

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-O

**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, $T_C=25\text{ }^{\circ}\text{C}$)	V_F	1.00			1.30		V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25\text{ }^{\circ}\text{C}$) (Rated DC Voltage, $T_C=125\text{ }^{\circ}\text{C}$)	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	MILLIMETERS	
	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

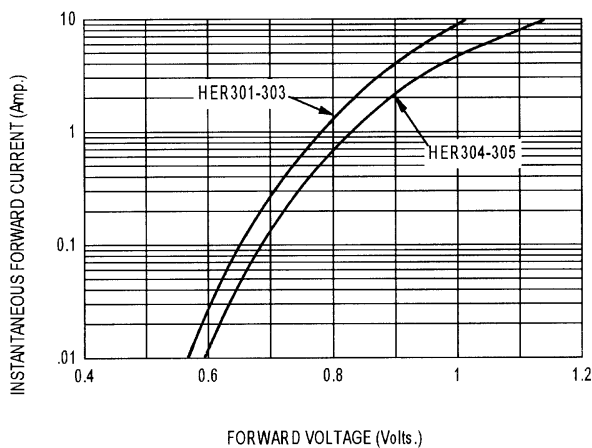


FIG-2 TYPICAL REVERSE CHARACTERISTICS

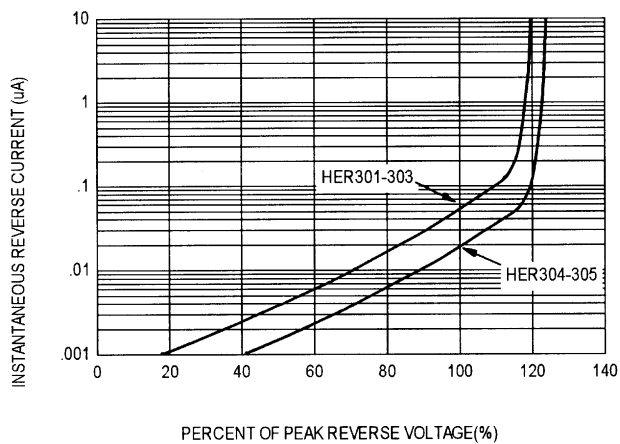


FIG-3 FORWARD CURRENT DERATING CURVE

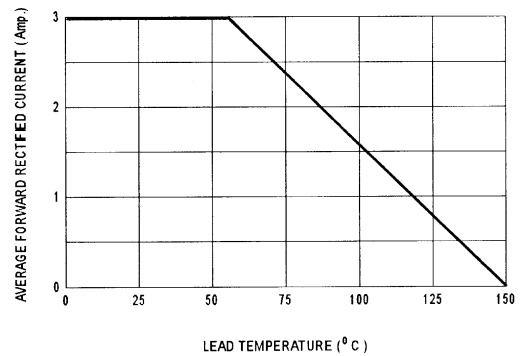


FIG-4 TYPICAL JUNCTION CAPACITANCE

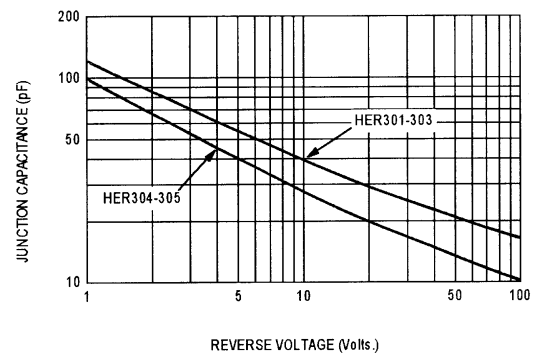
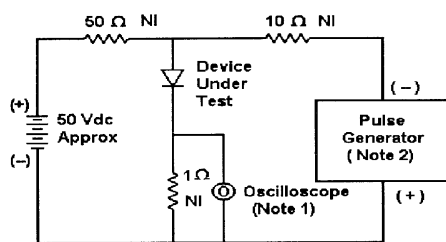
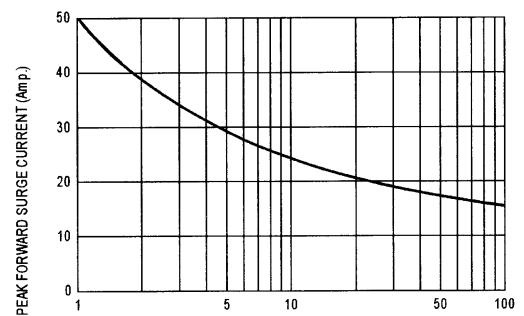
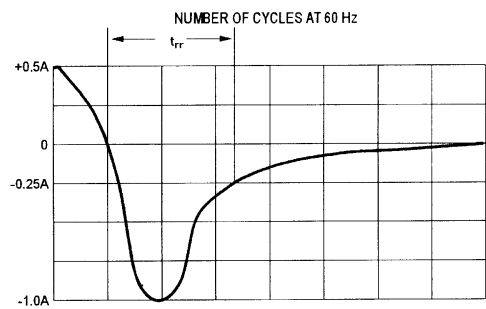


FIG-5 PEAK FORWARD SURGE CURRENT



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