

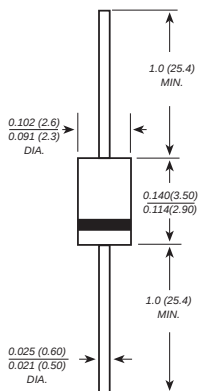


# 1S20 THRU 1SA0

## SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 20 to 100 Volts Forward Current - 1.0 Ampere

R-1



Dimensions in inches and (millimeters)

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds, 0.375" (9.5mm) lead length,  
5 lbs. (2.3kg) tension

### MECHANICAL DATA

**Case:** R-1 molded plastic body

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.007 ounce, 0.20 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| MDD Catalog Number                                                                                              | SYMBOLS           | 1S 20       | 1S 30 | 1S 40 | 1S 50       | 1S 60 | 1S 70 | 1S 80 | 1S 90 | 1S A0 | UNITS |
|-----------------------------------------------------------------------------------------------------------------|-------------------|-------------|-------|-------|-------------|-------|-------|-------|-------|-------|-------|
| Maximum repetitive peak reverse voltage                                                                         | V <sub>RRM</sub>  | 20          | 30    | 40    | 50          | 60    | 70    | 80    | 90    | 100   | VOLTS |
| Maximum RMS voltage                                                                                             | V <sub>RMS</sub>  | 14          | 21    | 28    | 35          | 42    | 49    | 56    | 63    | 70    | VOLTS |
| Maximum DC blocking voltage                                                                                     | V <sub>DC</sub>   | 20          | 30    | 40    | 50          | 60    | 70    | 80    | 90    | 100   | VOLTS |
| Maximum average forward rectified current<br>0.375”(9.5mm) lead length(see fig.1)                               | I <sub>(AV)</sub> | 1.0         |       |       |             |       |       |       |       |       | Amp   |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method)          | I <sub>FSM</sub>  | 40.0        |       |       |             |       |       |       |       |       | Amps  |
| Maximum instantaneous forward voltage at 1.0A                                                                   | V <sub>F</sub>    | 0.55        |       |       | 0.70        |       | 0.85  |       |       | Volts |       |
| Maximum DC reverse current      T <sub>A</sub> =25°C<br>at rated DC blocking voltage      T <sub>A</sub> =100°C | I <sub>R</sub>    | 0.5         |       |       |             |       |       |       |       |       | mA    |
|                                                                                                                 |                   | 10.0        |       |       |             |       |       |       |       |       |       |
| Typical junction capacitance (NOTE 1)                                                                           | C <sub>J</sub>    | 110         |       |       | 80          |       |       |       |       |       | pF    |
| Typical thermal resistance (NOTE 2)                                                                             | R <sub>θJA</sub>  | 50.0        |       |       |             |       |       |       |       |       | °C/W  |
| Operating junction temperature range                                                                            | T <sub>J</sub>    | -65 to +125 |       |       | -65 to +150 |       |       |       |       |       | °C    |
| Storage temperature range                                                                                       | T <sub>STG</sub>  | -65 to +150 |       |       |             |       |       |       |       |       | °C    |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

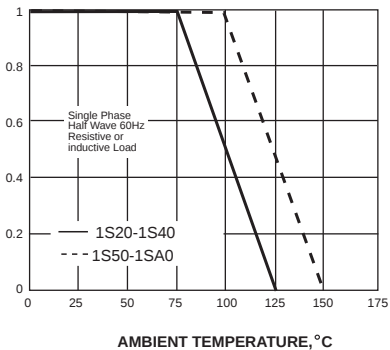
2. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

MDD ELECTRONIC

# RATINGS AND CHARACTERISTIC CURVES 1S20 THRU 1SA0

AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

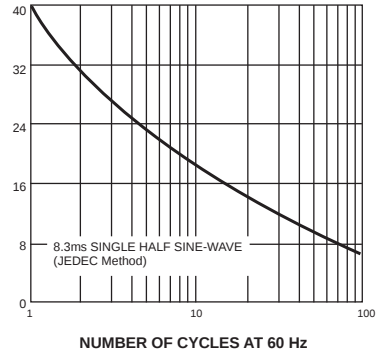
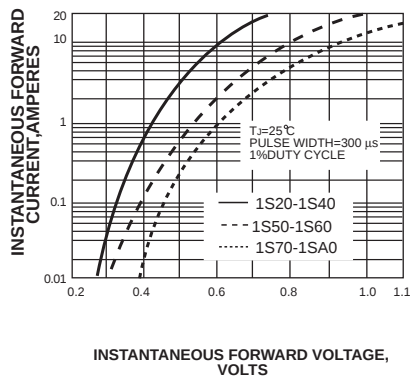


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT,  
MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

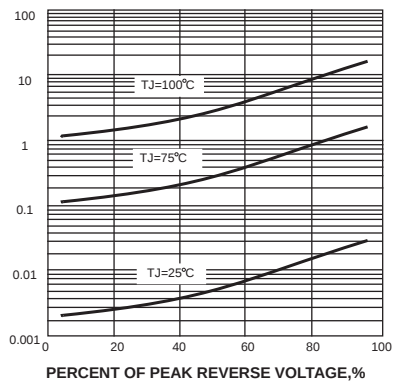
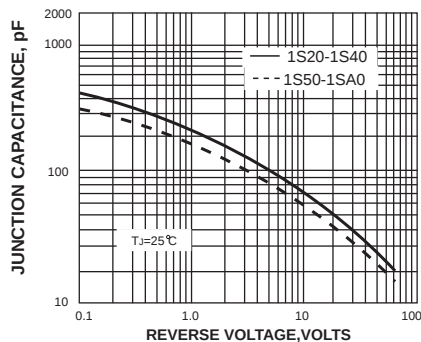


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

