16A, 50V - 1000V High Efficient Rectifier

FEATURES

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

APPLICATIONS

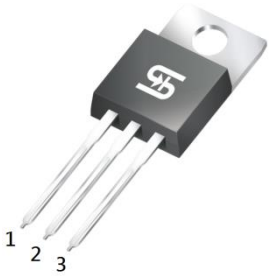
- DC to DC converters
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

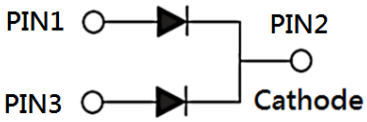
- Case: TO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.82g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	16	A
V_{RRM}	50 - 1000	V
I_{FSM}	125	A
$T_{J\ MAX}$	150	°C
Package	TO-220AB	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-220AB



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	HER 1601G	HER 1602G	HER 1603G	HER 1604G	HER 1605G	HER 1606G	HER 1607G	HER 1608G	UNIT
Marking code on the device		HER 1601G	HER 1602G	HER 1603G	HER 1604G	HER 1605G	HER 1606G	HER 1607G	HER 1608G	
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	16								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	$R_{\Theta JC}$	1.5	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	HER1601G HER1602G HER1603G HER1604G	I_F = 8A, T_J = 25°C	V_F	-	1.0	V
	HER1605G			-	1.3	V
	HER1606G HER1607G HER1608G			-	1.7	V
Reverse current @ rated V_R per diode[2]		T_J = 25°C	I_R	-	10	μA
		T_J = 125°C		-	400	μA
Junction capacitance per diode	HER1601G HER1602G HER1603G HER1604G HER1605G	1MHz, V_R = 4.0V	C_J	80	-	pF
	HER1606G HER1607G HER1608G			50	-	pF
Reverse recovery time	HER1601G HER1602G HER1603G HER1604G HER1605G	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	50	ns
	HER1606G HER1607G HER1608G			-	80	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1][2]	PACKAGE	PACKING
HER16xG	TO-220AB	50 / Tube
HER16xGH	TO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 50V(HER1601G) to 1000V(HER1608G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

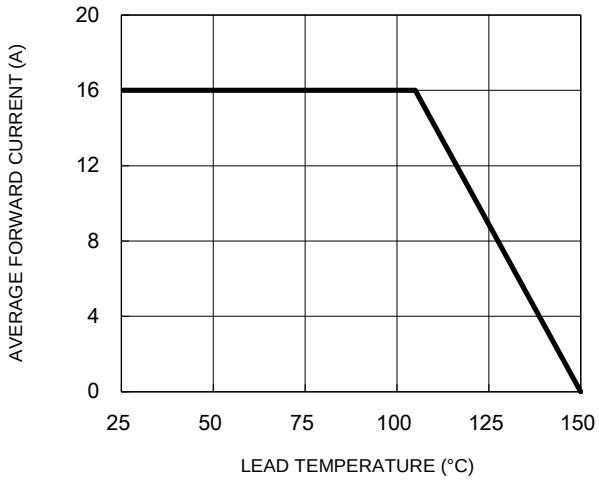


Fig.2 Typical Junction Capacitance

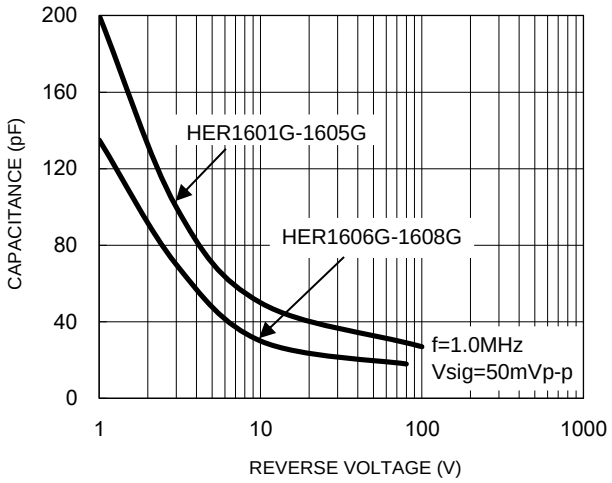


Fig.3 Typical Reverse Characteristics

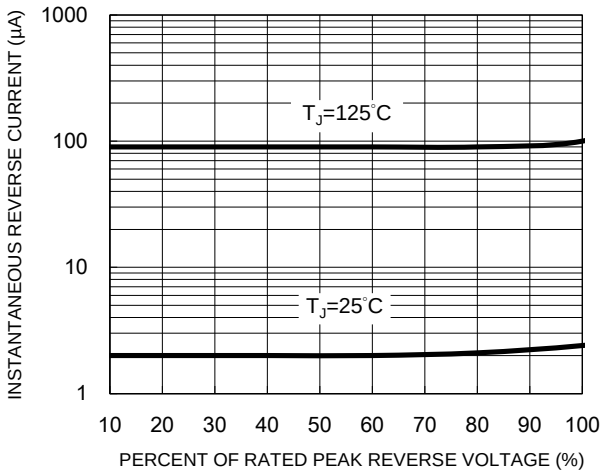


Fig.4 Typical Forward Characteristics

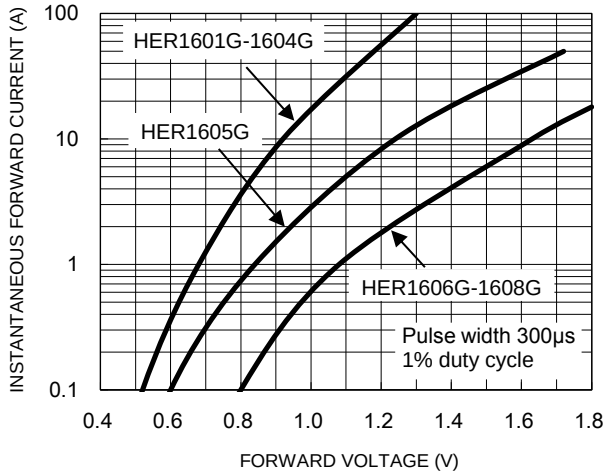
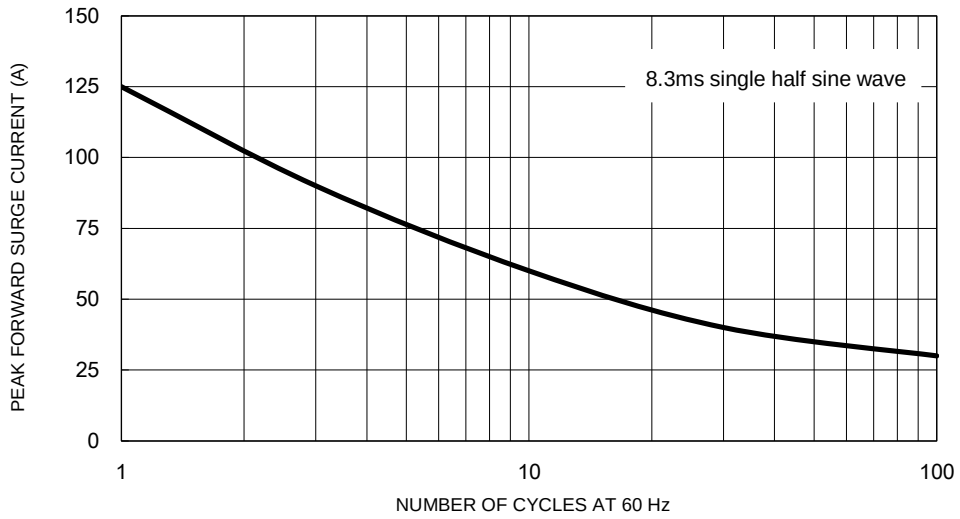


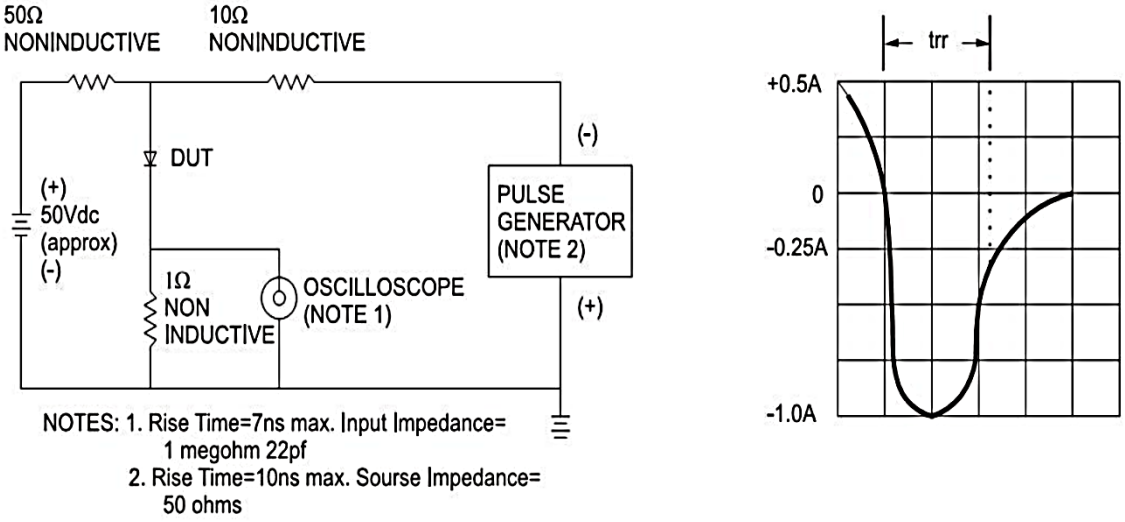
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

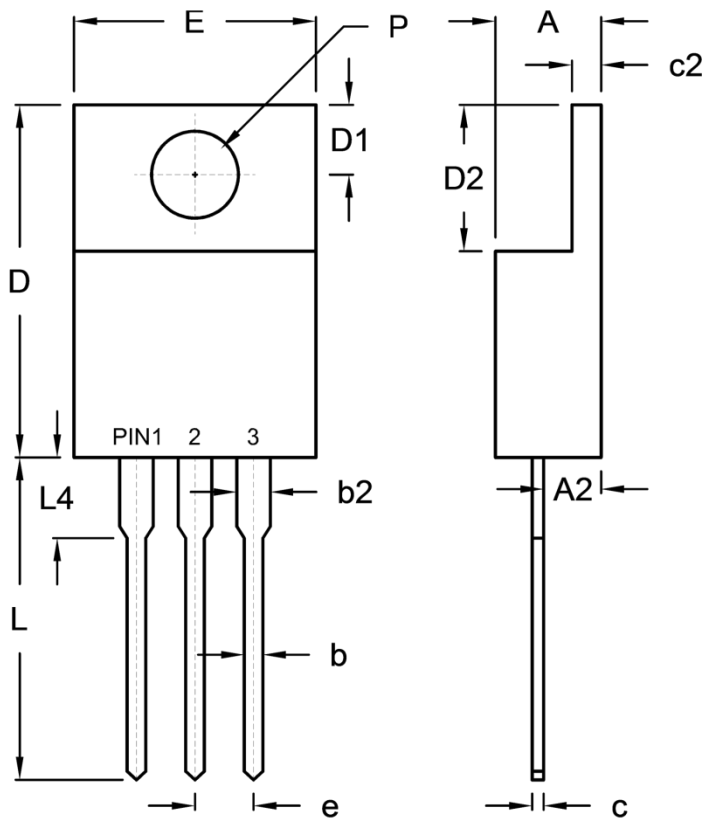
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS

TO-220AB



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
b2	1.14	1.77	0.045	0.070
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
e	2.41	2.67	0.095	0.105
L	13.19	14.79	0.519	0.582
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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