

3A, 200V - 600V Glass Passivated High Efficient Rectifier

FEATURES

- Glass passivated chip junction
- High current capability, Low V_F
- Negligible leakage current
- High reliability
- High surge current capability
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

MECHANICAL DATA

- Case: DO-201AD
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Part no. with suffix "H" means AEC-Q101 qualified
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.1 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	3	A
V_{RRM}	200 - 600	V
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	$I_{F(AV)}$	3			A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	125		100	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-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 recommended PCB (16mm x 16mm Cu pad test board)

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	HER3L03G	$I_F=1.5\text{A}, T_J=25^\circ\text{C}$	V_F	0.83	1.00	V
		$I_F=3\text{A}, T_J=25^\circ\text{C}$		0.89	1.30	V
		$I_F=1.5\text{A}, T_J=125^\circ\text{C}$		0.67	0.83	V
		$I_F=3\text{A}, T_J=125^\circ\text{C}$		0.74	0.90	V
	HER3L05G	$I_F=1.5\text{A}, T_J=25^\circ\text{C}$		0.85	1.02	V
		$I_F=3\text{A}, T_J=25^\circ\text{C}$		0.91	1.32	V
		$I_F=1.5\text{A}, T_J=125^\circ\text{C}$		0.69	0.85	V
		$I_F=3\text{A}, T_J=125^\circ\text{C}$		0.76	0.92	V
	HER3L06G	$I_F=1.5\text{A}, T_J=25^\circ\text{C}$		0.84	1.05	V
		$I_F=3\text{A}, T_J=25^\circ\text{C}$		0.90	1.7	V
		$I_F=1.5\text{A}, T_J=125^\circ\text{C}$		0.69	0.80	V
		$I_F=3\text{A}, T_J=125^\circ\text{C}$		0.76	0.88	V
Reverse current @ rated V_R per diode ⁽²⁾	HER3L03G	$T_J=25^\circ\text{C}$	I_R	-	3	μA
		$T_J=150^\circ\text{C}$		-	100	μA
	HER3L05G	$T_J=25^\circ\text{C}$		-	5	μA
		$T_J=150^\circ\text{C}$		-	200	μA
	HER3L06G	$T_J=25^\circ\text{C}$		-	10	μA
		$T_J=150^\circ\text{C}$		-	300	μA
Junction capacitance	HER3L03G	1 MHz, $V_R=4\text{V}$	C_J	54	-	pF
	HER3L05G			-	pF	
	HER3L06G			49	-	pF
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			-		ns
	HER3L06G			-	75	ns

Notes:

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

ORDERING INFORMATION

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
HER3L0xG (Note 1, 2)	H	A0	G	DO-201AD	500 / Ammo box
		R0		DO-201AD	1,250 / 13" Paper reel
		B0		DO-201AD	500 / Bulk packing
		X0		DO-201AD	Forming

Notes:

- "x" defines voltage from 200V (HER3L03G) to 600V (HER3L06G)
- Whole series with green compound (halogen-free)

EXAMPLE P/N

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
HER3L03GHA0G	HER3L03G	H	A0	G	AEC-Q101 qualified Green compound

CHARACTERISTICS CURVES

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

Fig1. Forward Current Derating Curve

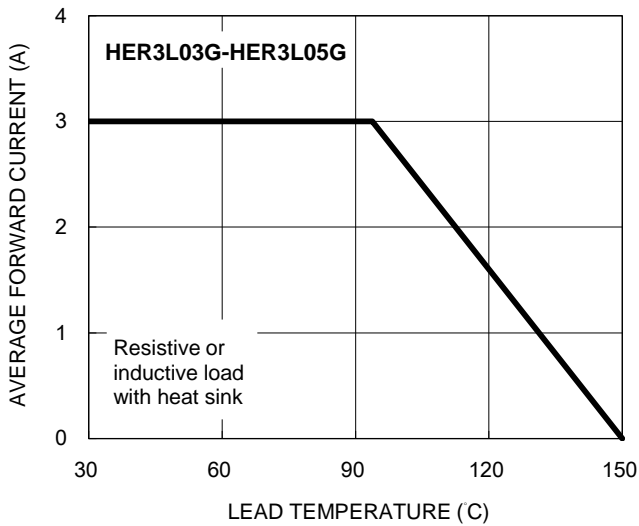


Fig2. Typical Junction Capacitance

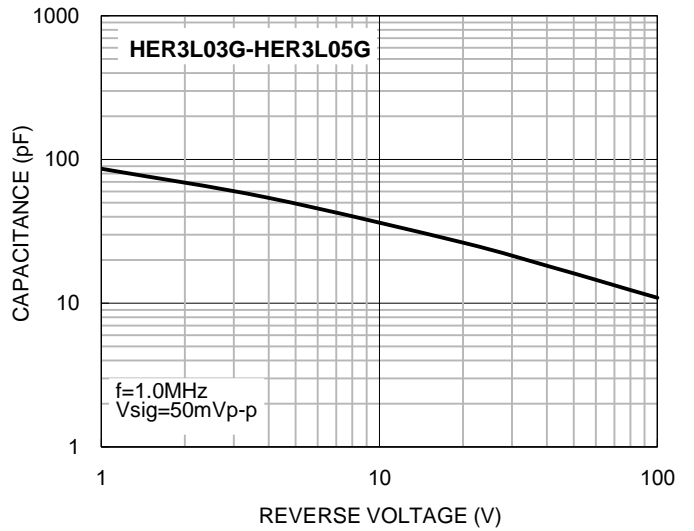


Fig3. Typical Reverse Characteristics

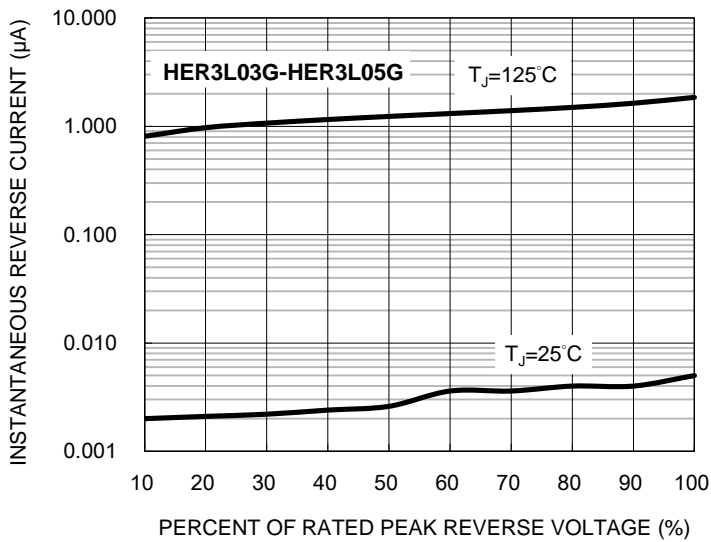
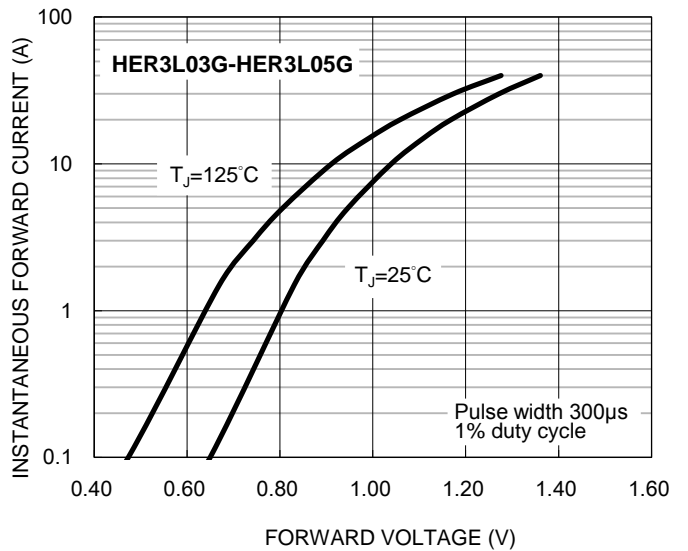


Fig4. Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig1. Forward Current Derating Curve

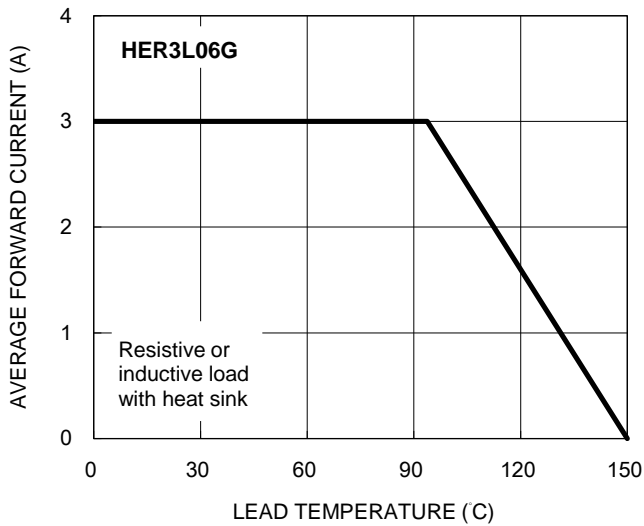


Fig2. Typical Junction Capacitance

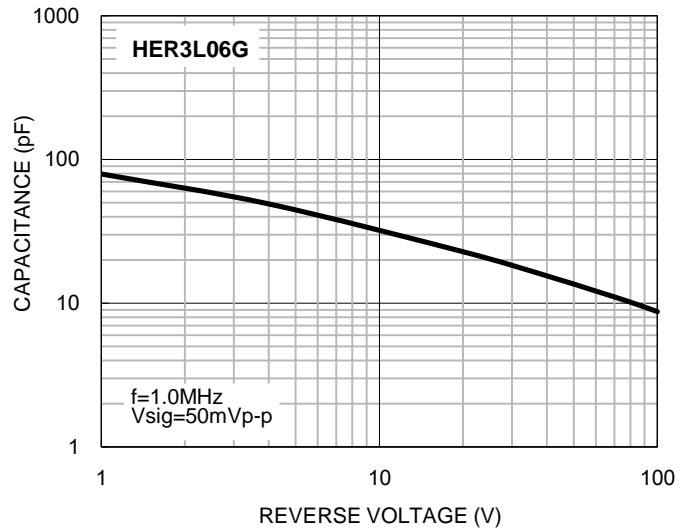


Fig3. Typical Reverse Characteristics

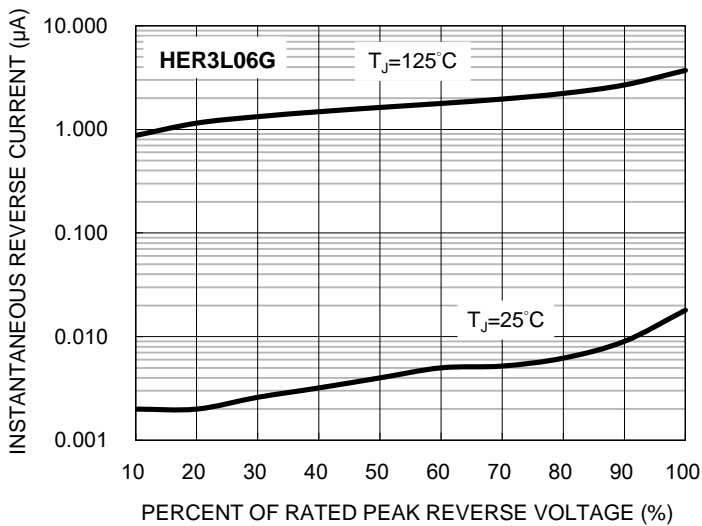
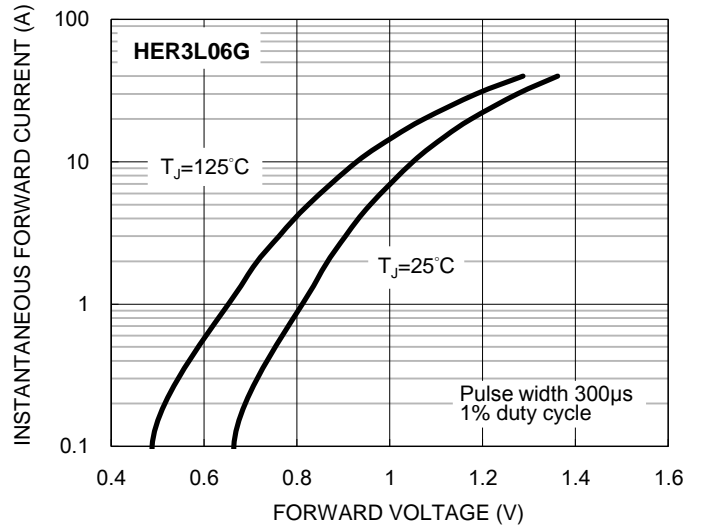
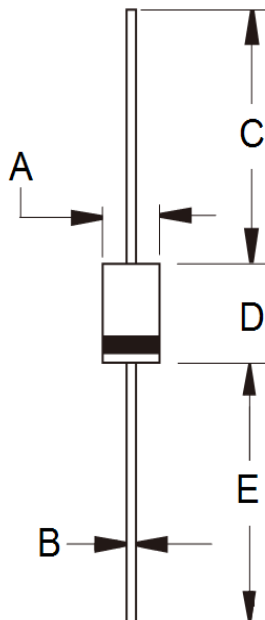


Fig4. Typical Forward Characteristics



PACKAGE OUTLINE DIMENSIONS

DO-201AD



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.00	5.60	0.197	0.220
B	1.20	1.30	0.048	0.052
C	25.40	-	1.000	-
D	8.50	9.50	0.335	0.375
E	25.40	-	1.000	-

MARKING DIAGRAM



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

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