

# HER301G THRU HER308G

## List

List..... 1

Package outline..... 2

Features..... 2

Mechanical data..... 2

Maximum ratings .....2

Rating and characteristic curves..... 3

Pinning information.....4

Marking..... 4

Taping & bulk specifications for AXIAL devices..... 4

Suggested thermal profiles for soldering processes..... 5

High reliability test capabilities.....6

# HER301G THRU HER308G

## 3.0A Axial Leaded High Efficiency Rectifiers-50-1000V

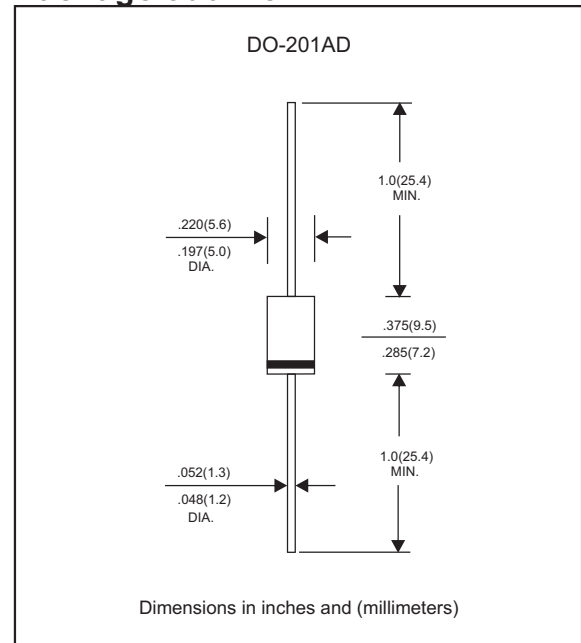
### Features

- Axial lead type devices for through hole design.
- High current capability.
- Ultrafast recovery time for high efficiency.
- High surge capability.
- Glass passivated chip junction.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen free parts, ex. HER301G-H.

### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, DO-201AD
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any
- Weight : Approximated 1.10 gram

### Package outline



### Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

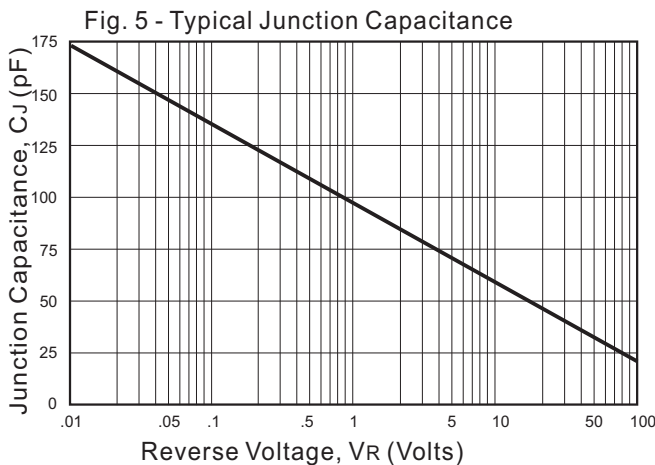
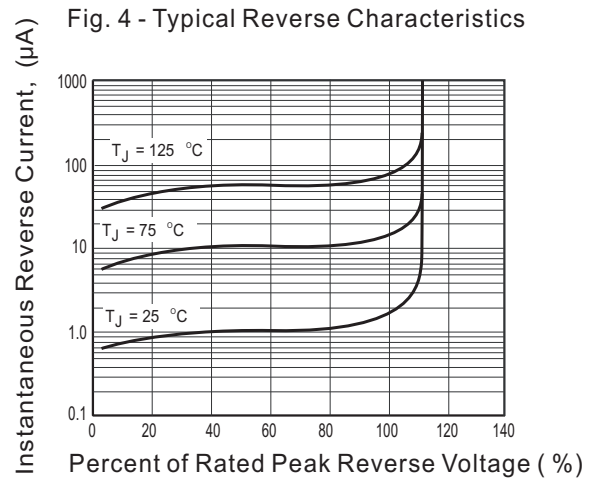
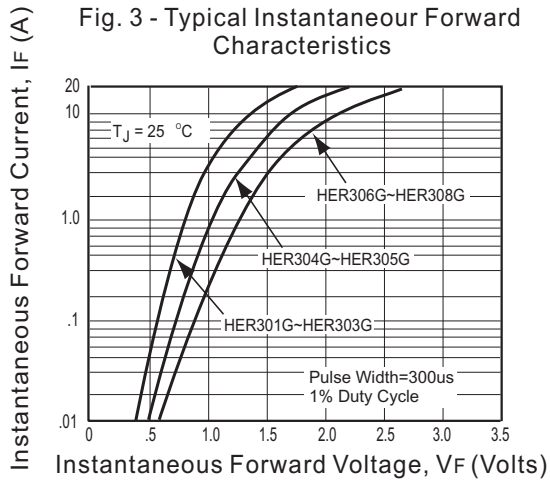
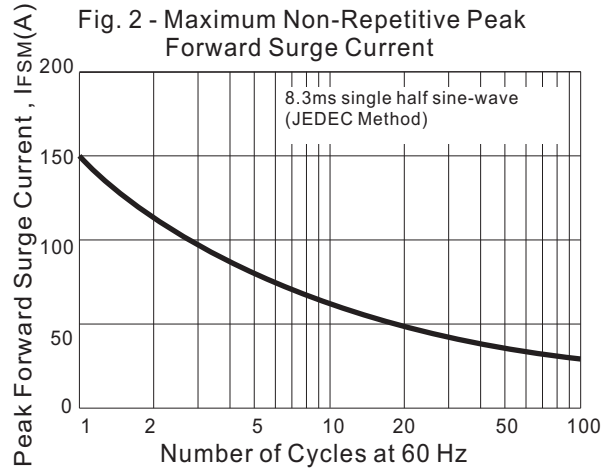
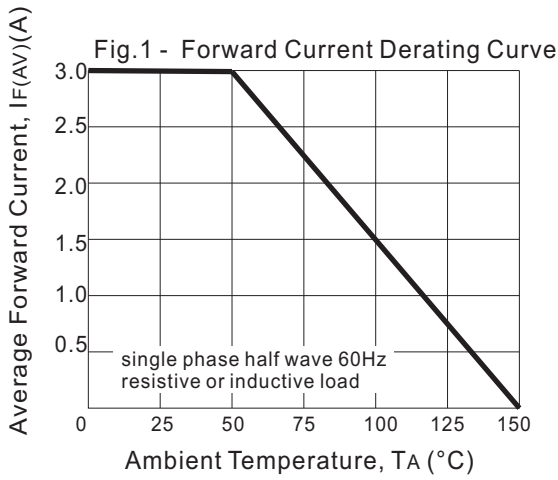
PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	Ambient temperature = $50^\circ\text{C}$	$I_o$			3.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC method)	$I_{FSM}$			150	A
Reverse current	$V_R = V_{RRM}$ $T_J = 25^\circ\text{C}$	$I_R$			5.0	$\mu\text{A}$
	$V_R = V_{RRM}$ $T_J = 125^\circ\text{C}$				100	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	$C_j$		75		pF
Storage temperature		$T_{STG}$	-65		+175	$^\circ\text{C}$

SYMBOLS	$V_{RRM}^{*1}$ (V)	$V_{RMS}^{*2}$ (V)	$V_R^{*3}$ (V)	$V_F^{*4}$ (V)	$t_{rr}^{*5}$ (ns)	Operating temperature $T_J$ , ( $^\circ\text{C}$ )
HER301G	50	35	50	1.00	50	-55 to +150
HER302G	100	70	100			
HER303G	200	140	200			
HER304G	300	210	300	1.30		
HER305G	400	280	400			
HER306G	600	420	600	1.85	75	
HER307G	800	560	800			
HER308G	1000	700	1000			

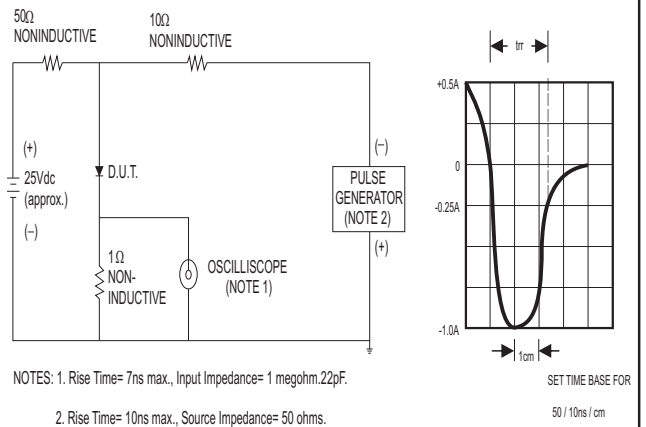
- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage@ $I_F=3.0\text{A}$
- \*5 Maximum Reverse recovery time, note 1

Note 1. Reverse recovery time test condition,  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

## Rating and characteristic curves (HER301G THRU HER308G)





**Fig. 6 - Test Circuit Diagram and Reverse Recovery Time Characteristic**



# HER301G THRU HER308G

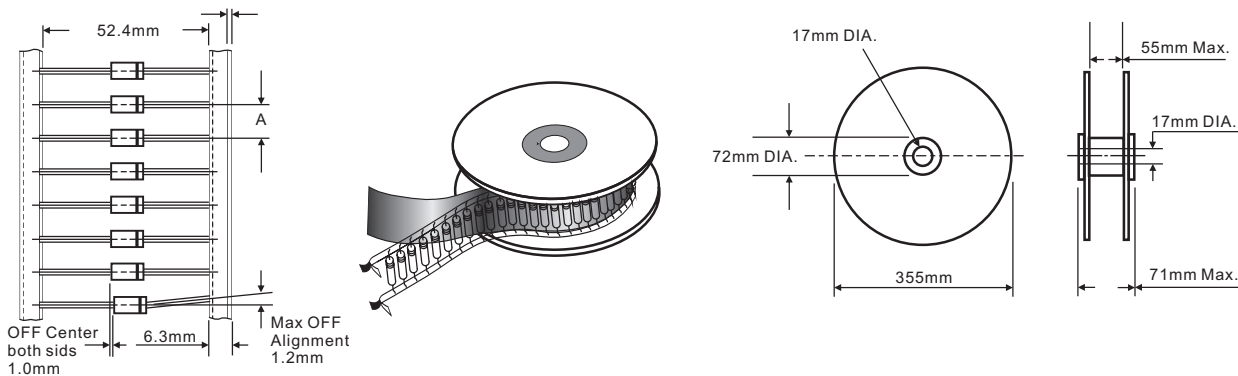
## Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1  2	1  2

## Marking

Type number	Marking code
HER301G	HER301G
HER302G	HER302G
HER303G	HER303G
HER304G	HER304G
HER305G	HER305G
HER306G	HER306G
HER307G	HER307G
HER308G	HER308G

## Taping & bulk specifications for AXIAL devices



### REEL PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / REEL)	COMPONENT SPACING "A" in FIG. A	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-201AD	1,200	10 mm	380 * 340 * 370	4,800	9.1

### AMMO PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-201AD	1,200	260 * 83 * 160	440 * 270 * 340	12,000	17.0

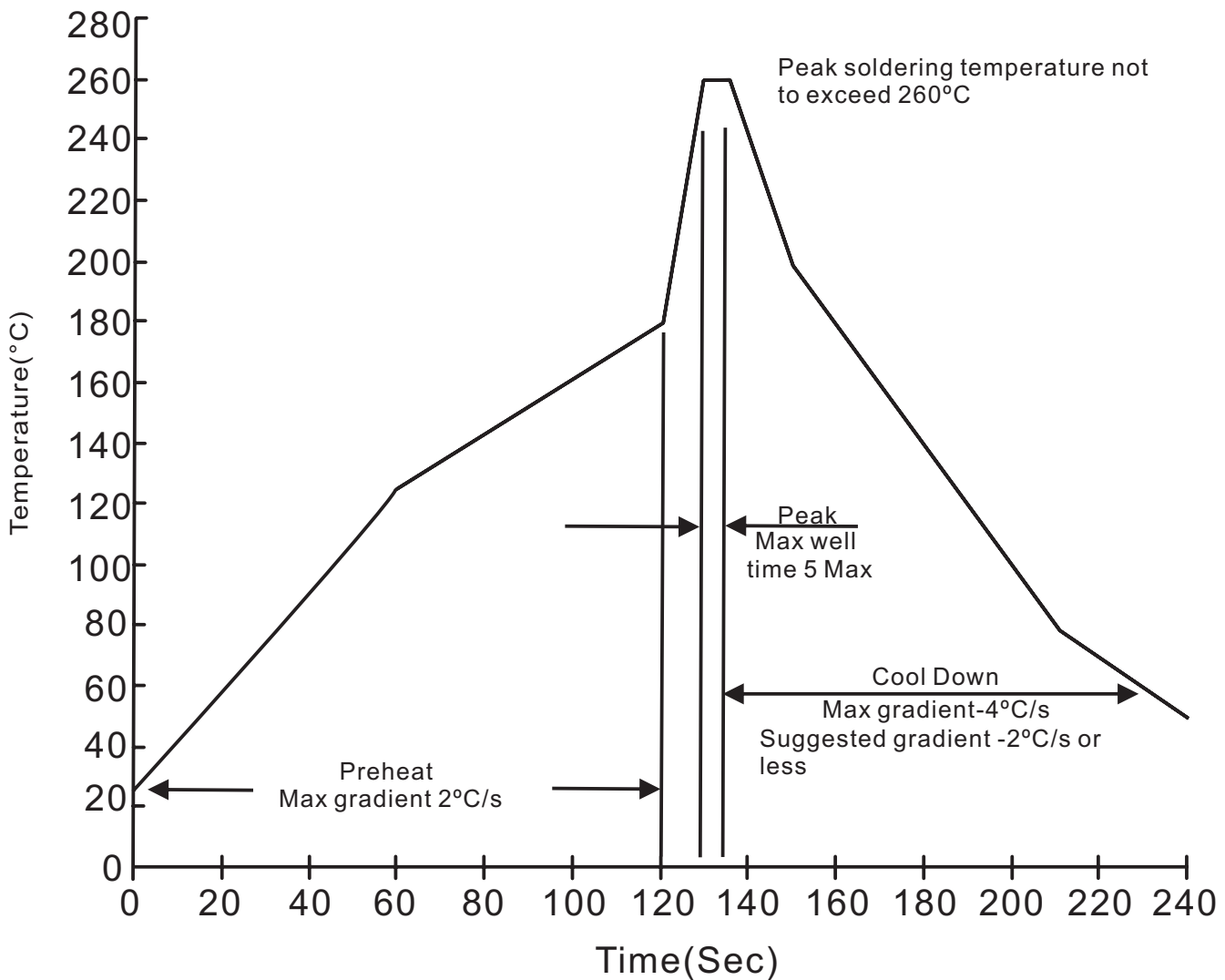
# HER301G THRU HER308G

BULK PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-201AD	500	305 * 73 * 40	347 * 320 * 271	12,000	16.4

**Suggested thermal profiles for soldering processes**

1. Lead free temperature profile wave-soldering



**HER301G THRU HER308G****High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. Pull Test	2.0kg in axial lead direction for 10 sec. $I_F = I_O$	MIL-STD-202F METHOD-211A
4. Bend Lead	2.0kg weight applied to each lead bending arc 90°±5° for 3 times	MIL-STD-202F METHOD-211A
5. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 150^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
6. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs. $T_A = 25^\circ\text{C}$ , $I_F = I_O$	MIL-STD-750D METHOD-1027
7. Intermittent Operation Life	On state: power on for 5 min. off state: power off for 5 min, on and off for 500 cycles.	MIL-STD-750D METHOD-1036
8. Pressure Cooker	15P <sub>sig</sub> at $T_A = 121^\circ\text{C}$ for 4 hrs.	JESD22-A102
9. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
10. Forward Surge	8.3ms single half sine-wave one surge.	MIL-STD-750D METHOD-4066-2
11. Humidity	at $T_A = 85^\circ\text{C}$ , RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
12. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031