

### 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 100 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

**HIGH EFFICIENCY  
RECTIFIERS**

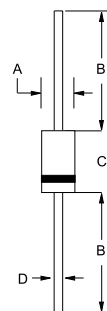
**1.0 AMPERES  
600 -- 1000 VOLTS**



**DO-41**

### MAXIMUM RATINGS

| Characteristic                                                                                                 | Symbol                          | HER106        | HER107 | HER108 | Unit |
|----------------------------------------------------------------------------------------------------------------|---------------------------------|---------------|--------|--------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                         | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 600           | 800    | 1000   | V    |
| RMS Reverse Voltage                                                                                            | $V_{R(RMS)}$                    | 420           | 560    | 700    | V    |
| Average Rectifier Forward Current                                                                              | $I_O$                           | 1.0           |        |        | A    |
| Non-Repetitive Peak Surge Current<br>( Surge applied at rate load conditions<br>halfwave, single phase, 60Hz ) | $I_{FSM}$                       | 30            |        |        | A    |
| Operating and Storage Junction<br>Temperature Range                                                            | $T_J, T_{stg}$                  | - 65 to + 150 |        |        | °C   |



| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | 2.00        | 2.70 |
| B   | 25.40       | ---  |
| C   | 4.10        | 5.20 |
| D   | 0.70        | 0.90 |

### ELECTRICAL CHARACTERISTICS

| Characteristic                                                                                                     | Symbol   | HER106    | HER107 | HER108 | Unit |
|--------------------------------------------------------------------------------------------------------------------|----------|-----------|--------|--------|------|
| Maximum Instantaneous Forward Voltage<br>( $I_F = 1.0$ Amp, $T_C = 25$ °C)                                         | $V_F$    | 1.50      |        | 1.75   | V    |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C = 25$ °C)<br>( Rated DC Voltage, $T_C = 125$ °C) | $I_R$    | 5.0<br>50 |        |        | uA   |
| Reverse Recovery Time<br>( $I_F = 0.5$ A, $I_R = 1.0$ , $t_{rr} = 0.25$ A )                                        | $T_{rr}$ | 100       |        |        | ns   |
| Typical Junction Capacitance<br>( Reverse Voltage of 4 volts & f=1 MHz)                                            | $C_P$    | 15        | 10     |        | pF   |

CASE---  
Transfer molded  
plastic

POLARITY---  
Cathode indicated  
polarity band

# HER106 Thru HER108

FIG-1 TYPICAL FORWARD CHARACTERISTICS

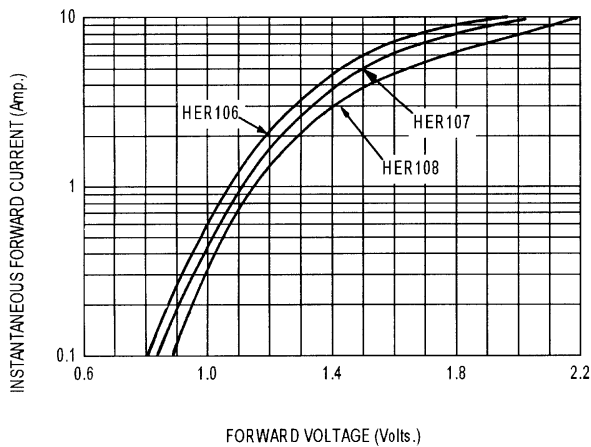


FIG-2 TYPICAL REVERSE CHARACTERISTICS

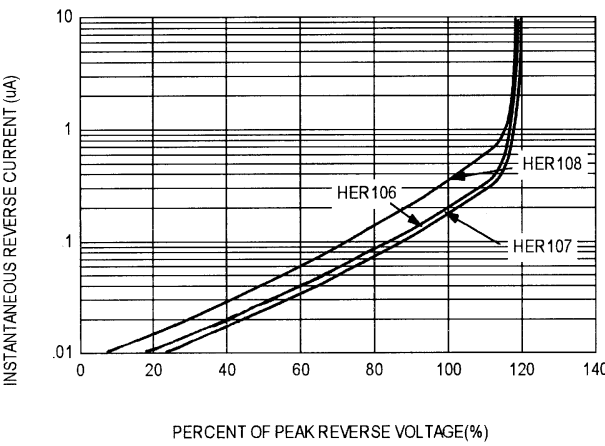


FIG-3 FORWARD CURRENT DERATING CURVE

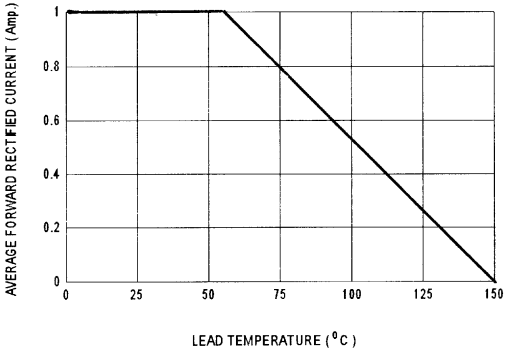


FIG-4 TYPICAL JUNCTION CAPACITANCE

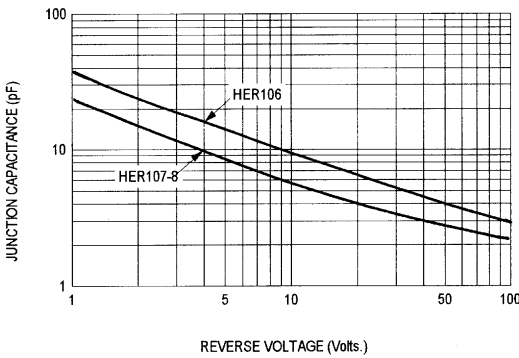
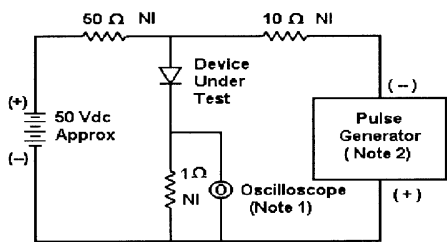
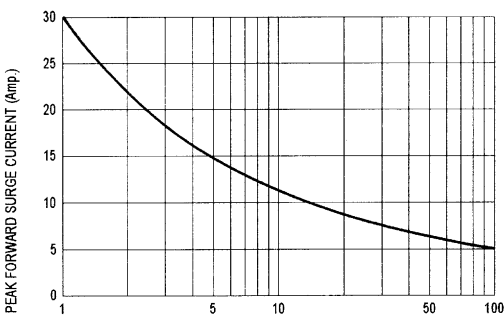
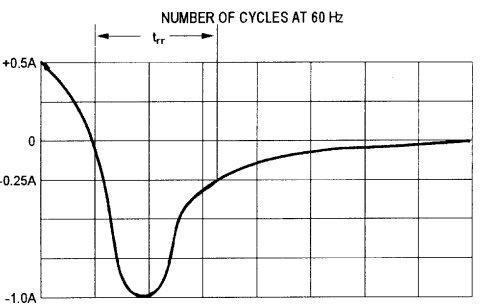


FIG-5 PEAK FORWARD SURGE CURRENT



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



Set time base for 20/50 ns/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram