

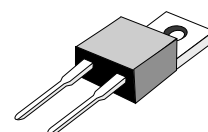
## Schottky Barrier Rectifiers

Using the Schottky Barrier principle with a Molybdenum barrier metal. These state-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes.

- \* Low Forward Voltage.
- \* Low Switching noise.
- \* High Current Capacity
- \* Guarantee Reverse Avalanche.
- \* Guard-Ring for Stress Protection.
- \* Low Power Loss & High efficiency.
- \* 125 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction.
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

### SCHOTTKY BARRIER RECTIFIERS

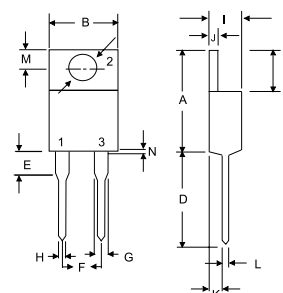
**5 AMPERES  
30 -- 60 VOLTS**



**TO-220A**

### MAXIMUM RATINGS

| Characteristic                                                                                            | Symbol                          | S05A          |    |    |    |    |    | Unit |
|-----------------------------------------------------------------------------------------------------------|---------------------------------|---------------|----|----|----|----|----|------|
|                                                                                                           |                                 | 30            | 35 | 40 | 45 | 50 | 60 |      |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                    | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 70            | 35 | 40 | 45 | 50 | 60 | V    |
| RMS Reverse Voltage                                                                                       | $V_{R(RMS)}$                    | 21            | 24 | 28 | 31 | 35 | 42 | V    |
| Average Rectifier Forward Current                                                                         | $I_{F(AV)}$                     | 5.0           |    |    |    |    |    | A    |
| Peak Repetitive Forward Current<br>(Rate $V_R$ , Square Wave, 20kHz)                                      | $I_{FRM}$                       | 10            |    |    |    |    |    | A    |
| Non-Repetitive Peak Surge Current<br>(Surge applied at rate load conditions halfwave, single phase, 60Hz) | $I_{FSM}$                       | 125           |    |    |    |    |    | A    |
| Operating and Storage Junction Temperature Range                                                          | $T_J, T_{stg}$                  | - 65 to + 125 |    |    |    |    |    | °C   |



| DIM | MILLMETERS |       |
|-----|------------|-------|
|     | MIN        | MAX   |
| A   | 14.68      | 15.32 |
| B   | 9.78       | 10.42 |
| C   | 6.01       | 6.52  |
| D   | 13.06      | 14.62 |
| E   | 3.57       | 4.07  |
| F   | 4.83       | 5.33  |
| G   | 1.12       | 1.36  |
| H   | 0.72       | 0.96  |
| I   | 4.22       | 4.98  |
| J   | 1.14       | 1.36  |
| K   | 2.20       | 2.97  |
| L   | 0.33       | 0.55  |
| M   | 2.48       | 2.98  |
| N   | --         | 1.00  |
| O   | 3.70       | 3.90  |

### ELECTRICAL CHARACTERISTICS

| Characteristic                                                                                                   | Symbol | S05A         |    |    |    |    |    | Unit |
|------------------------------------------------------------------------------------------------------------------|--------|--------------|----|----|----|----|----|------|
|                                                                                                                  |        | 30           | 35 | 40 | 45 | 50 | 60 |      |
| Maximum Instantaneous Forward Voltage<br>( $I_F=5.0$ Amp, $T_c = 25$ °C)<br>( $I_F=5.0$ Amp, $T_c = 125$ °C)     | $V_F$  | 0.55<br>0.48 |    |    |    |    |    | 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    |    |    |    |    |    | mA   |

1 2 Case Positive  
3 CASE Suffix "P"

1 2 Case Negative  
3 CASE Suffix "R"

# S5A30 thru S05A45

FIG-1 FORWARD CURRENT DERATING CURVE

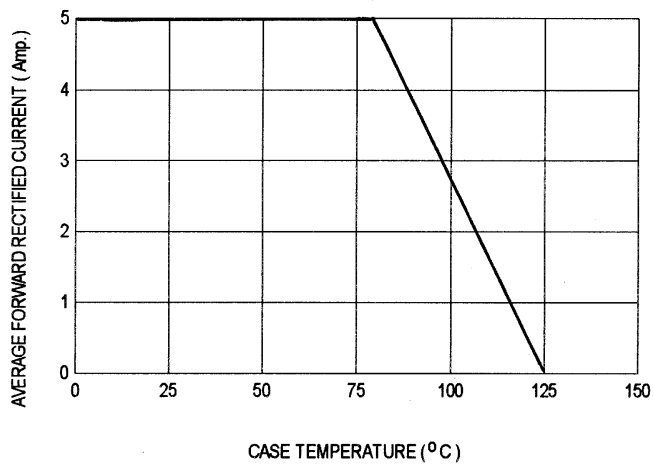


FIG-2 TYPICAL FORWARD CHARACTERISTICS

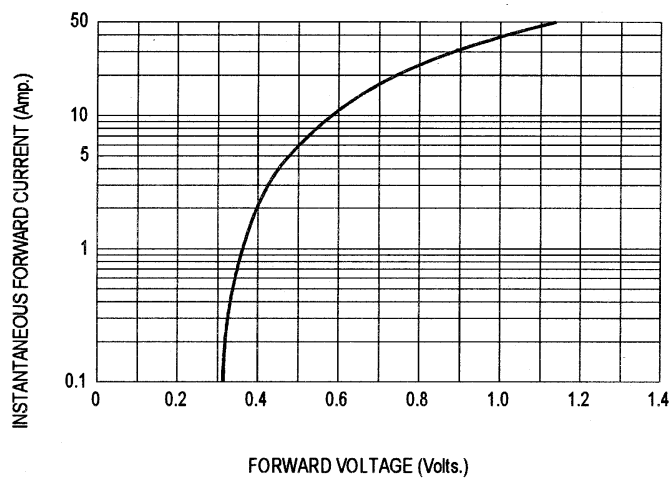


FIG-3 TYPICAL REVERSE CHARACTERISTICS

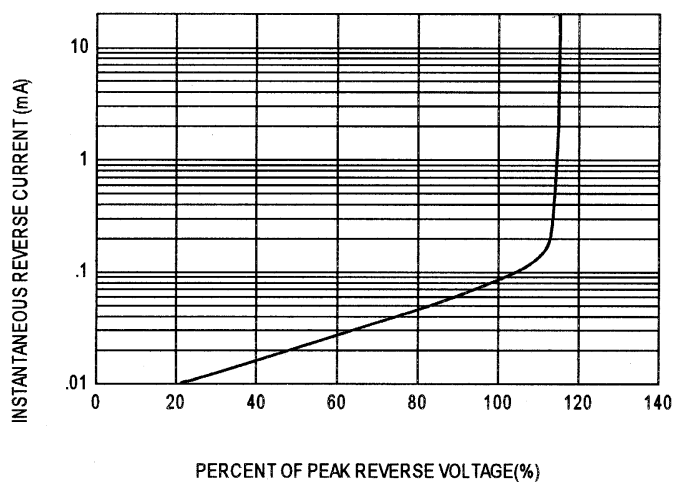


FIG-4 TYPICAL JUNCTION CAPACITANCE

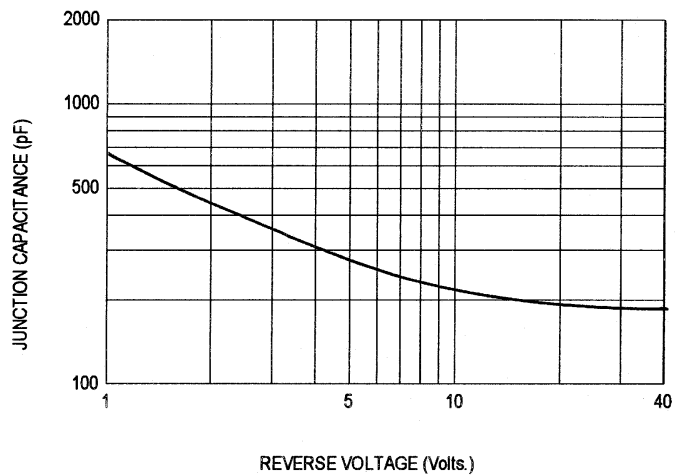
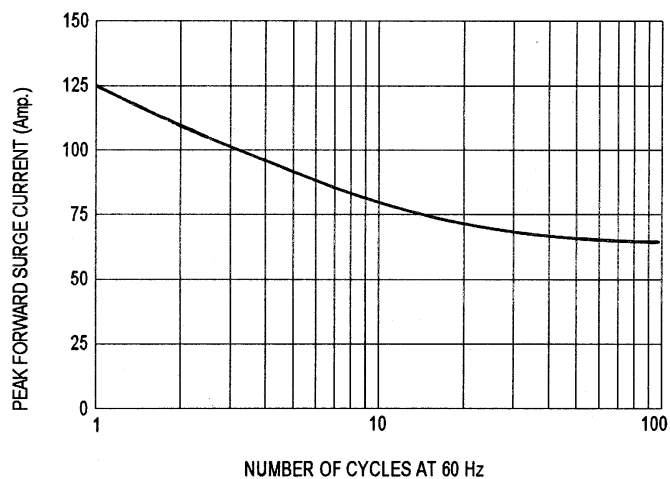


FIG-5 PEAK FORWARD SURGE CURRENT



S05A50 , S05A60

FIG-1 FORWARD CURRENT DERATING CURVE

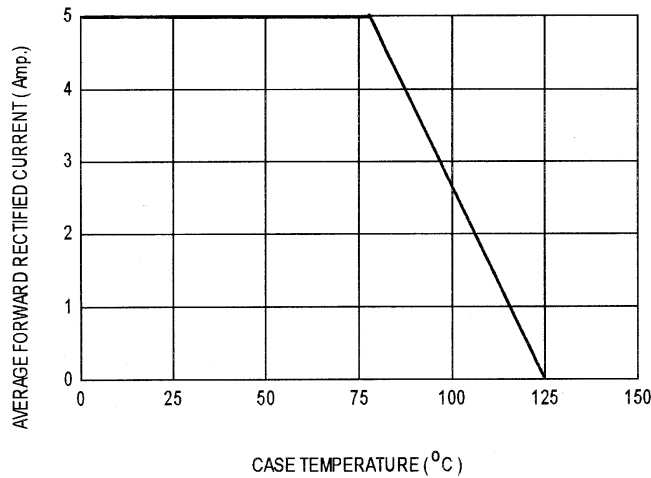


FIG-2 TYPICAL FORWARD CHARACTERISTICS

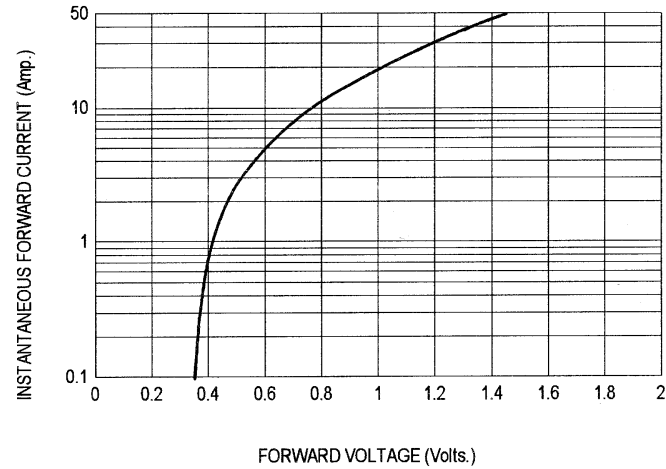


FIG-3 TYPICAL REVERSE CHARACTERISTICS

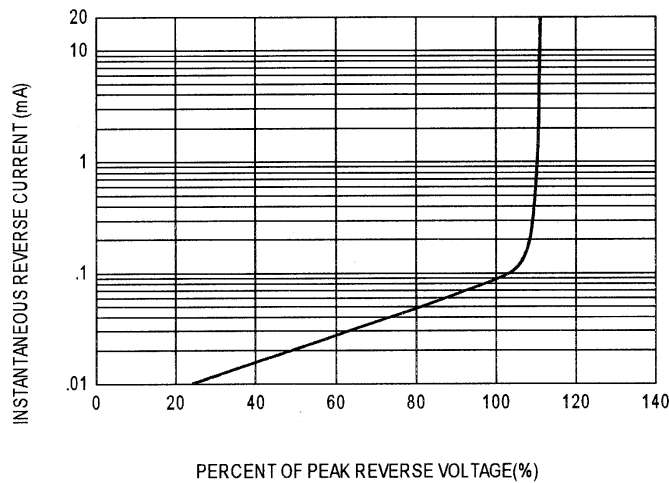


FIG-4 TYPICAL JUNCTION CAPACITANCE

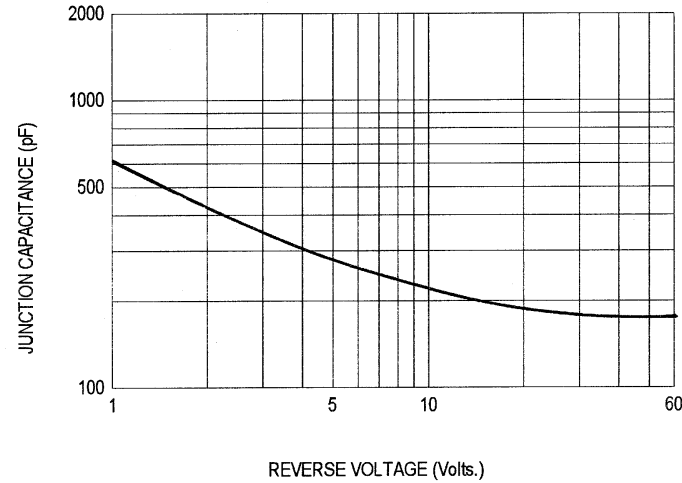


FIG-5 PEAK FORWARD SURGE CURRENT

