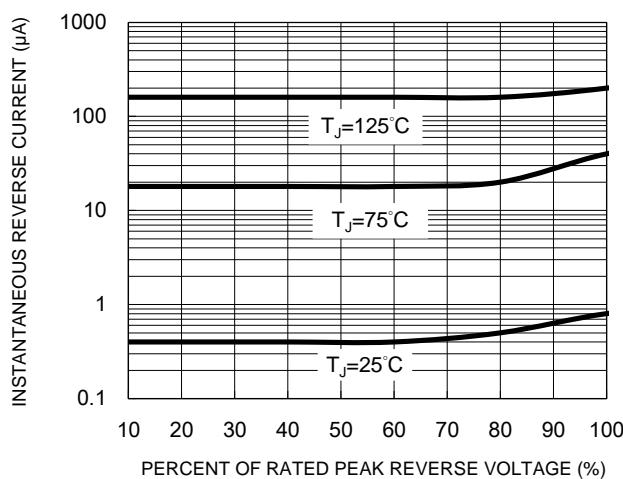


Fig.4 Typical Forward Characteristics

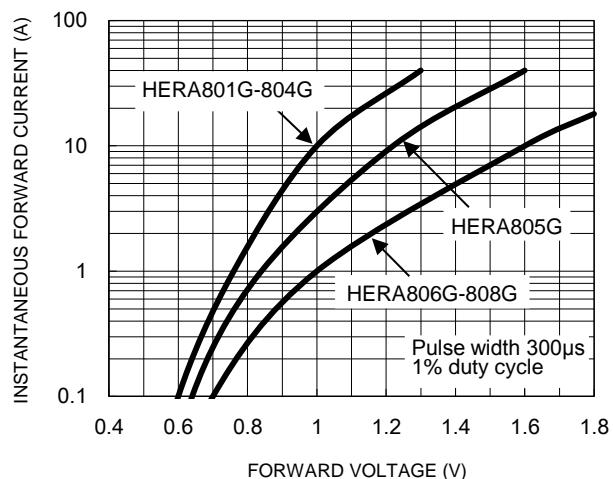
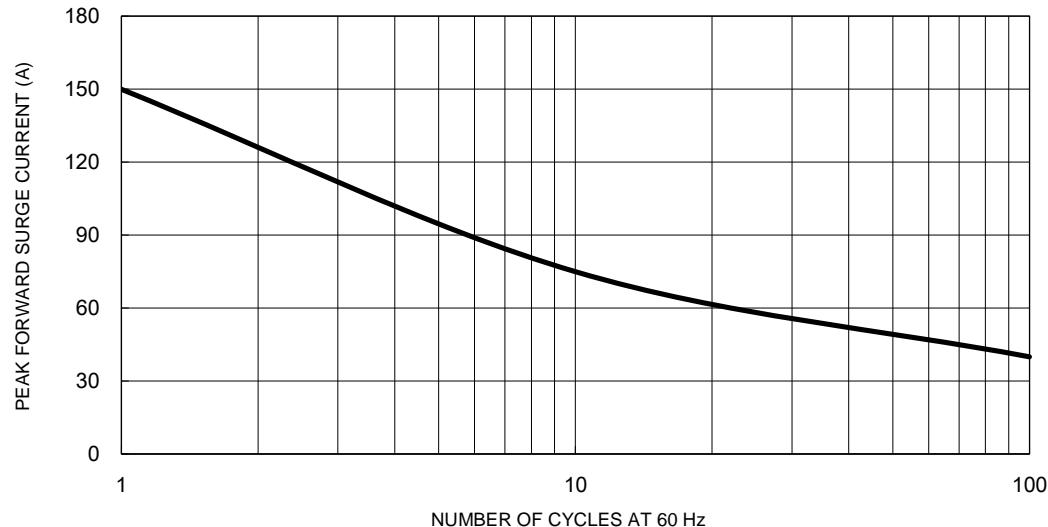
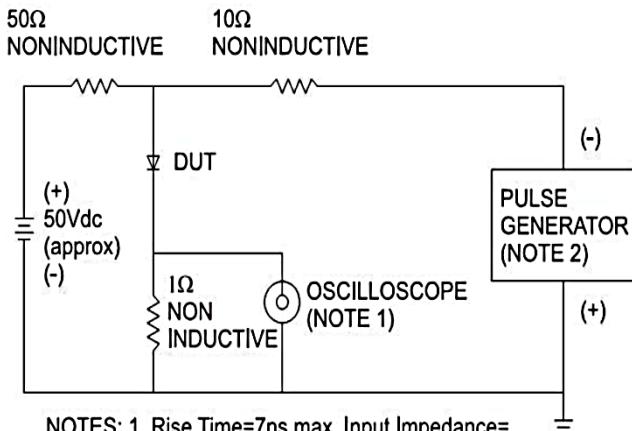


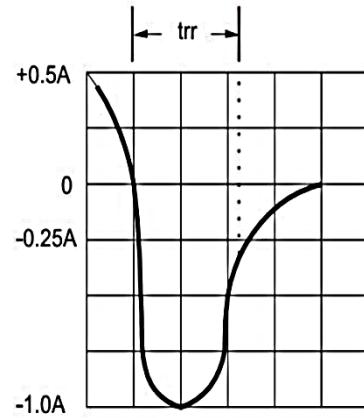
Fig.5 Maximum Non-Repetitive Forward Surge Current

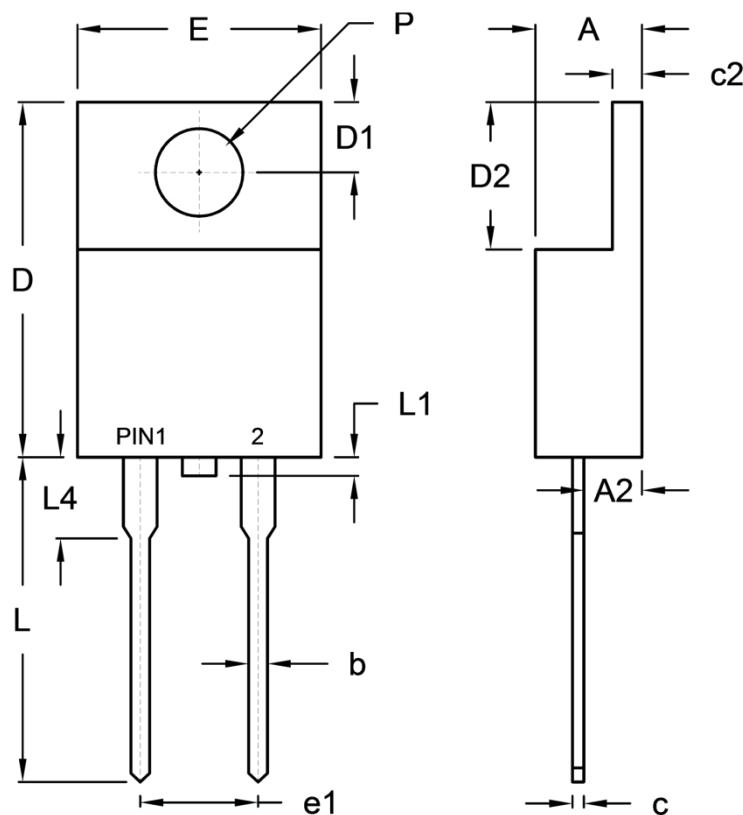


CHARACTERISTICS CURVES
 $(T_A = 25^\circ\text{C}$ unless otherwise noted)

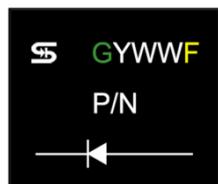
Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram


NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf
 2. Rise Time=10ns max. Source Impedance= 50 ohms



PACKAGE OUTLINE DIMENSIONS
TO-220AC


DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.42	4.76	0.174	0.187
A2	2.20	2.80	0.087	0.110
b	0.68	0.94	0.027	0.037
c	0.35	0.64	0.014	0.025
c2	1.14	1.40	0.045	0.055
D	14.60	16.00	0.575	0.630
D1	2.62	3.44	0.103	0.135
D2	5.84	6.86	0.230	0.270
E	-	10.50	-	0.413
e1	4.95	5.20	0.195	0.205
L	13.19	14.79	0.519	0.582
L1	0.00	1.60	0.000	0.063
L4	2.80	4.20	0.110	0.165
P	3.54	4.00	0.139	0.157

MARKING DIAGRAM


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

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