

6A, 50V - 600V High Efficient Rectifier

FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High current capability, Low V_F
- High reliability
- High surge current capability
- Low power loss
- 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: R-6
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 1.65g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	6	A
V_{RRM}	50 - 600	V
I_{FSM}	150	A
T_{JMAX}	150	°C
Package	R-6	
Configuration	Single die	



R-6



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	HER 601G	HER 602G	HER 603G	HER 604G	HER 605G	HER 606G	UNIT
Marking code on the device		HER 601G	HER 602G	HER 603G	HER 604G	HER 605G	HER 606G	
Repetitive peak reverse voltage	V_{RRM}	50	100	200	300	400	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	210	280	420	V
Forward current	I_F	6						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-ambient thermal resistance	$R_{\theta JA}$	37	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	HER601G	$I_F = 6\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.0	V
	HER602G					
	HER603G					
	HER604G					
	HER605G					
	HER606G					
Reverse current @ rated V_R ⁽²⁾		$T_J = 25^\circ\text{C}$	I_R	-	10	μA
		$T_J = 125^\circ\text{C}$				
Junction capacitance	HER601G	1MHz, $V_R = 4.0\text{V}$	C_J	80	-	pF
	HER602G					
	HER603G					
	HER604G					
	HER605G					
	HER606G			65		pF
Reverse recovery time	HER601G	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	t_{rr}	-	50	ns
	HER602G					
	HER603G					
	HER604G					
	HER605G					
	HER606G				75	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
HER6xG	R-6	1,000 / Tape & Reel
HER6xG A0G	R-6	700 / Ammo box
HER6xGH	R-6	1,000 / Tape & Reel
HER6xGHA0G	R-6	700 / Ammo box

Notes:

1. "x" defines voltage from 50V (HER601G) to 600V (HER606G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

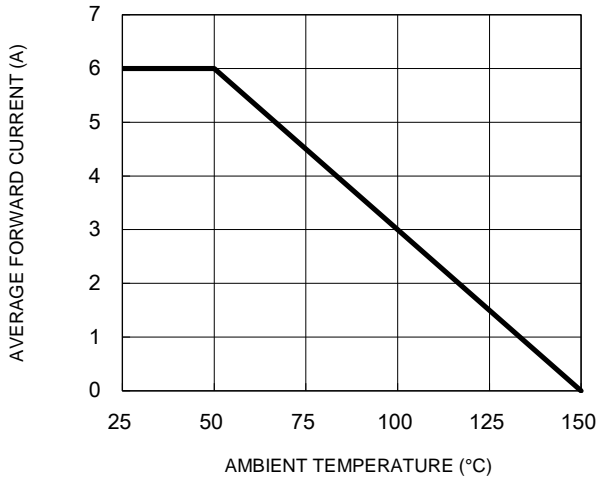


Fig.2 Typical Junction Capacitance

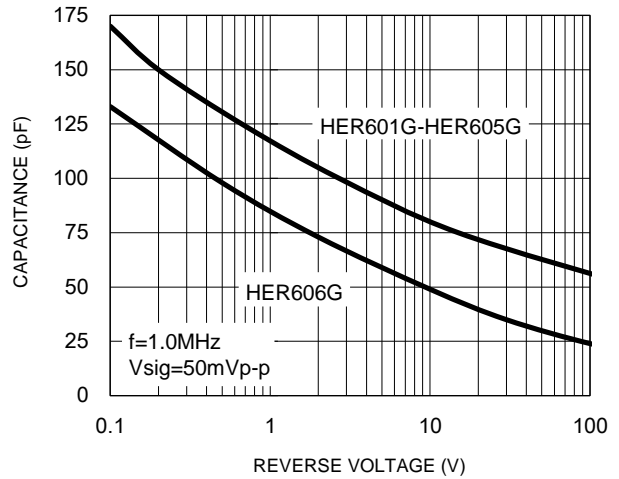


Fig.3 Typical Reverse Characteristics

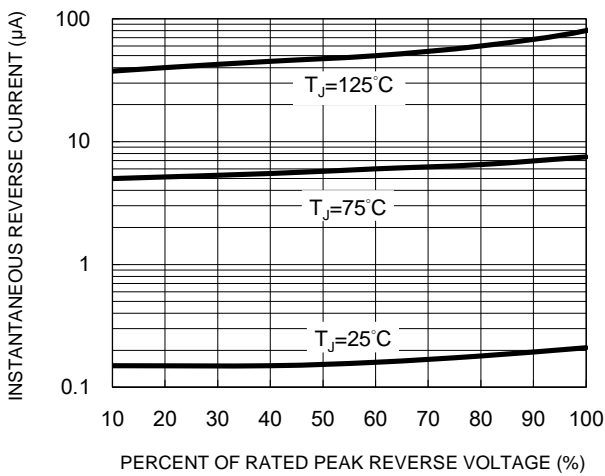


Fig.4 Typical Forward Characteristics

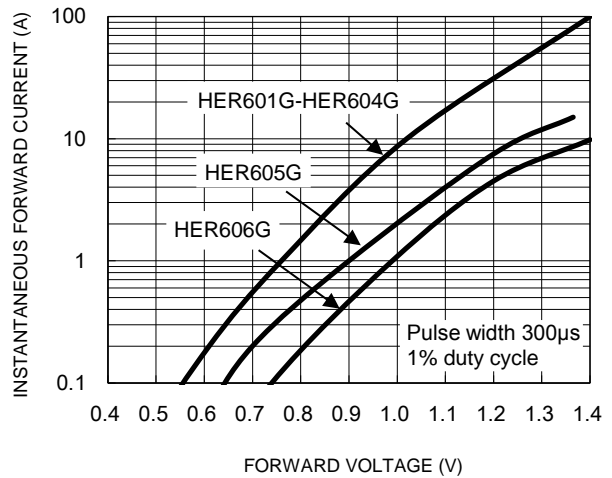
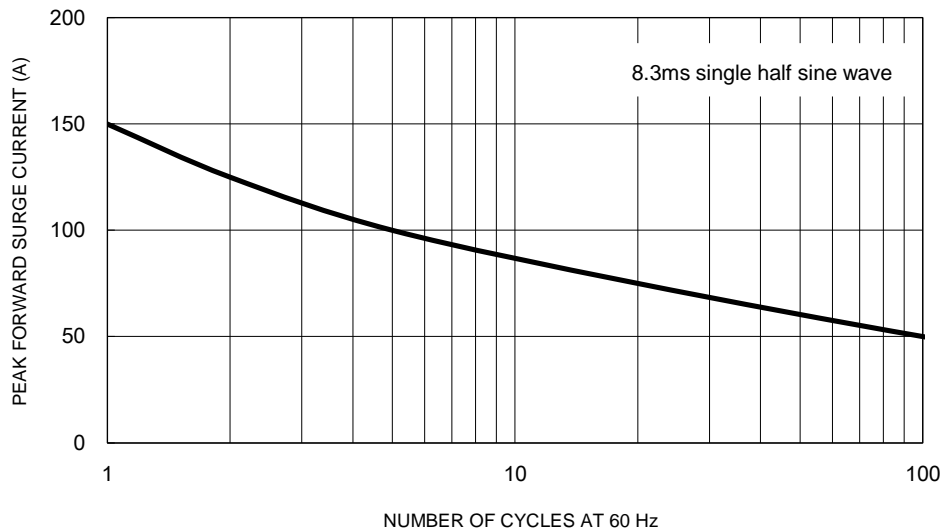


Fig.5 Maximum Non-Repetitive Forward Surge Current



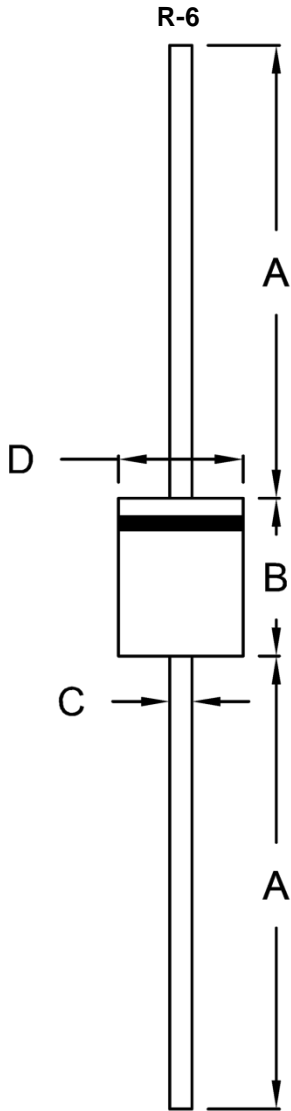
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ 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	25.40	-	1.000	-
B	8.60	9.10	0.339	0.358
C	1.20	1.30	0.047	0.051
D	6.80	7.20	0.268	0.283

MARKING DIAGRAM



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

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