

### Switchmode Power Rectifiers

... Designed for use in switching power supplies, inverters and as free wheeling diodes. These state-of-the-art devices have the following features:

- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* High-Switching Speed 50 & 75 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-0

**HIGH EFFICIENCY  
RECTIFIERS**

**3.0 AMPERES  
50 -- 400 VOLTS**

**DO-201AD**

### MAXIMUM RATINGS

Characteristic	Symbol	HER					Unit
		301	302	303	304	305	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	200	300	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	210	280	V
Average Rectifier Forward Current	$I_O$	3.0					A
Non-Repetitive Peak Surge Current ( Surge applied at rate load conditions halfwave, single phase, 60Hz )	$I_{FSM}$	50					A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	- 65 to + 150					°C

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	HER					Unit
		301	302	303	304	305	
Maximum Instantaneous Forward Voltage ( $I_F=3.0$ Amp, $T_C = 25$ °C)	$V_F$	1.00		1.30			V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C = 25$ °C) ( Rated DC Voltage, $T_C = 125$ °C)	$I_R$	5.0 70					uA
Reverse Recovery Time ( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A )	$T_{rr}$	50			75		ns
Typical Junction Capacitance ( Reverse Voltage of 4 volts & f=1 MHz)	$C_P$	55			45		pF

DIM	MILLMETERS	
	MIN	MAX
A	5.00	5.60
B	25.40	---
C	8.50	9.50
D	1.20	1.30

CASE---  
Transfer molded  
plastic

POLARITY---  
Cathode indicated  
polarity band

# HER301 Thru HER305

FIG-1 TYPICAL FORWARD CHARACTERISTICS

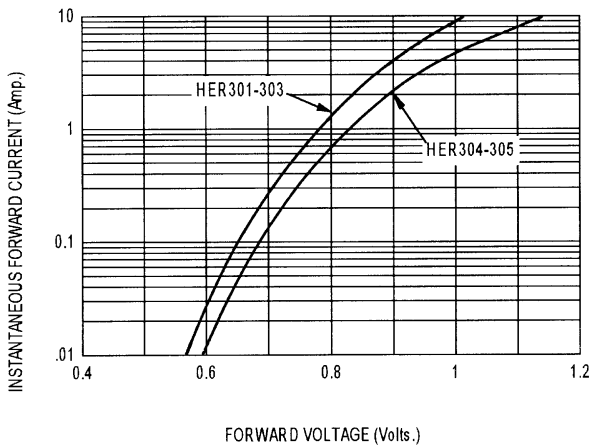


FIG-3 FORWARD CURRENT DERATING CURVE

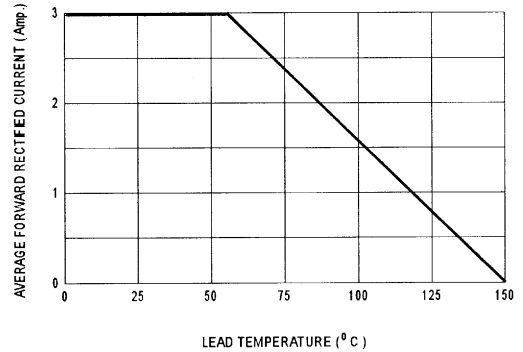


FIG-4 TYPICAL JUNCTION CAPACITANCE

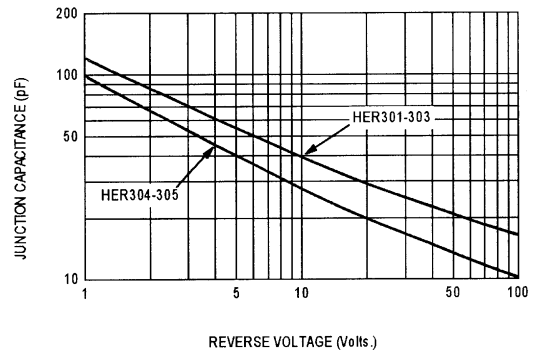


FIG-2 TYPICAL REVERSE CHARACTERISTICS

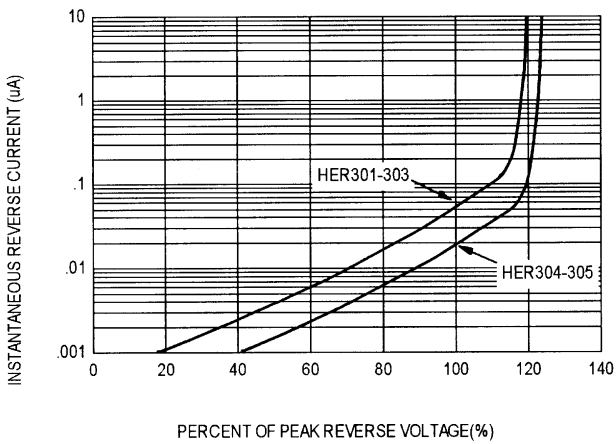
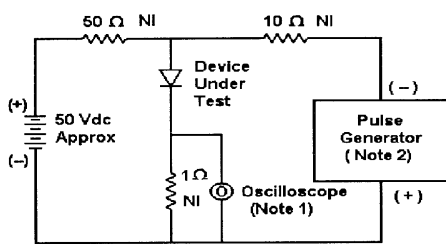
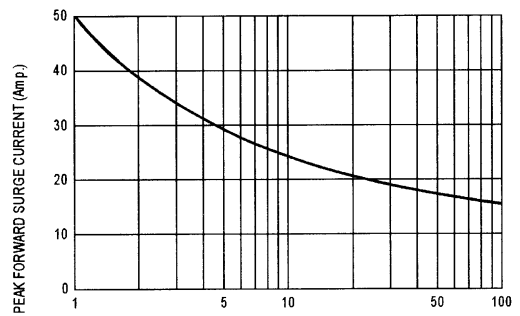
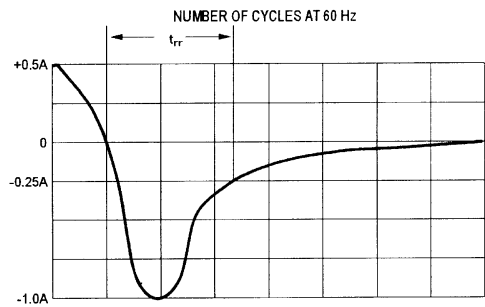


FIG-5 PEAK FORWARD SURGE CURRENT



- Notes:  
 1. Rise Time = 7 ns max. Input Impedance = 1 M Ω, 22 pF  
 2. Rise Time = 10 ns max. Input Impedance = 50 Ω



Set time base for 20 ns/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram