

## 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:**

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

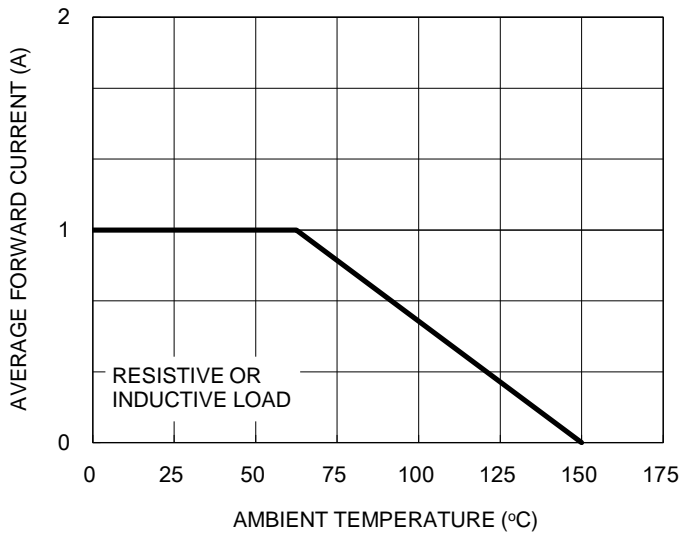
**EXAMPLE P/N**

<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

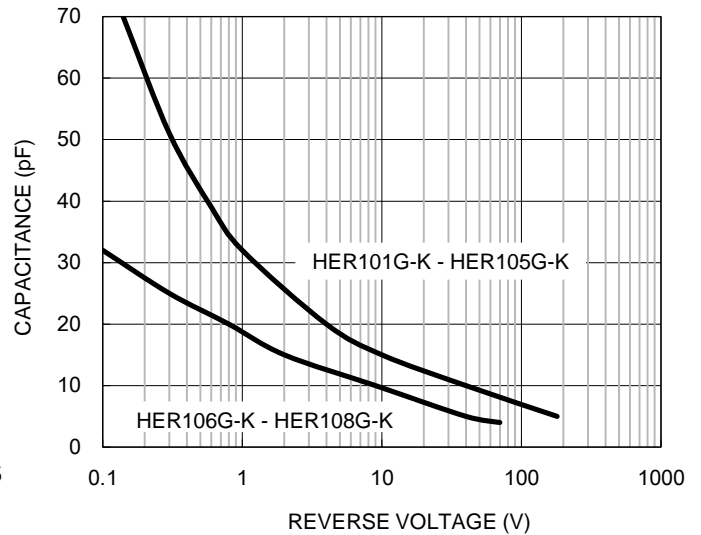
**CHARACTERISTICS CURVES**

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

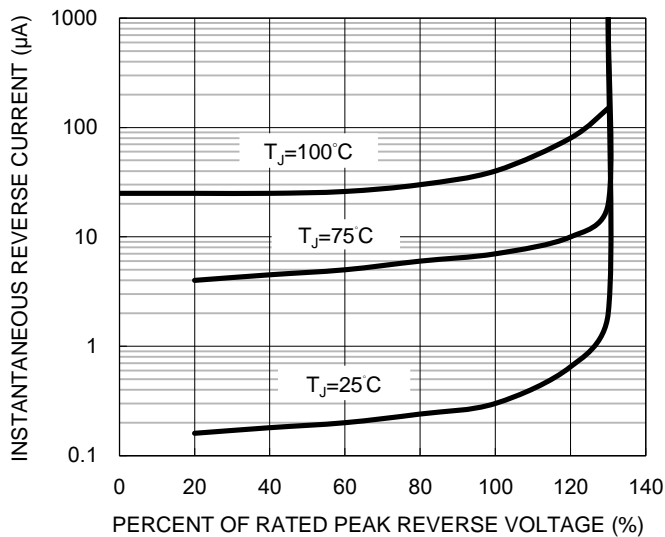
**Fig.1 Forward Current Derating Curve**



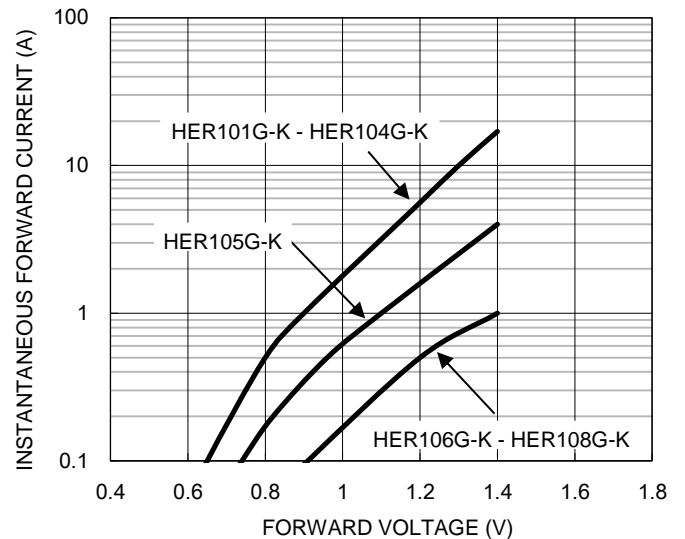
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



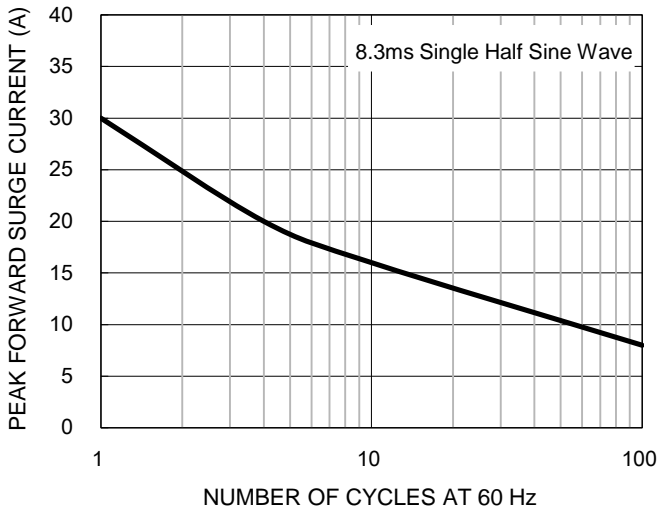
**Fig.4 Typical Forward Characteristics**



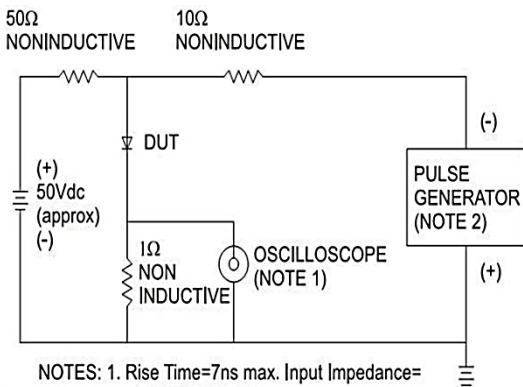
**CHARACTERISTICS CURVES**

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

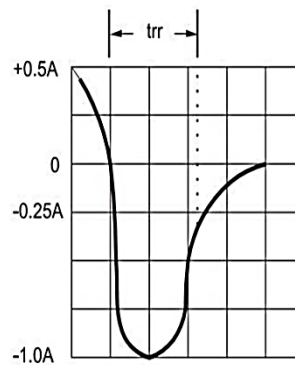
**Fig.5 Maximum Non-repetitive Forward Surge Current**



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

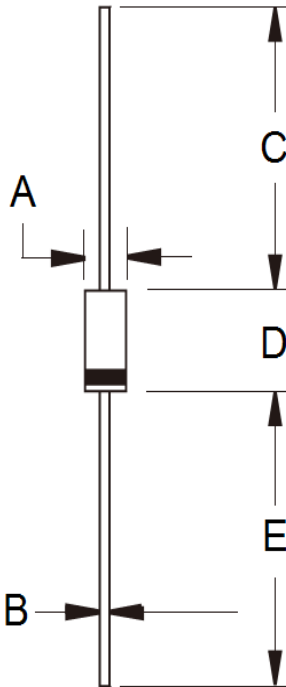


NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance= 50 ohms



**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

## Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.