

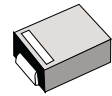
**Surface Mount
High Efficiency Power Rectifiers**

Ideally suited for high voltage, high frequency rectification, or as free wheeling and protection diodes in surface mount applications where compact size and weight are critical to the system.

- * Low Power Loss, High efficiency
- * Glass Passivated chips junction
- * 150 °C Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction
- * Low Forward Voltage Drop , High Current Capability
- * High-Switching Speed 50 & 75 Nanosecond Recovery Time
- * Small Compact Surface Mountable Package with J-Bend Lead
- * Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

**HIGH EFFICIENCY
RECTIFIERS**

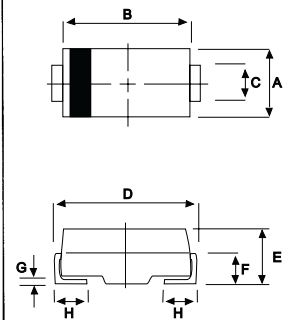
**5.0 AMPERES
50 -- 400 VOLTS**



DO-214AA(SMB)

MAXIMUM RATINGS

| Characteristic | Symbol | MH51 | MH52 | MH53 | MH54 | MH55 | Unit |
|--|---------------------------------|---------------|------|------|------|------|------|
| 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 | 5.0 | | | | | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz) | I_{FSM} | 100 | | | | | A |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | - 65 to + 150 | | | | | °C |



| DIM | MILLIMETERS | |
|-----|-------------|------|
| | MIN | MAX |
| A | 3.30 | 3.90 |
| B | 4.20 | 4.60 |
| C | 1.80 | 2.20 |
| D | 4.90 | 5.60 |
| E | 1.90 | 2.50 |
| F | --- | 1.30 |
| G | --- | 0.22 |
| H | 0.85 | 1.45 |

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | MH51 | MH52 | MH53 | MH54 | MH55 | Unit |
|---|----------|-----------|------|------|------|------|------|
| Maximum Instantaneous Forward Voltage ($I_F=5.0$ 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 |

CASE---
Transfer molded
plastic

POLARITY---
Cathode indicated
polarity band

MH51 Thru MH55

FIG-1 TYPICAL FORWARD CHARACTERISTICS

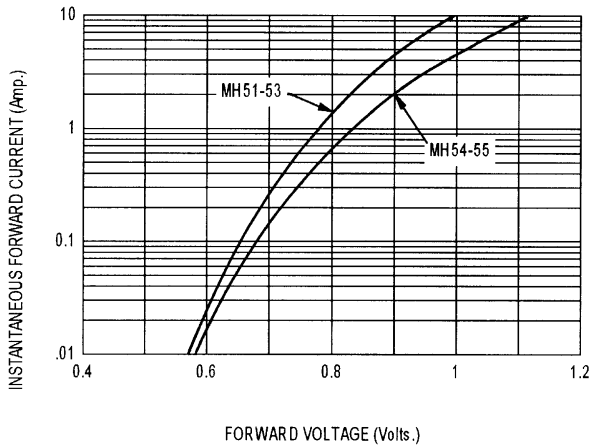


FIG-2 TYPICAL REVERSE CHARACTERISTICS

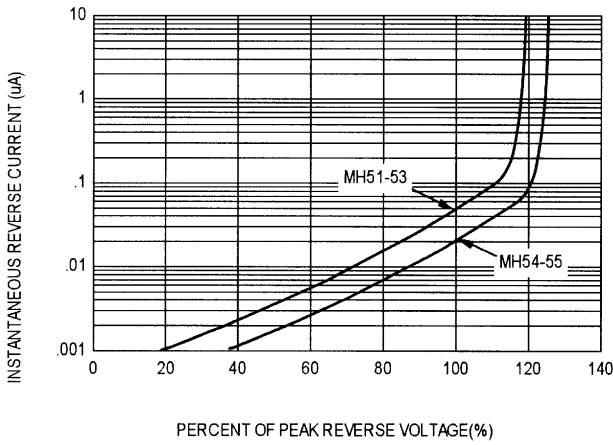


FIG-3 FORWARD CURRENT DERATING CURVE

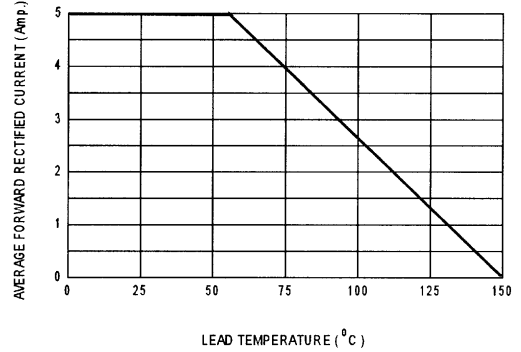


FIG-4 TYPICAL JUNCTION CAPACITANCE

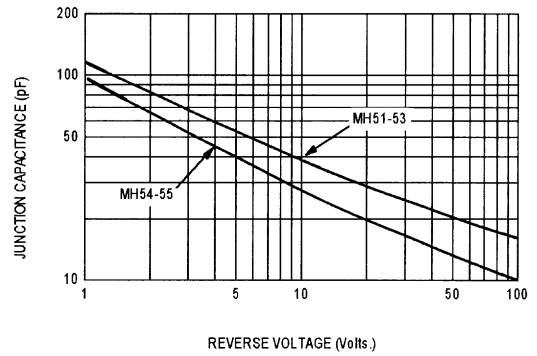
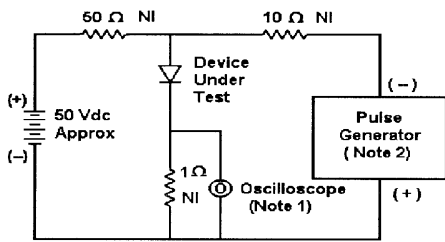
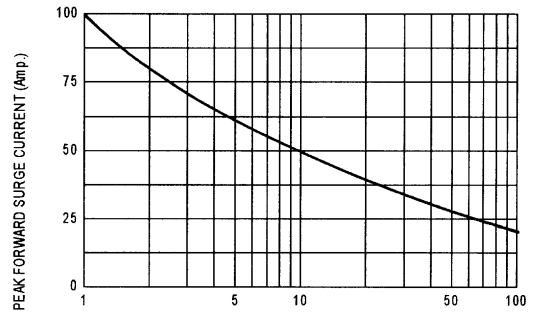
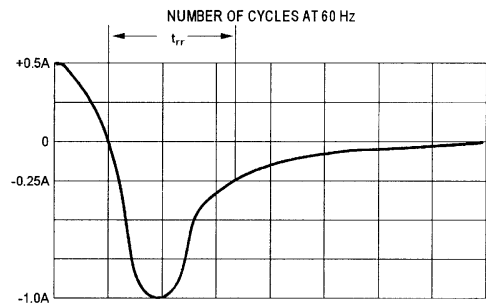


FIG-5 PEAK FORWARD SURGE CURRENT



- 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