

HER102 THRU HER108

PLASTIC HIGH-EFFICIENCY RECTIFIERS



VOLTAGE: 100~1000 Volts

CURRENT: 1.0 Amperes

DO-41

Marking and Polarity

FEATURES

- Low reverse leakage
- High forward surge capability
- High temperature soldering guaranteed 265±5°C/10 seconds at terminals
- Lead and body according with RoHS standard

MECHANICAL DATA

- Case: JMolded Plastic
- Epoxy: UL 94V-0 rate flame retardant
- Polarity :Color band denotes cathode end
- Mounting position: Any
- Weight: 0.33 grams

TYPICAL APPLICATIONS

- Switch power supply
- LED Driver



Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	HER 102	HER 103	HER 104	HER 105	HER 106	HER 107	HER 108	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	100	200	300	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	70	140	210	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	100	200	300	400	600	800	1000	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	30							A
Maximum instantaneous forward voltage at 2.0 A (Note 1)	V_F	1	1.3		1.7			V	
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 2)	I_{RRM}	5 100							uA
Maximum Reverse Recovery Time (Note 3)	T_{RR}	50							nS
Typical junction capacitance (Note 4)	C_J	15			12			pF	
Operating junction and Storage temperature range	T_J	-55 to +150							°C
Storage temperature range	T_{STG}	-55 to +150							

Thermal Characterstcs (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	HER102 THRU HER108	Unit
Typical thermal resistance (Note 5)	$R_{\theta JA}$	50	°C/W
	$R_{\theta JL}$	20	

Note: 1.Pulse test: 300 μs pulse width,1% duty cycle

2.Pulse test: pulse width≤40ms

3. Reverse Recovery Time test condition: IF=0.5A, IR=1.0A, IRR=0.25A

4.Measured at 1MHz and applied reverse voltage of 4.0V D.C.

5.Thermal resistance from junction to lead vertical P.C.B. mounted , 0.375"(9.5mm)lead length

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RATING AND CHARACTERISTIC CURVES

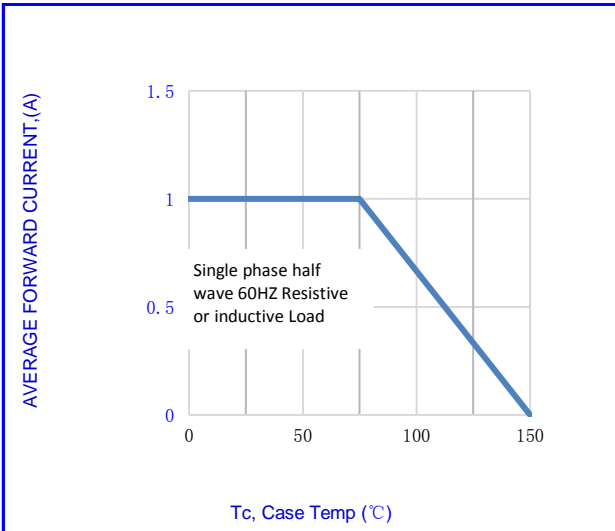


Fig.1-FORWARD CURRENT DERATING CURVE

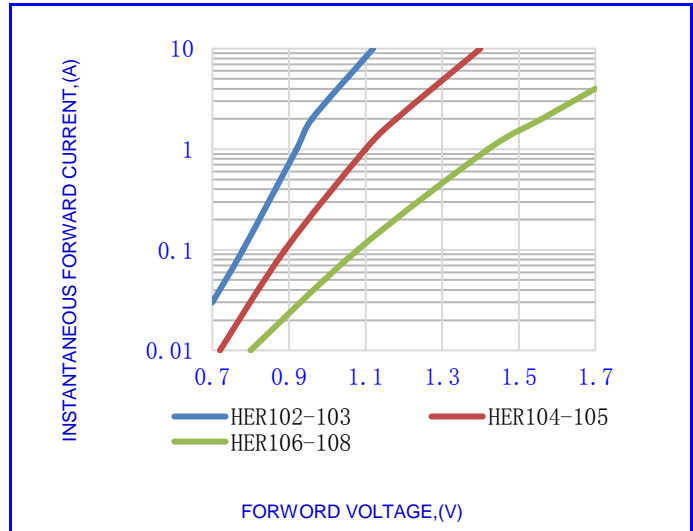


Fig.2- TYPICAL INSTANTANEOUS FORWARD

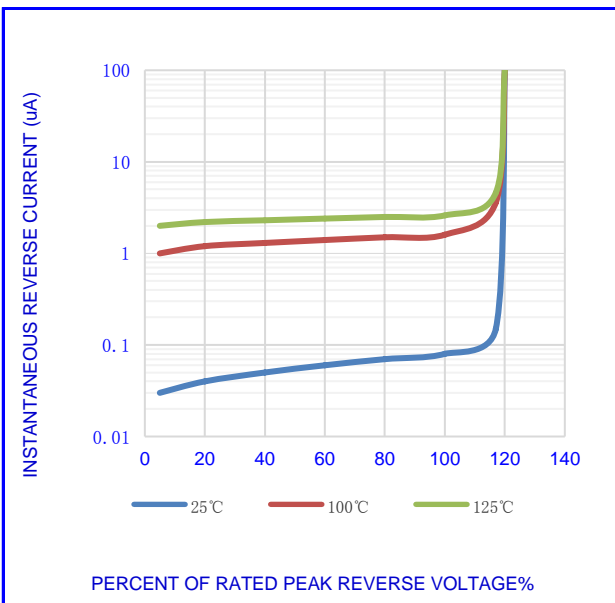


Fig.3- TYPICAL REVERSE CHARACTERISTICS

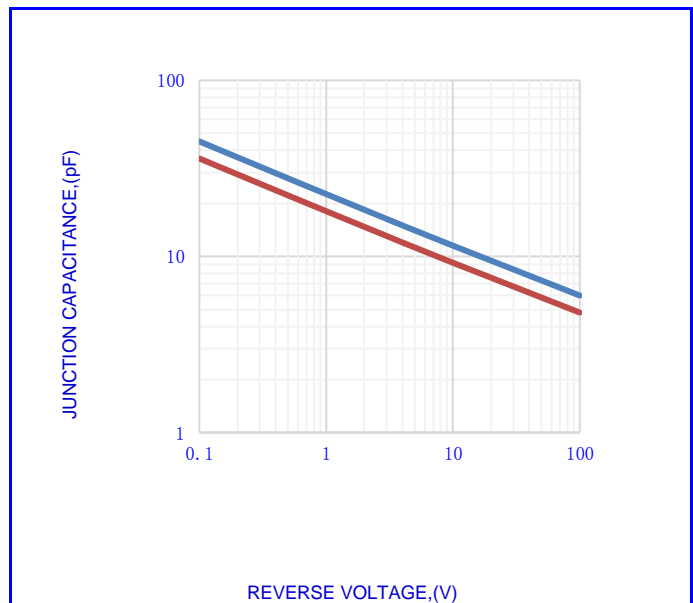


Fig.4- TYPICAL JUNCTION CAPACITANCE

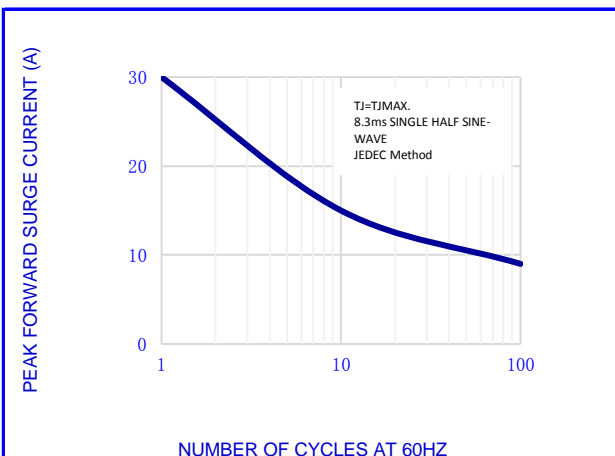


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

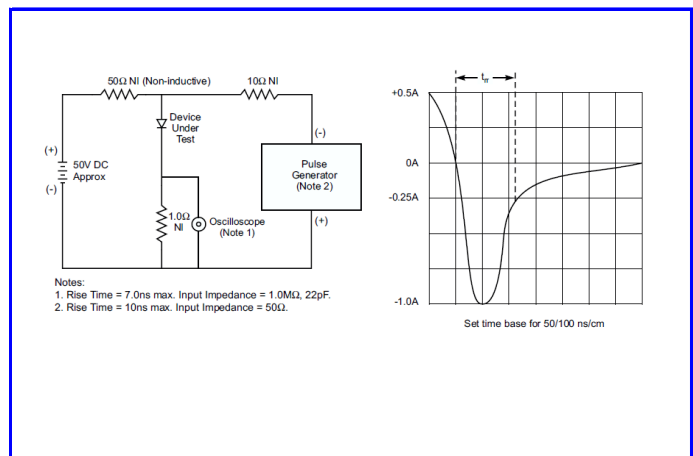


Fig.6-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT

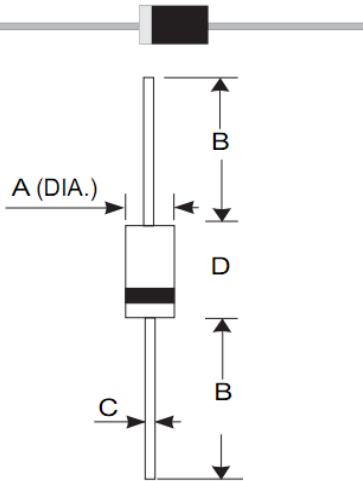
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OUTLINE DRAWINGS

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OUTLINE DIMENSIONS

Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.0	-	2.8	0.079	-	0.110
B	25.1	-	-	0.988	-	-
C	0.6	-	0.9	0.024	-	0.035
D	4.2	-	5.2	0.165	-	0.205

Packing Information

Package	Pack	Box Size LxWxH(mm)	Quantity (pcs/box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
D0-41	B/G	250*75*140	5000	420*280*310	50000

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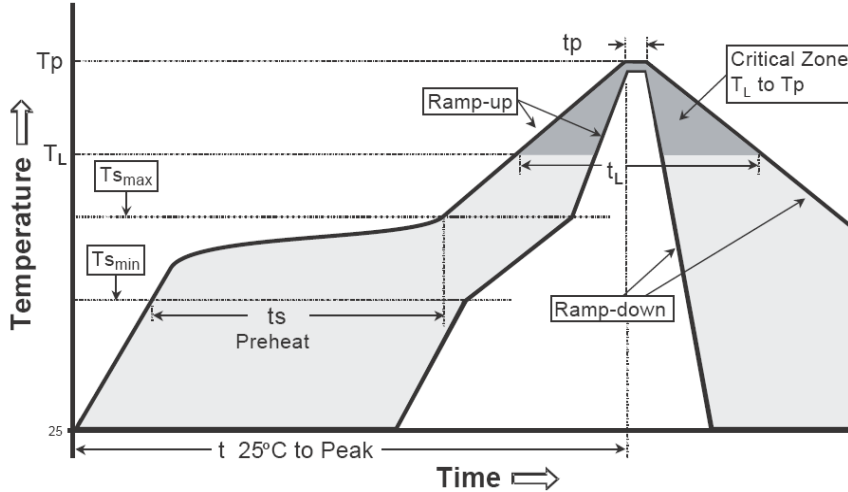
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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