

# HER501~HER508

## HIGH EFFICIENCY RECTIFIERS

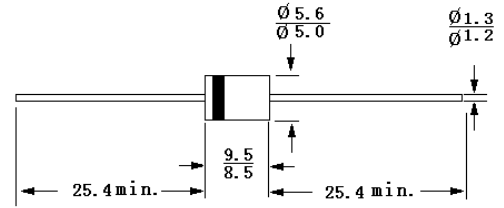
Voltage Range – 50 to 1000 Volts

Current – 5.0 Ampere

DO-201AD

### Features

- Low power loss, high efficiency
- Low leakage
- Low forward voltage drop
- High current capability
- High speed switching
- High reliability
- High current surge



Dimensions in mm

### Mechanical Data

- **Case:** DO-201AD, moulded plastic
- **Terminals:** MIL-STD-202E, method 208C guaranteed
- **Polarity:** Colored band denotes cathode end
- **Mounting position:** Any

### Absolute Maximum Ratings and Characteristics

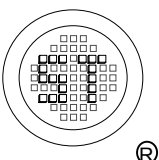
Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load, for capacitive load, derate current by 20%.

	Symbols	HER 501	HER 502	HER 503	HER 504	HER 505	HER 506	HER 507	HER 508	Unit
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	300	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	210	280	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	300	400	600	800	1000	V
Maximum Average Forward Rectified Current at $T_A = 50^\circ\text{C}$	$I_{(AV)}$	5.0								A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150								A
Maximum Instantaneous Forward Voltage at 5.0A	$V_F$	1.0		1.3		1.7			V	
Maximum Reverse Current at $T_J = 25^\circ\text{C}$ at Rated DC Blocking Voltage $T_J = 100^\circ\text{C}$	$I_R$	10 750								$\mu\text{A}$
Maximum Reverse Recovery Time (note1)	$T_{rr}$	50				75			nS	
Typical Junction Capacitance(note2)	$C_J$	70				50			pF	
Typical Thermal Resistance (note3)	$R_{\theta JA}$	20								$^\circ\text{C}/\text{W}$
Operating Junction Temperature	$T_J$	-55 to +150								$^\circ\text{C}$
Storage Temperature Range	$T_S$	-55 to +150								$^\circ\text{C}$

Notes: 1.Reverse recovery test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = -1.0\text{A}$ ,  $I_{rr} = -0.25\text{A}$

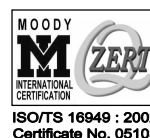
2.Measured at 1.0MHz and applied reverse voltage of 4.0V

3.Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length P.C.B. mounted.



**SEMTECH ELECTRONICS LTD.**

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# HER501~HER508

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

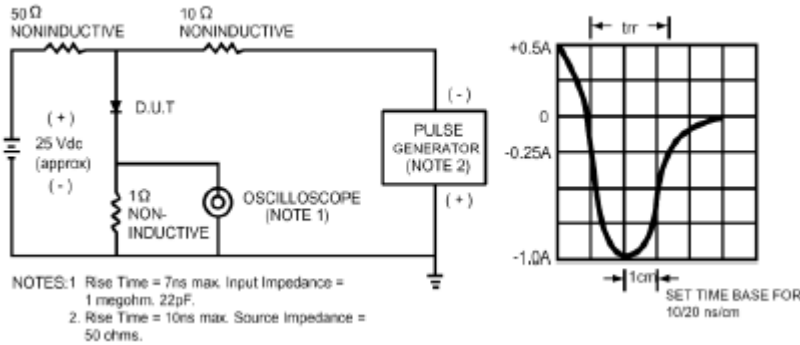


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

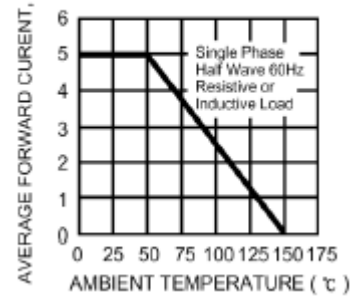


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

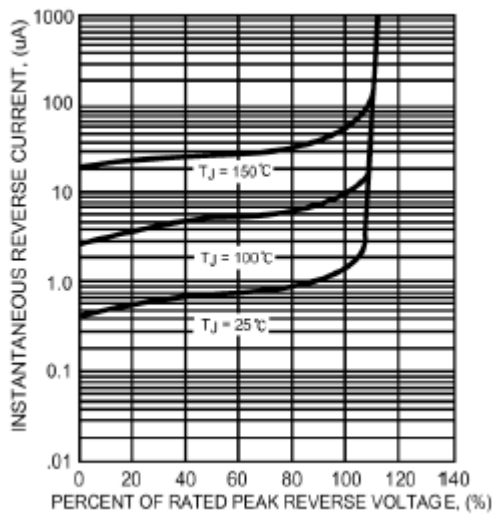


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

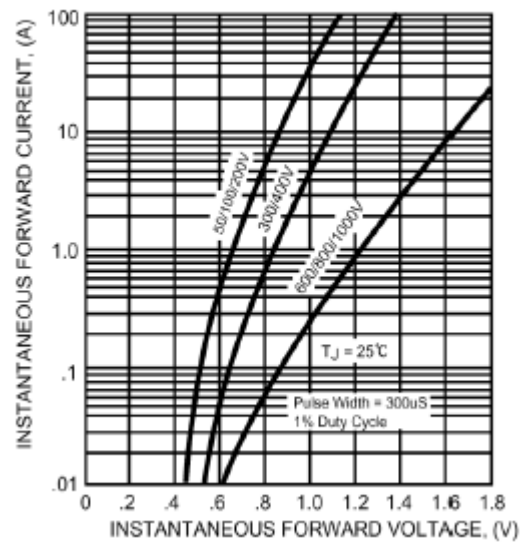


FIG. 5 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

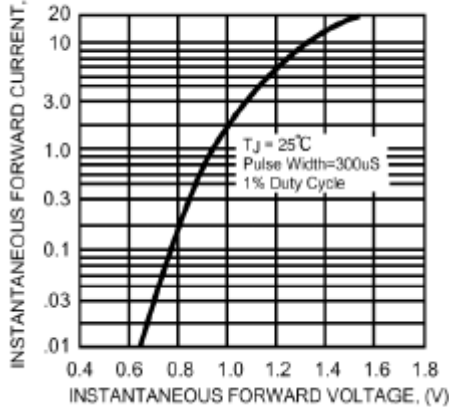
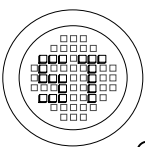
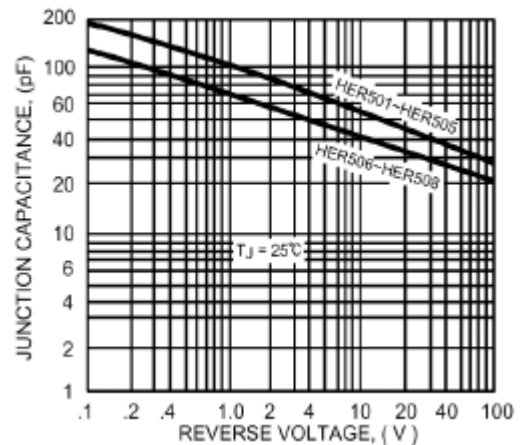
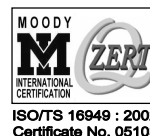


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



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