

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

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

Thermal Performance Note: Units mounted on 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 ⁽¹⁾	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 ⁽²⁾	HER3L03G	$T_J = 25^{\circ}\text{C}$	I_R	-	3	μA
	HER3L05G			-	5	μA
	HER3L06G			-	10	μA
	HER3L03G	$T_J = 150^{\circ}\text{C}$		-	100	μA
	HER3L05G			-	200	μA
	HER3L06G			-	300	μA
Junction capacitance	HER3L03G	1MHz, $V_R = 4.0\text{V}$	C_J	54	-	pF
	HER3L05G					
	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					
	HER3L06G			-	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
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

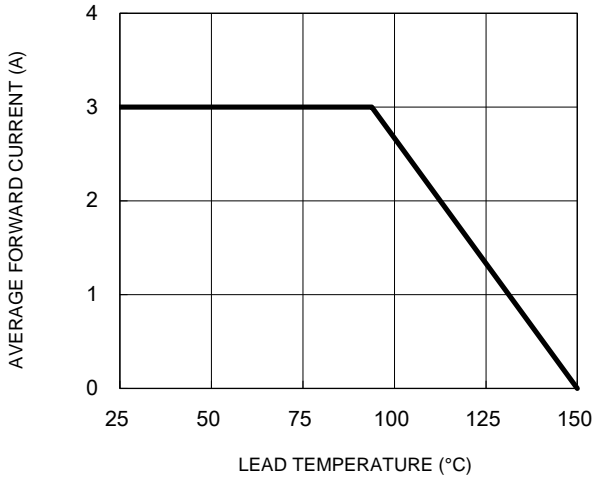


Fig.2 Typical Junction Capacitance

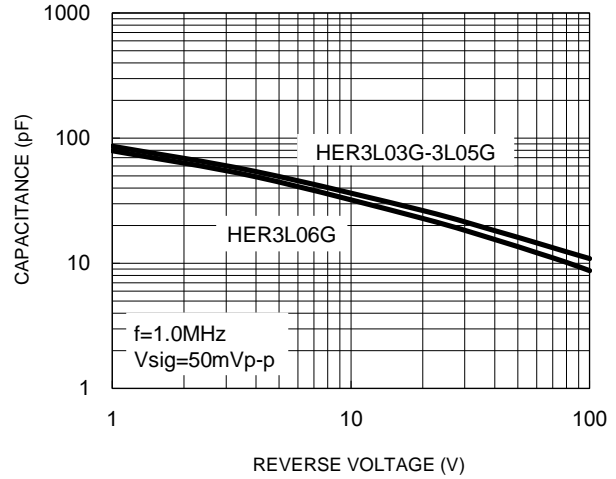


Fig.3 Typical Reverse Characteristics

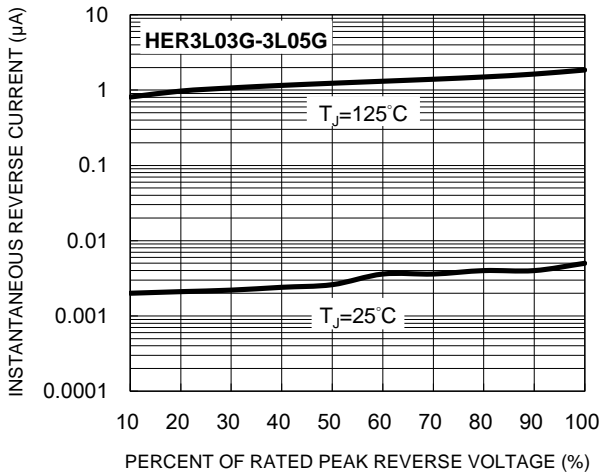


Fig.4 Typical Forward Characteristics

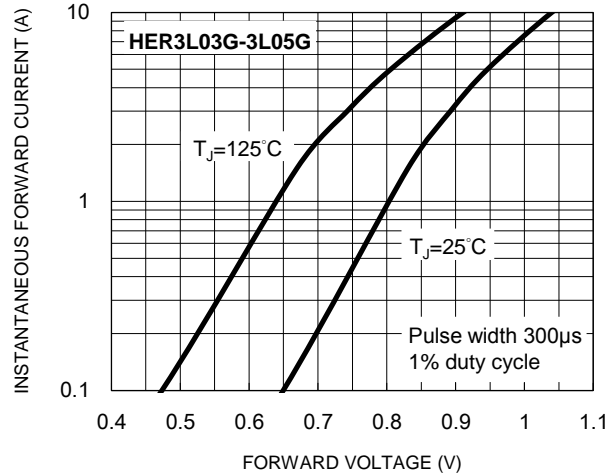


Fig.3 Typical Reverse Characteristics

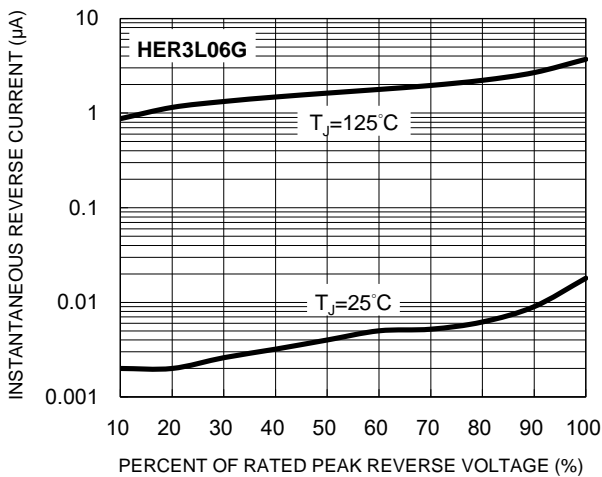
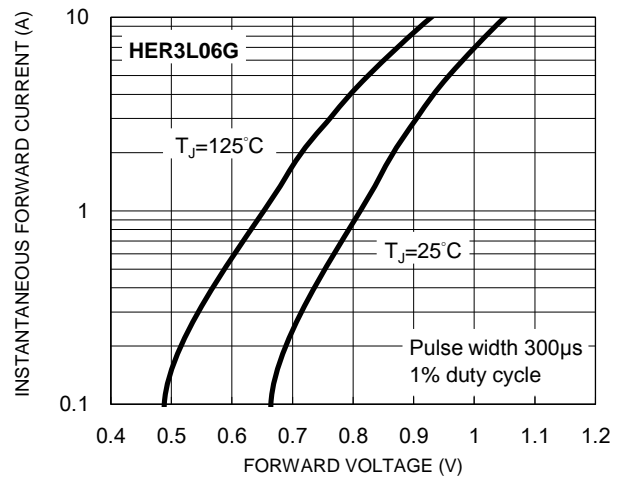
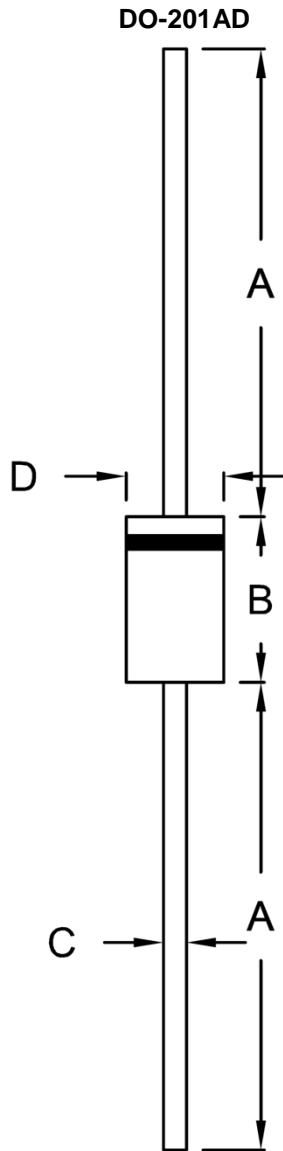


Fig.4 Typical Forward Characteristics



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

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