

## 1A, 50V - 1000V Glass Passivated High Efficient Rectifier

### FEATURES

- Glass passivated chip junction
- High current capability, Low  $V_F$
- High reliability
- High surge current capability
- 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-204AL (DO-41)
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.33 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	1	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	30	A
$T_{JMAX}$	150	°C
Package	DO-204AL (DO-41)	
Configuration	Single die	



DO-204AL (DO-41)

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

PARAMETER	SYMBOL	HER 101 G-K	HER 102 G-K	HER 103 G-K	HER 104 G-K	HER 105 G-K	HER 106 G-K	HER 107 G-K	HER 108 G-K	UNIT
Marking code on the device		HER101 G	HER102 G	HER103 G	HER104 G	HER105 G	HER106 G	HER107 G	HER108 G	
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	$I_{F(AV)}$	1								A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	30								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>LIMIT</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	60	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	15	°C/W

<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 per diode <sup>(1)</sup>	HER101G-K	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V
	HER102G-K					
	HER103G-K					
	HER104G-K			-	1.3	V
	HER105G-K					
	HER106G-K					
	HER107G-K					
HER108G-K	-	1.7	V			
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>		$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		-	150	$\mu\text{A}$
Junction capacitance	HER101G-K	1 MHz, $V_R = 4.0\text{V}$	$C_J$	15	-	pF
	HER102G-K					
	HER103G-K					
	HER104G-K			10	-	pF
	HER105G-K					
	HER106G-K					
	HER107G-K					
HER108G-K						
Reverse recovery time	HER101G-K	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	$t_{rr}$	-	50	ns
	HER102G-K					
	HER103G-K					
	HER104G-K			-	75	ns
	HER105G-K					
	HER106G-K					
	HER107G-K					
HER108G-K						

**Notes:**

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

**ORDERING INFORMATION**

<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
HER10xG-K (Note 1, 2)	A0	G	DO-41	3,000 / Ammo box (52mm taping)
	R0		DO-41	5,000 / 13" Paper reel
	R1		DO-41	5,000 / 13" Paper reel (Reverse)
	B0		DO-41	1,000 / Bulk packing

**Notes:**

- "x" defines voltage from 50V (HER101G-K) to 1000V (HER108G-K)
- Whole series with green compound (halogen-free)

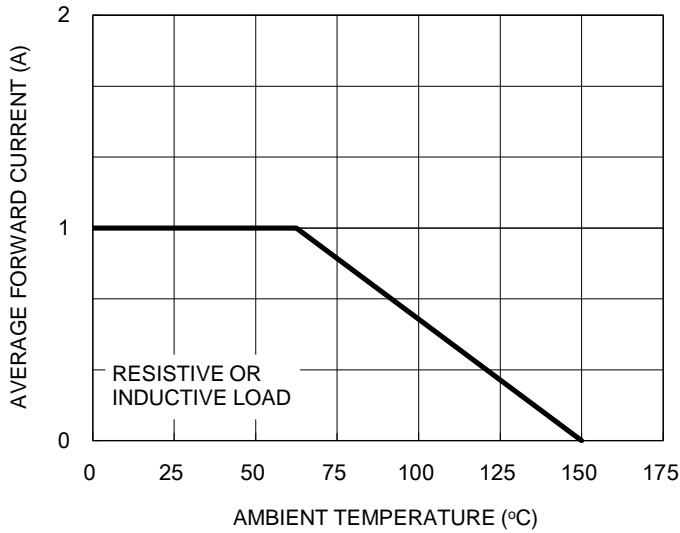
**EXAMPLE P/N**

<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
HER101G-K A0G	HER101G-K	A0	G	Green compound

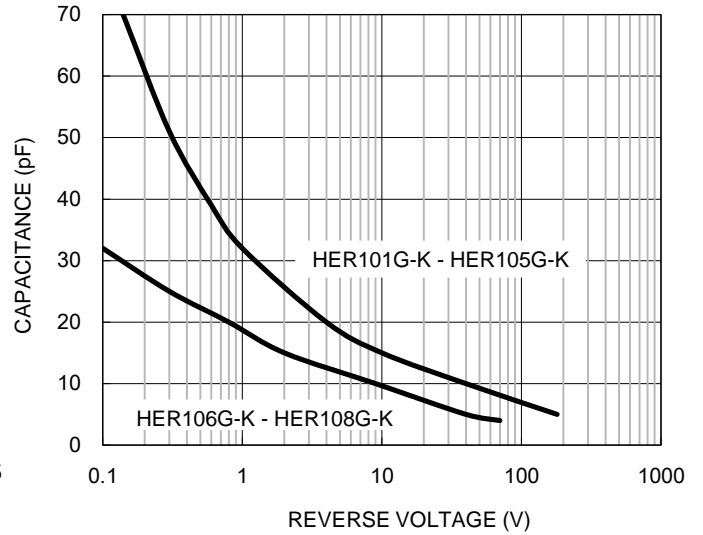
**CHARACTERISTICS CURVES**

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

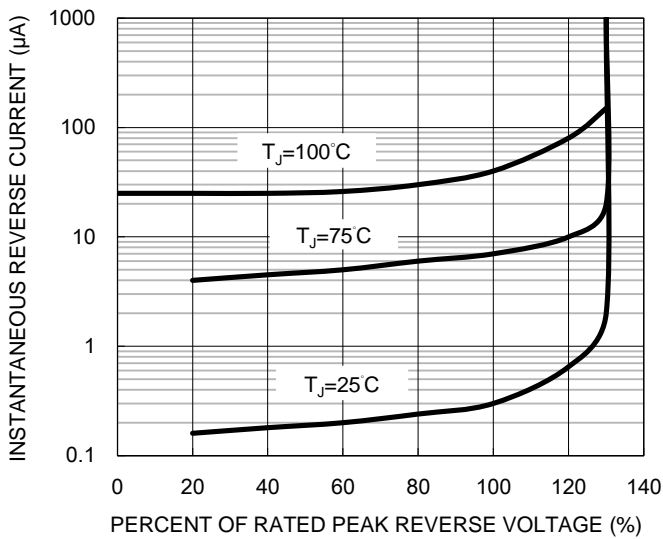
**Fig.1 Forward Current Derating Curve**



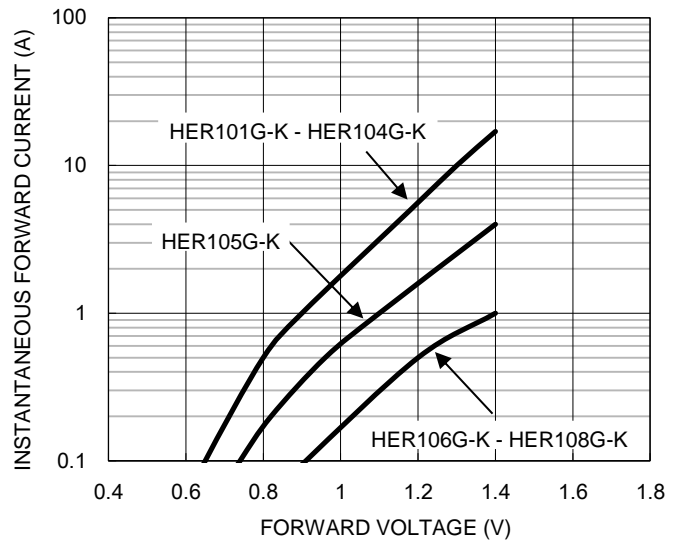
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



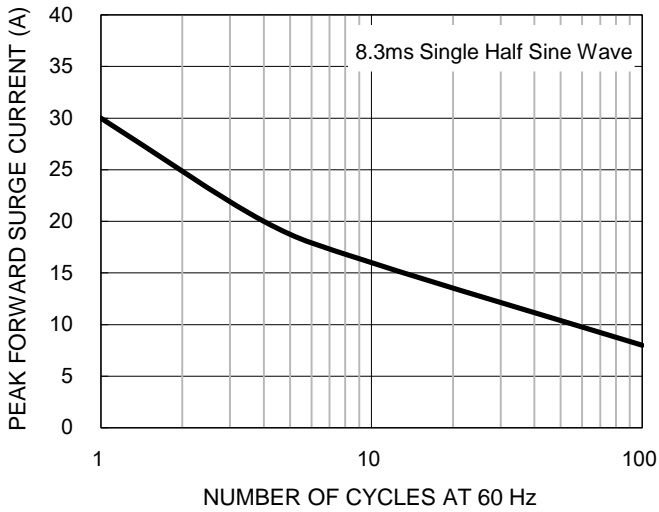
**Fig.4 Typical Forward Characteristics**



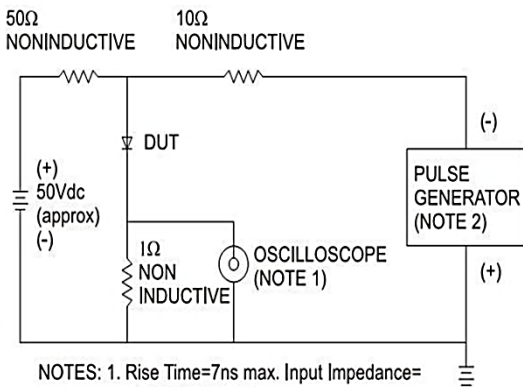
**CHARACTERISTICS CURVES**

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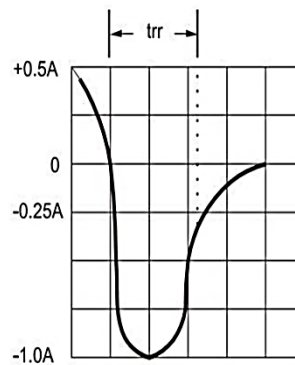
**Fig.5 Maximum Non-repetitive Forward Surge Current**



**Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram**

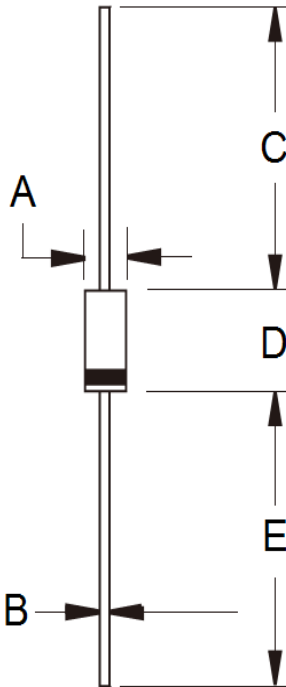


NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance= 50 ohms



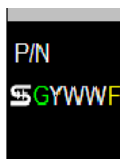
**PACKAGE OUTLINE DIMENSIONS**

DO-204AL (DO-41)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.00	2.70	0.079	0.106
B	0.71	0.86	0.028	0.034
C	25.40	-	1.000	-
D	4.20	5.20	0.165	0.205
E	25.40	-	1.000	-

**MARKING DIAGRAM**



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

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