

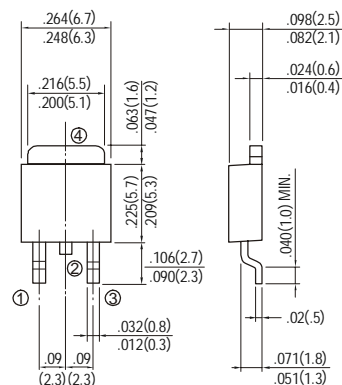
# SD1020S Thru SD10100S

## DPAK SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER VOLTAGE - 20 to 100 Volts CURRENT - 10.0 Amperes

### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- For surface mounted applications
- Low profile package
- Built-in strain relief
- Metal to silicon rectifier majority carrier conduction
- Low power loss, High efficiency
- High current capability, low  $V_F$
- High surge capacity
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 260°C/10 seconds at terminals

### DPAK / TO-252



### MECHANICAL DATA

Case: D PAK/TO-252 molded plastic

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode

Standard packaging: 16mm tape (EIA-481)

Weight: 0.015 ounce, 0.4 gram.

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Resistive or inductive load.

|  | SYMBOLS                            | SD1020S     | SD1030S   | SD1040S   | SD1050S   | SD1060S   | SD1080S   | SD10100S  | UNITS                       |
|--|------------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------------|
| Maximum Recurrent Peak Reverse Voltage   | $V_{RRM}$                          | 20          | 30        | 40        | 50        | 60        | 80        | 100       | Volts                       |
| Maximum RMS Voltage  | $V_{RMS}$                          | 14          | 21        | 28        | 35        | 42        | 56        | 70        | Volts                       |
| Maximum DC Blocking Voltage  | $V_{DC}$                           | 20          | 30        | 40        | 50        | 60        | 80        | 100       | Volts                       |
| Maximum Average Forward Rectified Current at $T_c=75^\circ\text{C}$  | $I_{(AV)}$                         | 5.0         | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | Amps                        |
| Peak Forward Surge Current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC method)                | $I_{FSM}$                          | 200         | 200       | 200       | 200       | 200       | 200       | 200       | Amps                        |
| Maximum Instantaneous Forward Voltage at 10.0A (Note 1)  | $V_F$                              | 0.55        | 0.55      | 0.55      | 0.75      | 0.75      | 0.85      | 0.85      | Volts                       |
| Maximum DC Reverse Current (Note 1) $T_A=25^\circ\text{C}$<br>at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$ | $I_R$                              | 0.2<br>20   | 0.2<br>20 | 0.2<br>20 | 0.2<br>20 | 0.2<br>20 | 0.2<br>20 | 0.2<br>20 | mA                          |
| Maximum Thermal Resistance (Note 2)  | $R_{\theta JC}$<br>$R_{\theta JA}$ | 6<br>80     | 6<br>80   | 6<br>80   | 6<br>80   | 6<br>80   | 6<br>80   | 6<br>80   | $^\circ\text{C} / \text{W}$ |
| Operating Junction Temperature Range   | $T_J$                              | -55 to +125 |           |           |           |           |           |           | $^\circ\text{C}$            |
| Storage Temperature Range  | $T_{STG}$                          | -65 to +150 |           |           |           |           |           |           | $^\circ\text{C}$            |

#### NOTES:

1. Pulse Test with  $PW=300\mu\text{sec}$ , 2% Duty Cycle.
2. Mounted on P.C. Board with  $14\text{mm}^2$  (.013mm thick) copper pad areas.

## RATING AND CHARACTERISTIC CURVES

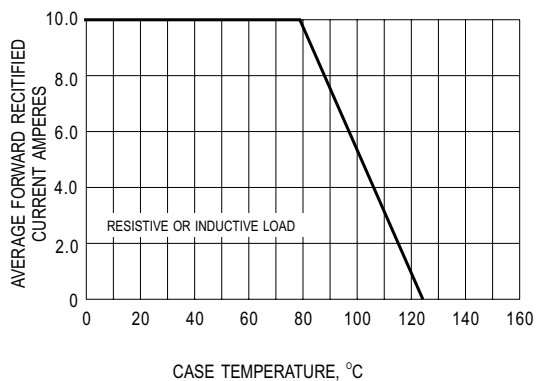


Fig.1- FORWARD CURRENT DERATING CURVE

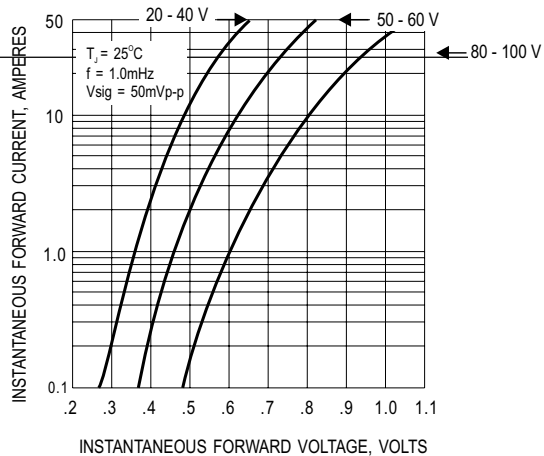


Fig.2- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC

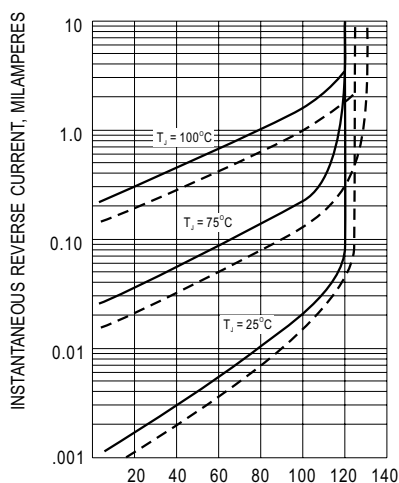


Fig.3- TYPICAL REVERSE CHARACTERISTIC

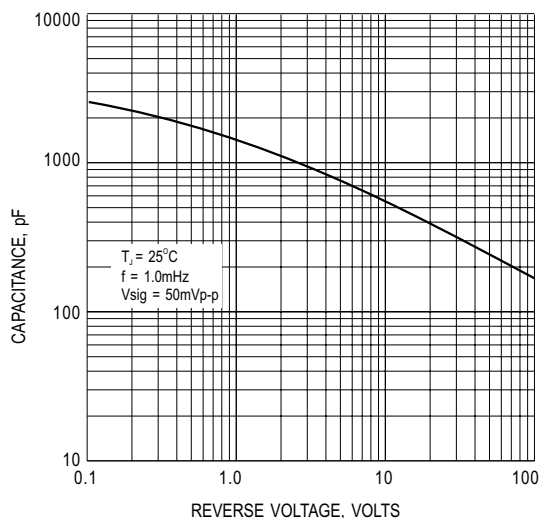


Fig.4- TYPICAL JUNCTION CAPACITANCE

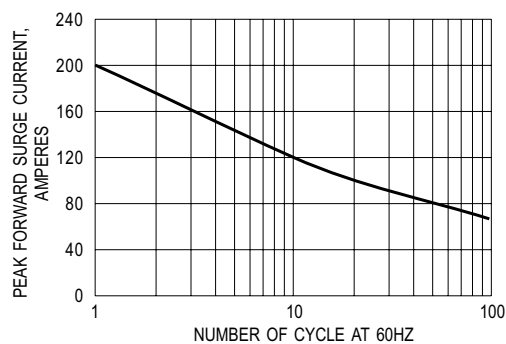


Fig.5- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT