

HER101G THRU HER108G

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings and electrical characteristics	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

HER101G THRU HER108G

1.0A Axial Leaded High Efficiency Rectifiers-50-1000V

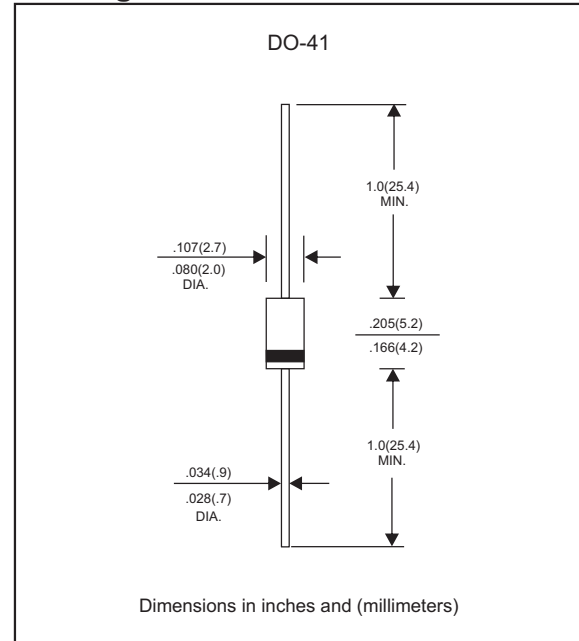
Features

- Axial lead type devices for through hole design.
- High current capability.
- Ultrafast recovery time for high efficiency.
- High surge current capability.
- Glass passivated chip junction.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen free parts, ex. HER101G-H.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, DO-41
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any
- Weight : Approximated 0.33 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	See Fig.2	I_O			1.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			30	A
Reverse current	$V_R = V_{RRM} \quad T_J = 25^{\circ}\text{C}$	I_R			5.0	μA
	$V_R = V_{RRM} \quad T_J = 125^{\circ}\text{C}$				150	
Thermal resistance	Junction to ambient, note 2	$R_{\theta JA}$		60		$^{\circ}\text{C/W}$
	Junction to lead, note 2	$R_{\theta JL}$		15		
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		20		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 , (°C)
HER101G	50	35	50	1.00	50	-55 to +150
HER102G	100	70	100			
HER103G	200	140	200			
HER104G	300	210	300	1.30		
HER105G	400	280	400			
HER106G	600	420	600	1.85	75	
HER107G	800	560	800			
HER108G	1000	700	1000			

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@ $I_F=1.0\text{A}$

*5 Maximum Reverse recovery time, note 1

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

2: Thermal resistance from junction to ambient and from junction to lead length 0.375"(9.5mm) P.C.B. mounted.

Rating and characteristic curves (HER101G THRU HER108G)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

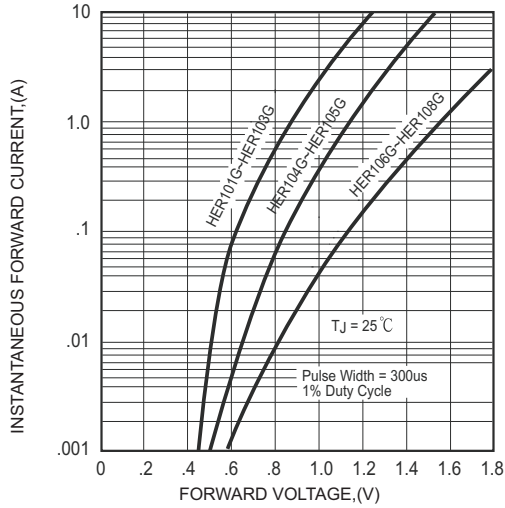


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

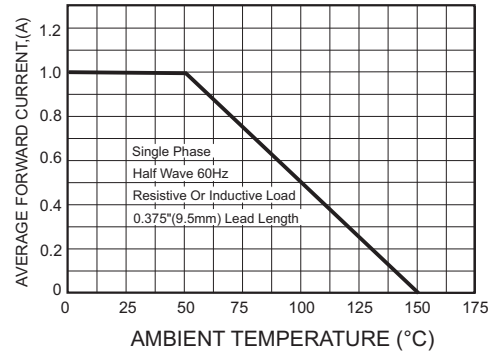


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

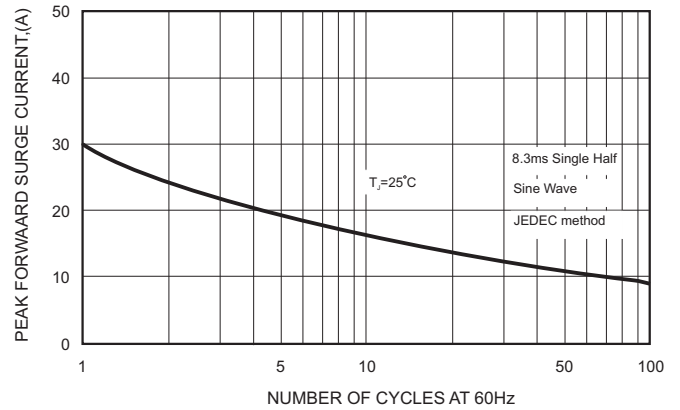
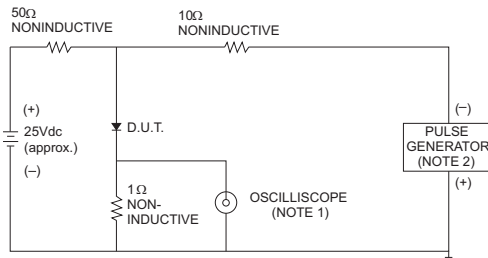


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



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

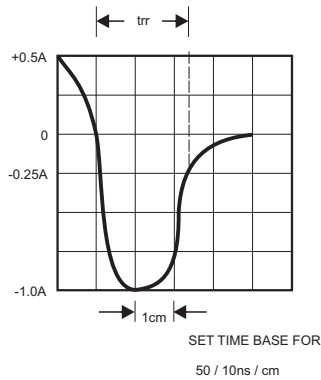
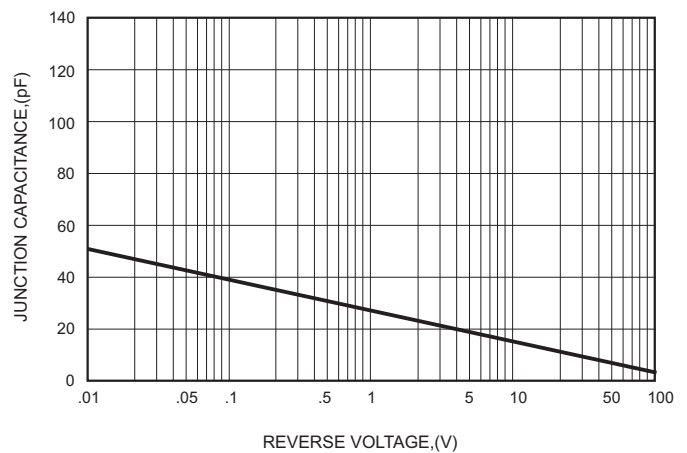


FIG.5-TYPICAL JUNCTION CAPACITANCE



HER101G THRU HER108G

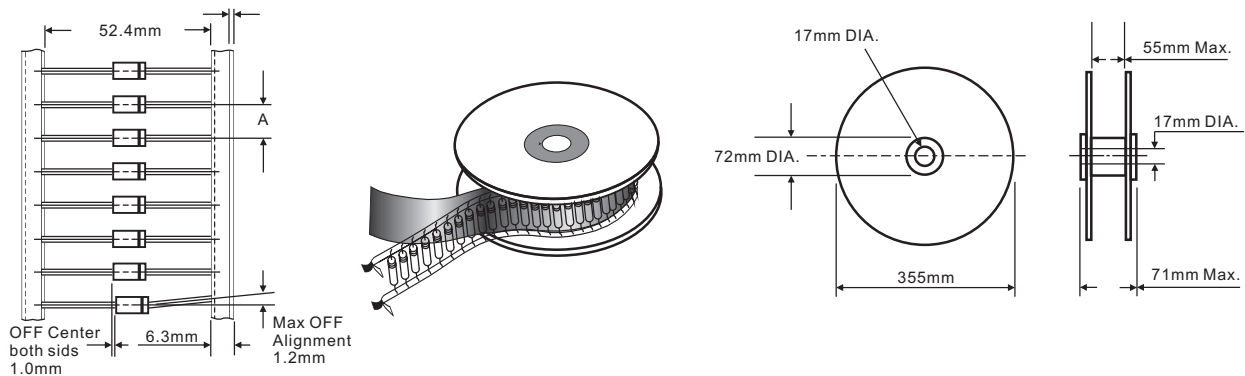
Pinning information

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

Marking

Type number	Marking code
HER101G	HER101G
HER102G	HER102G
HER103G	HER103G
HER104G	HER104G
HER105G	HER105G
HER106G	HER106G
HER107G	HER107G
HER108G	HER108G

Taping & bulk specifications for AXIAL devices



REEL PACKING

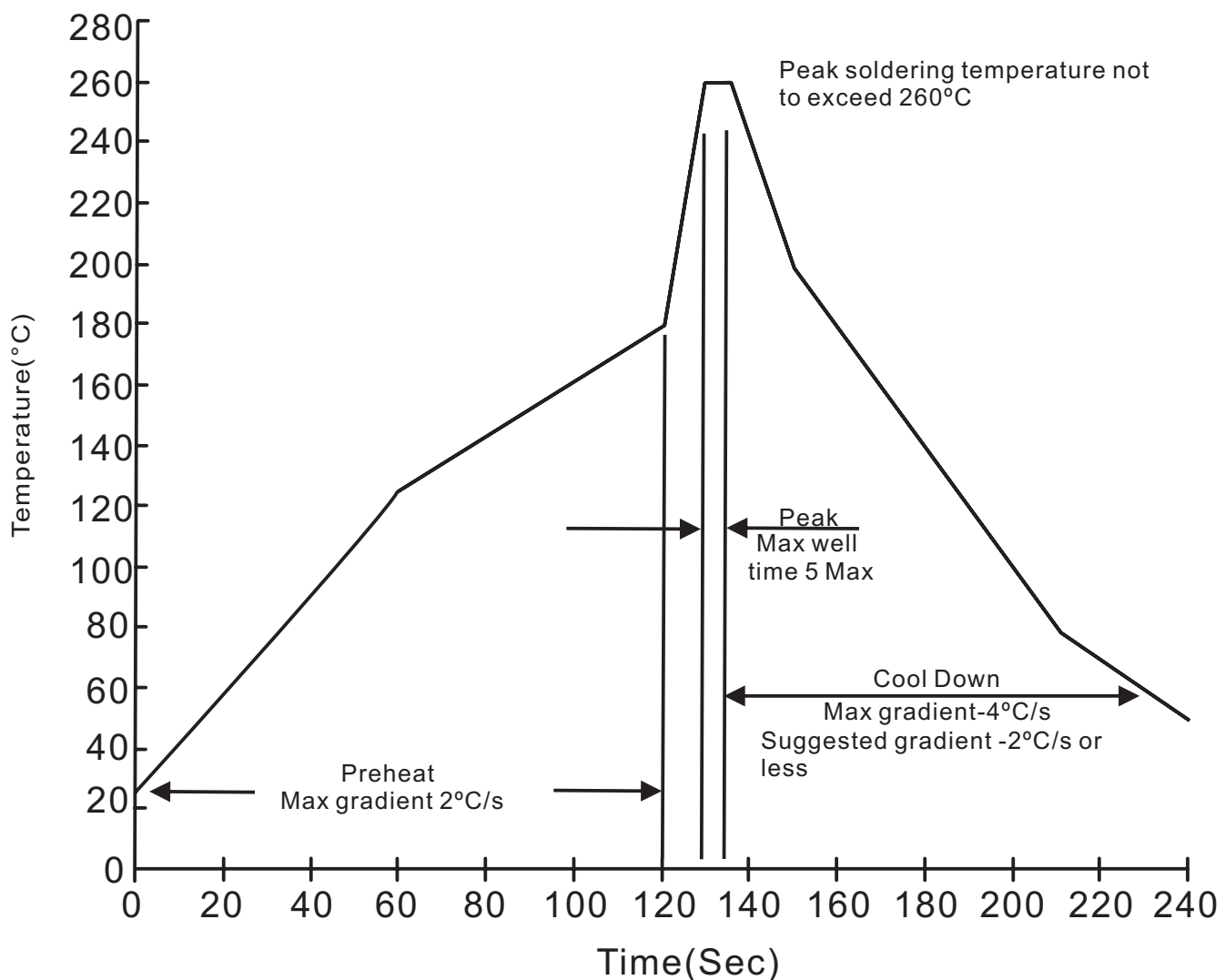
DEVICE CASE TYPE	Q'TY 1 (PCS / REEL)	COMPONENT SPACING "A" in FIG. A	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-41	5,000	5 mm	360 * 340 * 370	20,000	10.8

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-41	5,000	260 * 83 * 160	440 * 270 * 340	50,000	20.0

HER101G THRU HER108G**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-41	1,000	194 * 84 * 20	465 * 220 * 260	50,000	20.6

Suggested thermal profiles for soldering processes**1. Lead free temperature profile wave-soldering**

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm5^{\circ}\text{C}$ for $10\pm2\text{sec.}$ immerse body into solder $1/16''\pm1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. Pull Test	1.0kg in axial lead direction for 10 sec. $I_F=I_O$	MIL-STD-202F METHOD-211A
4. Bend Lead	1.0kg weight applied to each lead bending arc $90^{\circ}\pm5^{\circ}$ 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.	MIL-STD-750D METHOD-1027
7. Intermittent Operation Life	$T_A = 25^{\circ}\text{C}$, $I_F = I_O$ 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	$15P_{SIG}$ at $T_A=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
9. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ 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