

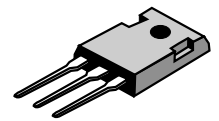
### Switchmode Dual High Efficiency Power Rectifiers

... 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 75 & 100 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory

**HIGH EFFICIENCY  
RECTIFIERS**

**30 AMPERES  
300 -- 600 VOLTS**



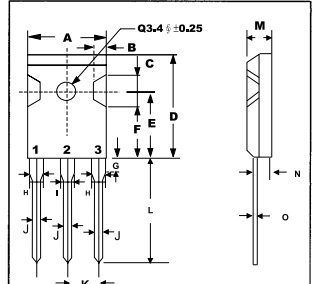
**TO-247 (3P)**

#### MAXIMUM RATINGS

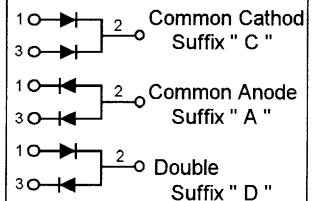
| Characteristic   | Symbol                                 | H30D          |     |     |     | Unit |
|--|--|---------------|-----|-----|-----|------|
|  |  | 30            | 40  | 50  | 60  |      |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                         | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$        | 300           | 400 | 500 | 600 | V    |
| RMS Reverse Voltage  | $V_{R(RMS)}$                           | 210           | 280 | 350 | 420 | V    |
| Average Rectifier Forward Current<br>Per Leg<br>Per Total Device   | $I_{F(AV)}$<br>$T_c=125^\circ\text{C}$ | 15<br>30      |     |     |     | A    |
| Peak Repetitive Forward Current<br>( Rate $V_R$ , Square Wave, 20kHz, $T_c=125^\circ\text{C}$ )                | $I_{FM}$                               | 30            |     |     |     | A    |
| Non-Repetitive Peak Surge Current<br>( Surge applied at rate load conditions<br>halfwave, single phase, 60Hz ) | $I_{FSM}$                              | 200           |     |     |     | A    |
| Operating and Storage Junction<br>Temperature Range  | $T_J, T_{stg}$                         | - 65 to + 150 |     |     |     | °C   |

#### ELECTRICAL CHARACTERISTICS

| Characteristic   | Symbol   | H30D         |    |              |     | Unit |
|--|----------|--------------|----|--------------|-----|------|
|  |          | 30           | 40 | 50           | 60  |      |
| Maximum Instantaneous Forward Voltage<br>( $I_F=15$ Amp, $T_c=25^\circ\text{C}$ )<br>( $I_F=15$ Amp, $T_c=100^\circ\text{C}$ )         | $V_F$    | 1.30<br>1.16 |    | 1.50<br>1.37 |     | V    |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_c=25^\circ\text{C}$ )<br>( Rated DC Voltage, $T_c=125^\circ\text{C}$ ) | $I_R$    | 10<br>700    |    |              |     | uA   |
| Reverse Recovery Time<br>( $I_F=0.5$ A, $I_R=1.0$ , $I_{rr}=0.25$ A )  | $T_{rr}$ | 75           |    |              | 100 | ns   |
| Typical Junction Capacitance<br>( Reverse Voltage of 4 volts & f=1 MHz)  | $C_p$    | 150          |    | 120          |     | pF   |



| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | --          | 16.2 |
| B   | 1.7         | 2.7  |
| C   | 5.0         | 6.0  |
| D   | --          | 23.0 |
| E   | 14.8        | 15.2 |
| F   | 11.7        | 12.7 |
| G   | --          | 4.5  |
| H   | --          | 2.5  |
| I   | --          | 3.5  |
| J   | 1.1         | 1.4  |
| K   | 5.25        | 5.65 |
| L   | 19          | --   |
| M   | 4.7         | 5.3  |
| N   | 2.8         | 3.2  |
| O   | 0.45        | 0.85 |



# H30D30 Thru H30D60

FIG-1 TYPICAL FORWARD CHARACTERISTICS

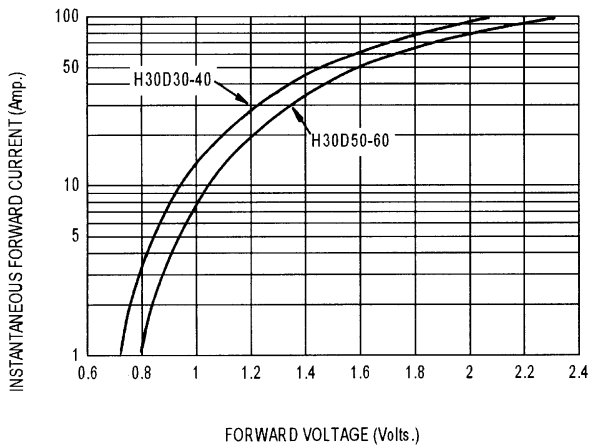


FIG-2 TYPICAL REVERSE CHARACTERISTICS

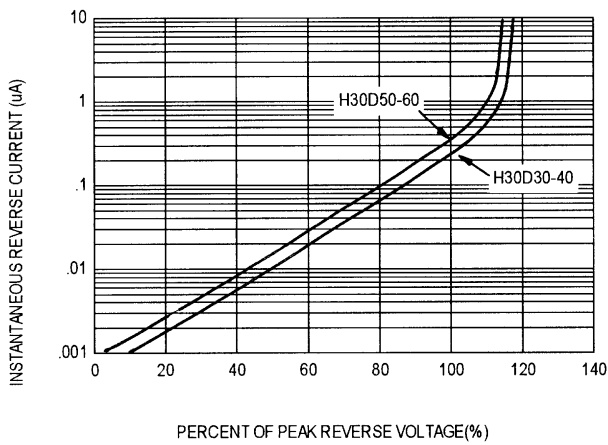


FIG-3 FORWARD CURRENT DERATING CURVE

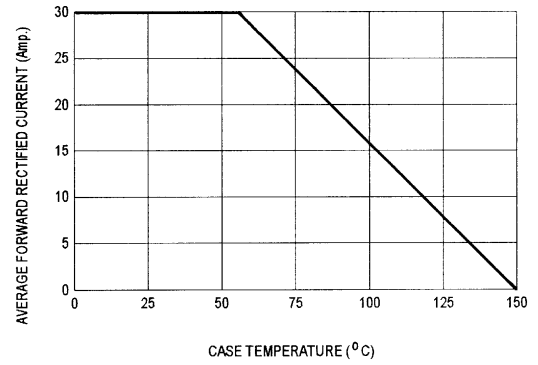


FIG-4 TYPICAL JUNCTION CAPACITANCE

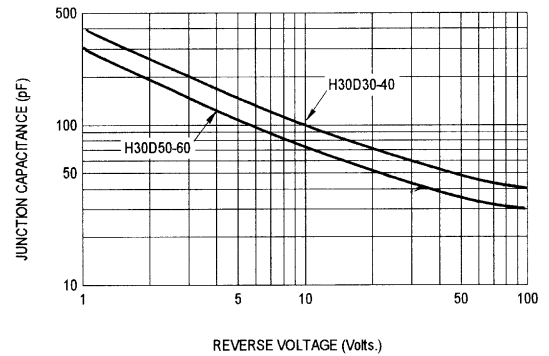
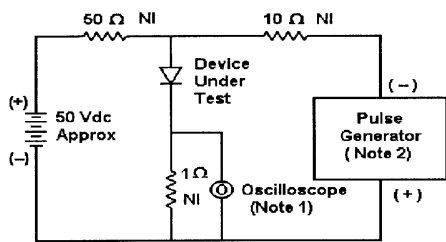
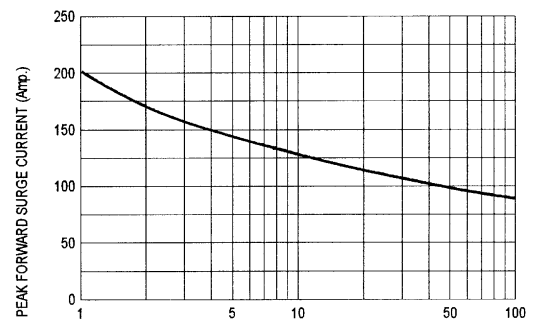
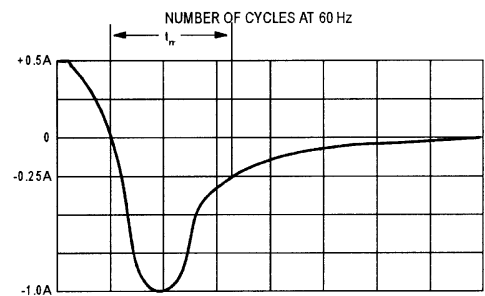


FIG-5 PEAK FORWARD SURGE CURRENT



- 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 20/50 ns/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram