

## 10A, 800V - 1000V High Efficient Rectifier

### FEATURES

- AEC-Q101 qualified available
- High efficiency, low  $V_F$
- High current capability
- High surge current capability
- Low power loss
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

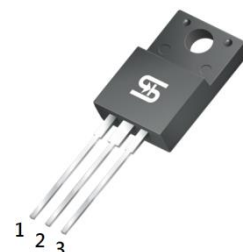
### APPLICATIONS

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

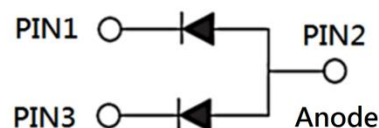
### MECHANICAL DATA

- Case: ITO-220AB
- 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: 1.82g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	10	A
$V_{RRM}$	800 - 1000	V
$I_{FSM}$	125	A
$T_{J\ MAX}$	150	°C
Package	ITO-220AB	
Configuration	Dual dies	



ITO-220AB



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	HERF1007GA	HERF1008GA	UNIT
Marking code on the device		HERF1007GA	HERF1008GA	
Repetitive peak reverse voltage	$V_{RRM}$	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	560	700	V
Forward current	$I_F$	10		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

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\theta JC}$	3	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F = 5\text{A}$ , $T_J = 25^\circ\text{C}$	$V_F$	-	1.7	V
Reverse current @ rated $V_R$ per diode <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 per diode	1MHz, $V_R = 4.0\text{V}$	$C_J$	40	-	pF
Reverse recovery time	$I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	80	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)(2)</sup>	PACKAGE	PACKING
HERF10xGA	ITO-220AB	50 / Tube
HERF10xGAH	ITO-220AB	50 / Tube

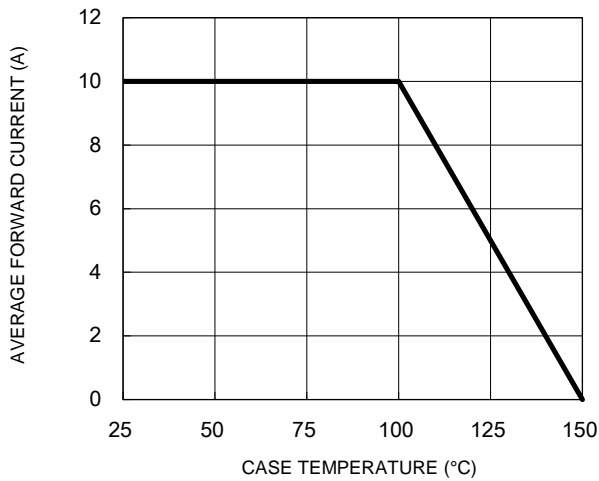
**Notes:**

1. "x" defines voltage from 800V(HERF1007GA) to 1000V(HERF1008GA)
2. "H" means AEC-Q101 qualified

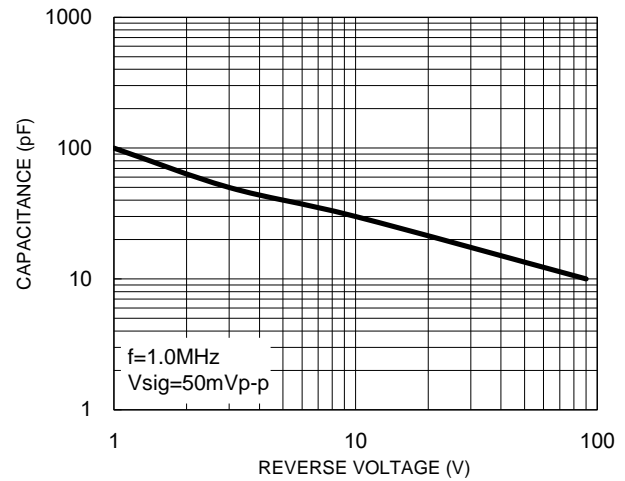
## CHARACTERISTICS CURVES

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

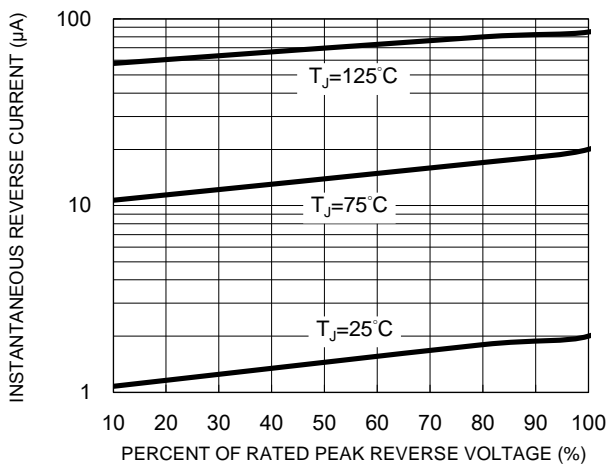
**Fig.1 Forward Current Derating Curve**



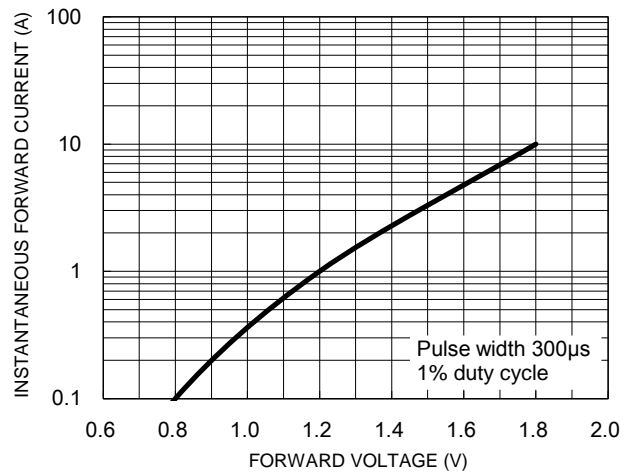
**Fig.2 Typical Junction Capacitance**



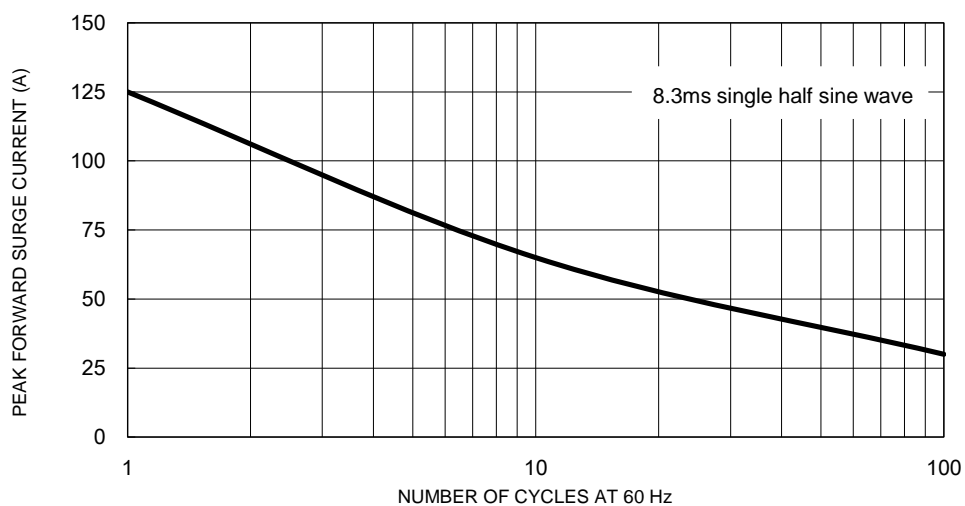
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



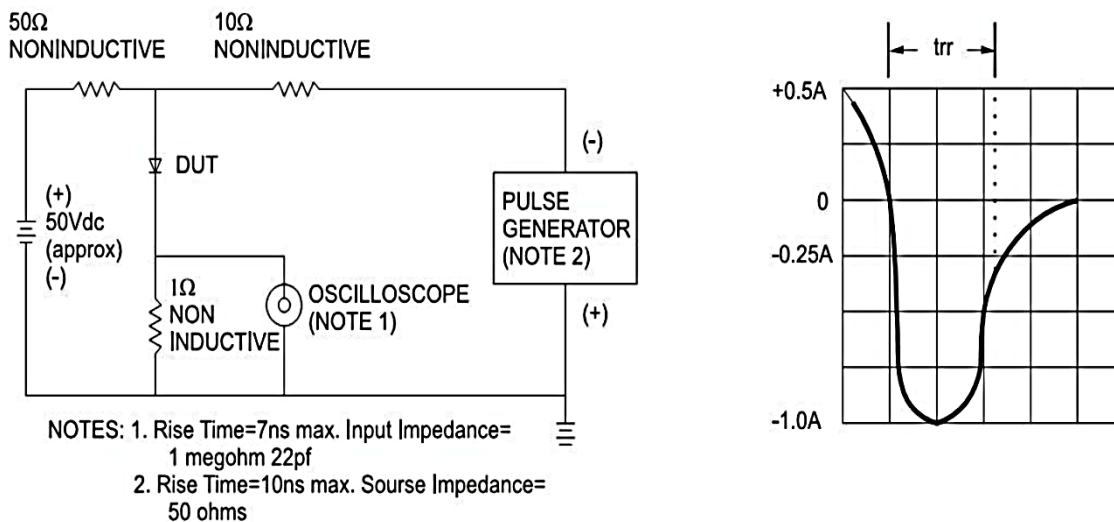
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



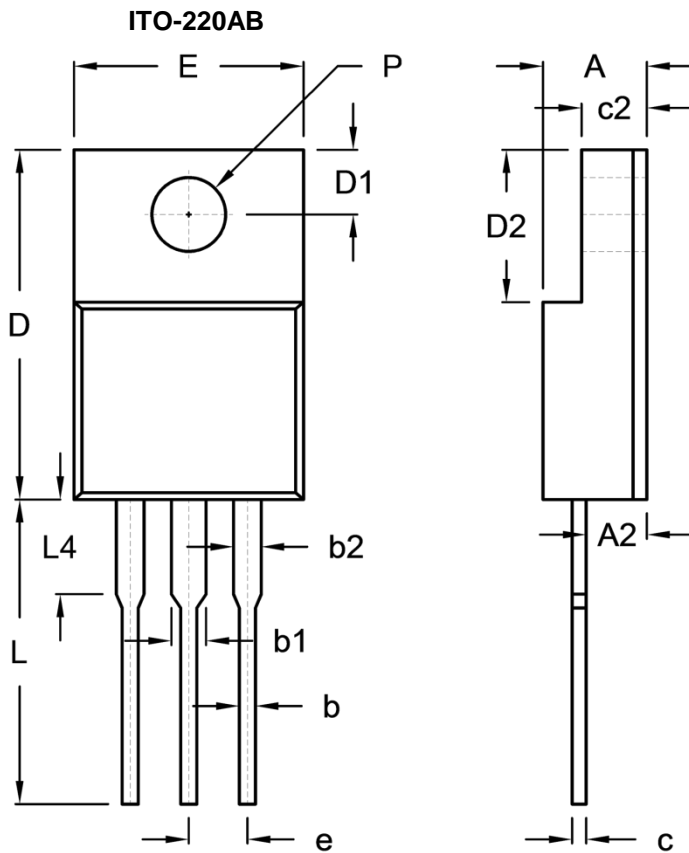
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  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	2.96	0.091	0.117
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	3.16	0.098	0.124
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
e	2.41	2.67	0.095	0.105
L	12.60	13.80	0.496	0.543
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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