

## 3A, 200V - 600V High Efficient Rectifier

### FEATURES

- AEC-Q101 qualified available
- High current capability, Low  $V_F$
- Negligible leakage current
- High reliability
- High surge current capability
- Low power loss, high efficiency
- 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: DO-201AD
- 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: 1.10g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	200 - 600	V
$I_{FSM}$	100, 125	A
$T_{JMAX}$	150	°C
Package	DO-201AD	
Configuration	Single die	


**DO-201AD**


ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	HER3L03G	HER3L05G	HER3L06G	UNIT
Marking code on the device		HER3L03G	HER3L05G	HER3L06G	
Repetitive peak reverse voltage	$V_{RRM}$	200	400	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	140	280	420	V
Forward current	$I_F$	3			A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	125		100	A
Junction temperature	$T_J$	-55 to +150			°C
Storage temperature	$T_{STG}$	-55 to +150			°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	19	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	44	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	20	°C/W

**Thermal Performance Note:** Units mounted on PCB (16mm x 16mm Cu pad test board)

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	HER3L03G	$I_F = 1.5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.83	1.00	V
	HER3L05G			0.85	1.02	V
	HER3L06G			0.84	1.05	V
	HER3L03G	$I_F = 3.0\text{A}, T_J = 25^\circ\text{C}$		0.89	1.30	V
	HER3L05G			0.91	1.32	V
	HER3L06G			0.90	1.70	V
	HER3L03G	$I_F = 1.5\text{A}, T_J = 125^\circ\text{C}$		0.67	0.83	V
	HER3L05G			0.69	0.85	V
	HER3L06G			0.69	0.80	V
	HER3L03G	$I_F = 3.0\text{A}, T_J = 125^\circ\text{C}$		0.74	0.90	V
	HER3L05G			0.76	0.92	V
	HER3L06G			0.76	0.88	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	HER3L03G	$T_J = 25^\circ\text{C}$	$I_R$	-	3	$\mu\text{A}$
	HER3L05G			-	5	$\mu\text{A}$
	HER3L06G			-	10	$\mu\text{A}$
	HER3L03G	$T_J = 150^\circ\text{C}$		-	100	$\mu\text{A}$
	HER3L05G			-	200	$\mu\text{A}$
	HER3L06G			-	300	$\mu\text{A}$
Junction capacitance	HER3L03G	1MHz, $V_R = 4.0\text{V}$	$C_J$	54	-	pF
	HER3L05G			49	-	pF
	HER3L06G					
Reverse recovery time	HER3L03G	$I_F = 0.5\text{A}, I_R = 1.0\text{A},$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	50	ns
	HER3L05G			-	75	ns
	HER3L06G					

**Notes:**

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

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE<sup>(1)(2)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
HER3LxG	DO-201AD	1,250 / Tape & Reel
HER3LxG A0G	DO-201AD	500 / Ammo box
HER3LxGH	DO-201AD	1,250 / Tape & Reel
HER3LxGHA0G	DO-201AD	500 / Ammo box

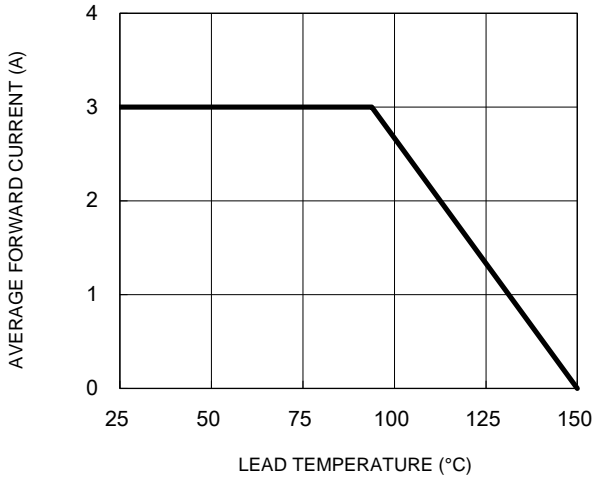
**Notes:**

1. "x" defines voltage from 200V (HER3L03G) to 600V (HER3L06G)
2. "H" means AEC-Q101 qualified

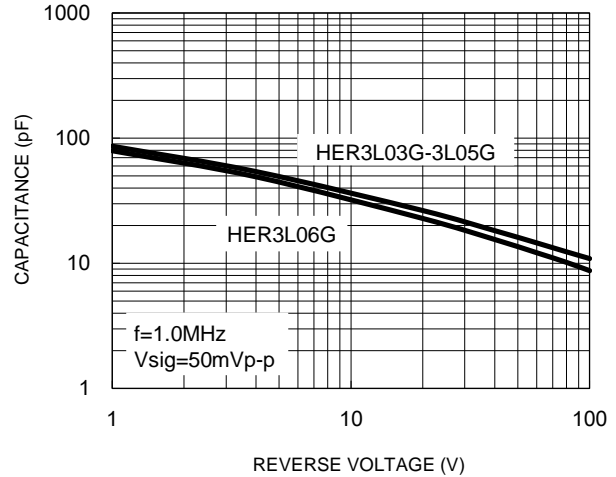
**CHARACTERISTICS CURVES**

(TA = 25°C unless otherwise noted)

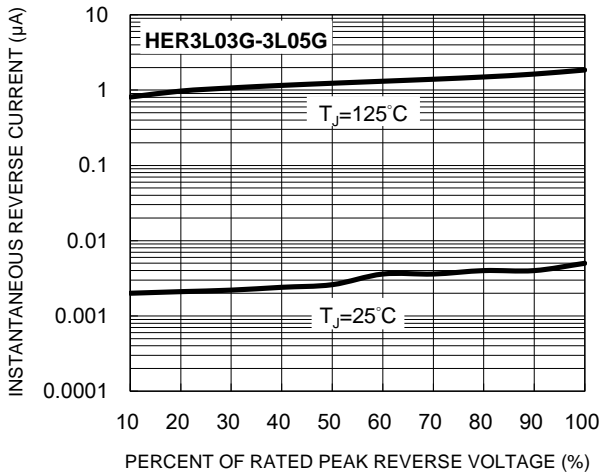
**Fig.1 Forward Current Derating Curve**



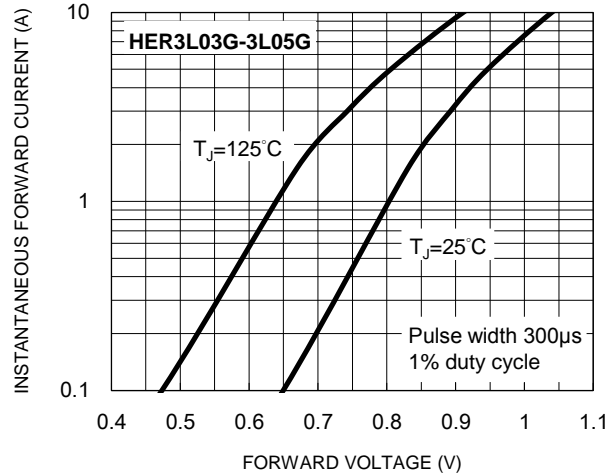
**Fig.2 Typical Junction Capacitance**



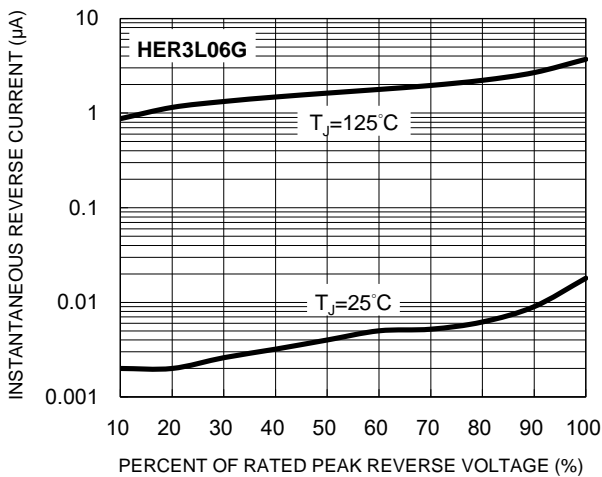
**Fig.3 Typical Reverse Characteristics**



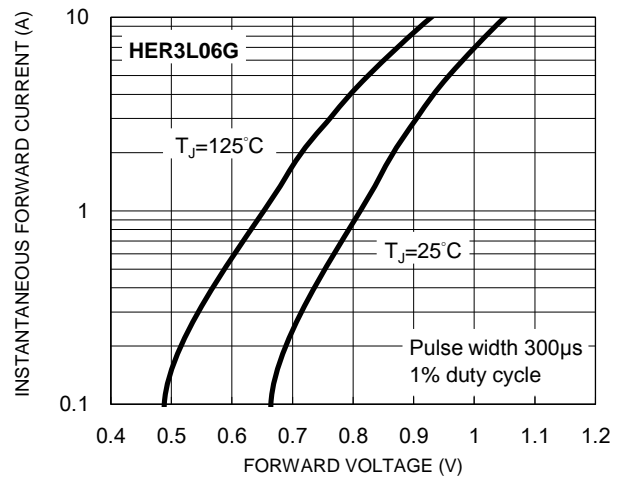
**Fig.4 Typical Forward Characteristics**



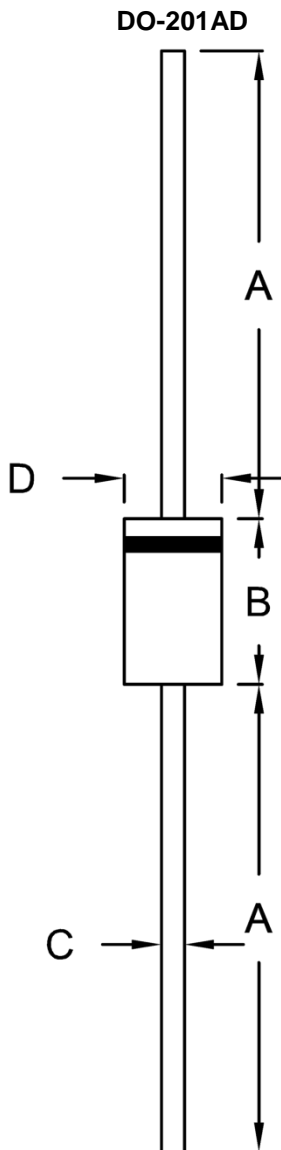
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	8.50	9.50	0.335	0.374
C	1.20	1.30	0.047	0.051
D	5.00	5.60	0.197	0.220

**MARKING DIAGRAM**



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