

# Power Diode Fast Recovery



## Features:

- Fast reverse recovery time,  $t_{rr}$
- Low forward voltage drop,  $V_F$
- Low cost axial packages
- High current capability
- High reliability
- High surge current capability



## Mechanical Data:

Cases	: Moulded plastic DO-201AD
Lead	: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
Polarity	: Colour band denotes cathode end
High temperature soldering guaranteed	: 260°C/10 seconds/0.375", (9.5mm) lead lengths at 5lbs., (2.3kg) tension

## Maximum Ratings and Electrical 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%.

Type Number	Symbol	HER305	HER307	Unit
Maximum recurrent peak reverse voltage	$V_{RRM}$	400	800	V
Maximum RMS voltage	$V_{RMS}$	280	560	
Maximum DC blocking voltage	$V_{DC}$	400	800	
Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A = 55^\circ\text{C}$	$I_{(AV)}$	3		A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150		
Maximum instantaneous forward voltage at 3A	$V_F$	1.3	1.7	V
Maximum DC reverse current at $T_A = 25^\circ\text{C}$ at rated DC blocking voltage at $T_A = 100^\circ\text{C}$	$I_R$	10 200		$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$T_{rr}$	50	75	ns
Typical junction capacitance (Note 2)	$C_j$	70	50	pF
Typical thermal resistance (Note 3)	$R\theta_{JA}$	40		$^\circ\text{C}/\text{W}$
Operating temperature range	$T_J$	-65 to +150		$^\circ\text{C}$
Storage temperature range	$T_{STG}$			

### Notes:

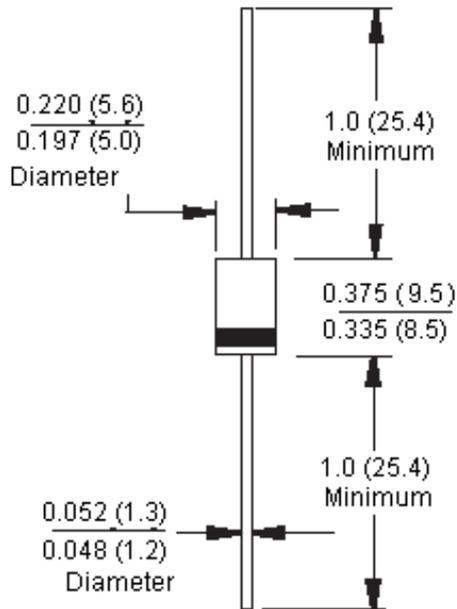
1. Reverse recovery test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1\text{A}$ ,  $I_{RR} = 0.25\text{A}$
2. Measured at 1MHz and applied reverse voltage of 4V DC
3. Mount on Cu-Pad Size 16mm x 16mm on PCB



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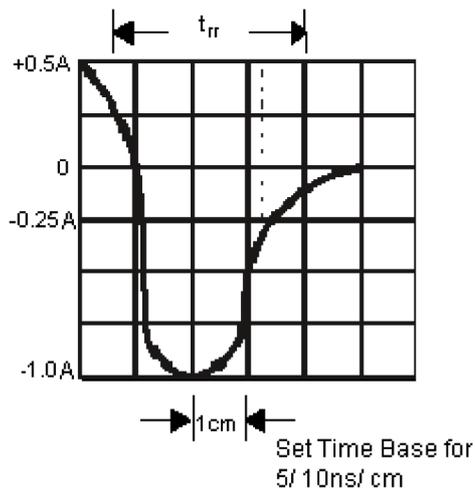
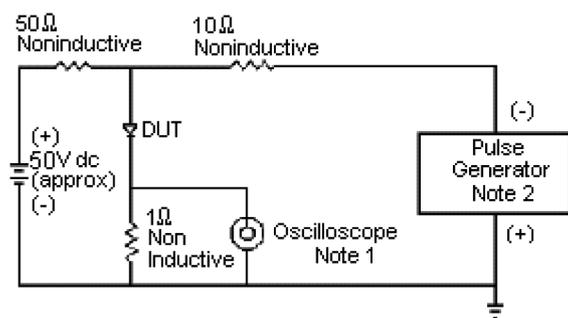
## DO-201AD



Dimensions : Millimetres (Inches)

## Ratings and Characteristic Curves

Figure 1 Reverse Recovery Time Characteristic and Test Circuit Diagram



Note:

1. Rise Time = 7nS maximum  
Input Impedance = 1MΩ, 22pF
2. Rise Time = 10nS maximum  
Source Impedance = 50Ω



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Figure 2 Maximum Average Forward Current Derating

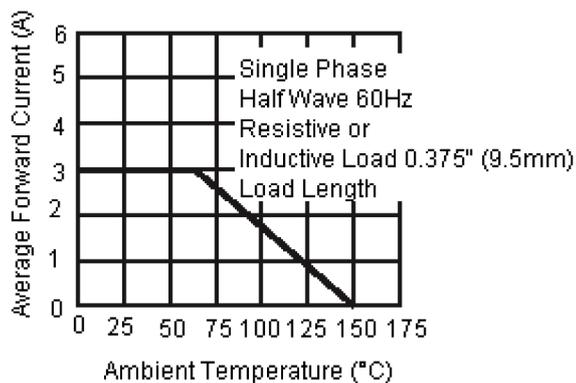


Figure 3 Typical Reverse Characteristics

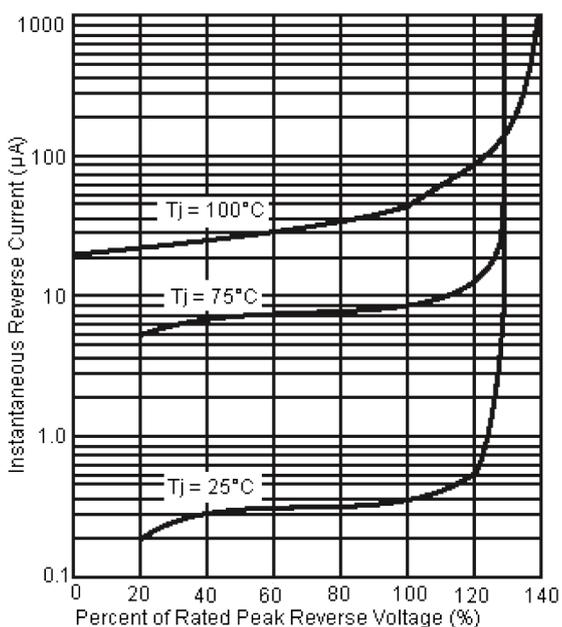
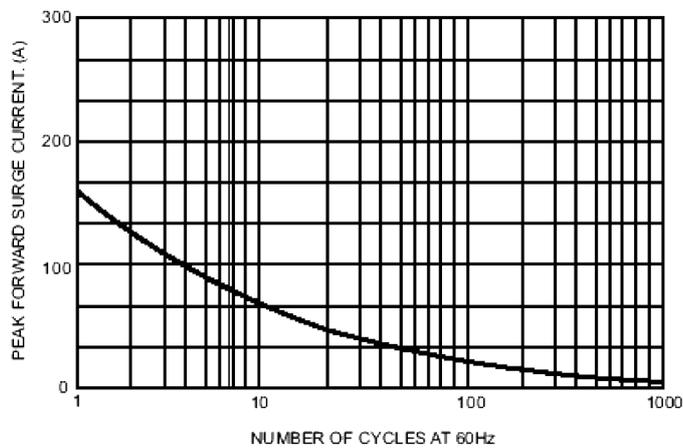


Figure 4 Maximum Non-Repetitive Forward Surge Current



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Figure 5 Typical Forward Characteristics

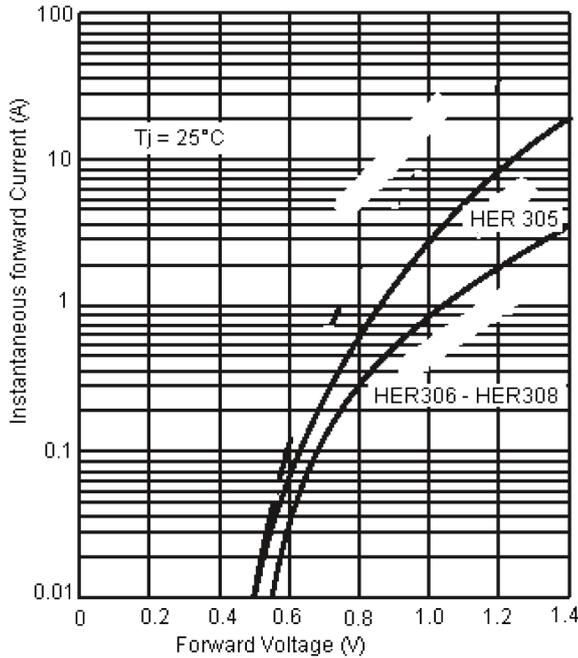
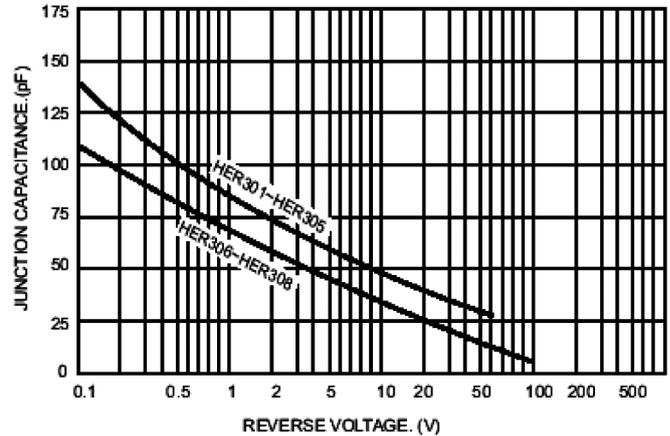


Figure 6 Typical Junction Capacitance



## Part Number Table

Description	V <sub>rrm</sub> max. (V)	I <sub>F</sub> (av) (A)	I <sub>FSM</sub> (A)	t <sub>rr</sub> maxi. (ns)	V <sub>F</sub> (V) at I <sub>F</sub> = 3A	Length (mm)	Diameter (mm)	Package	Part Number
Diode, Fast, 3A, 800V	800	-	-	-	-	9.5	5.6	DO-201AD	HER307
Diode, Fast, 3A, 400V	400	3	150	50	1				HER305

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