

## SD103A - SD103C

### FEATURES :

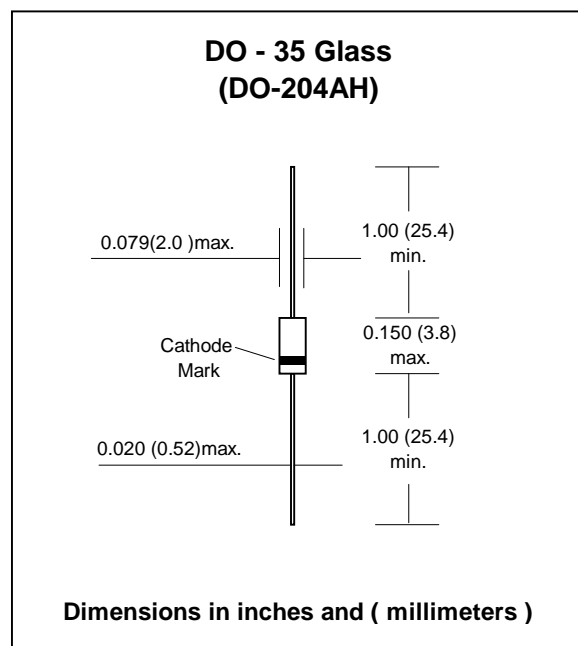
- For general purpose applications
- The SD103 series is a Metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring.
- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications.
- Other applications are click suppression, efficient full wave bridges in telephone subsets, and blocking diodes in rechargeable low voltage battery systems.
- These diodes are also available in the MiniMELF case with type designations LL103A thru LL103C.
- **Pb / RoHS Free**

### MECHANICAL DATA :

Case: DO-35 Glass Case

Weight: approx. 0.13g

## SCHOTTKY BARRIER DIODES



### Maximum Ratings and Thermal Characteristics (Rating at 25 °C ambient temperature unless otherwise specified.)

| Parameter                                  | Symbol          | Value                       | Unit  |
|--------------------------------------------|-----------------|-----------------------------|-------|
| Repetitive Peak Reverse Voltage            | SD103A          | 40                          | V     |
|                                            | SD103B          | 30                          |       |
|                                            | SD103C          | 20                          |       |
| Single Cycle Surge 60 Hz Sine Wave         | $I_{FSM}$       | 15                          | A     |
| Power Dissipation (Infinite Heatsink)      | $P_D$           | 400 <sup>(1)</sup>          | mW    |
| Thermal Resistance Junction to Ambient Air | $R_{\theta JA}$ | 0.3 <sup>(1)</sup>          | °C/mW |
| Junction Temperature                       | $T_J$           | 125 <sup>(1)</sup>          | °C    |
| Storage temperature range                  | $T_S$           | -55 to + 150 <sup>(1)</sup> | °C    |

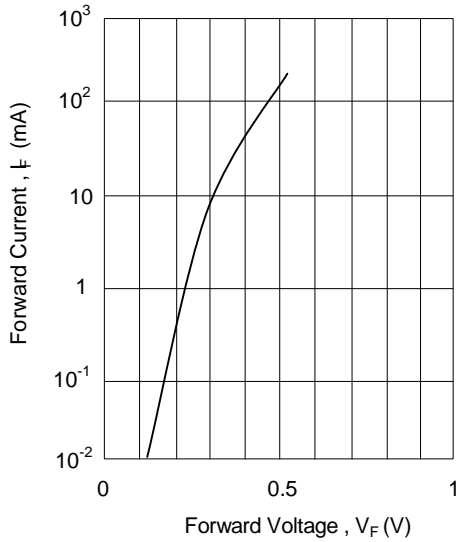
Note: (1) Valid provided that leads at a distance of 4mm from case are kept at ambient temperature.

### Electrical Characteristics ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

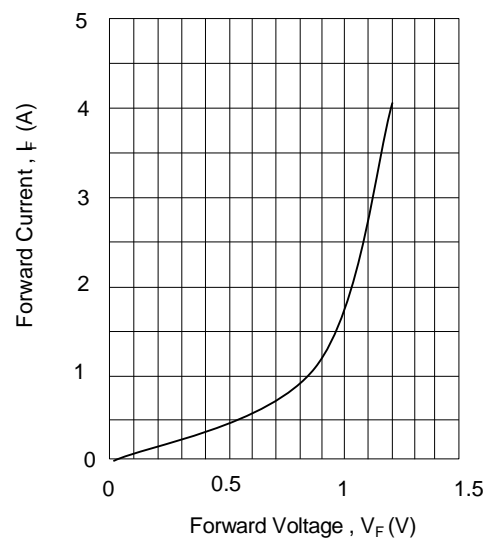
| Parameter             | Symbol    | Test Condition                                            | Min | Typ | Max  | Unit          |
|-----------------------|-----------|-----------------------------------------------------------|-----|-----|------|---------------|
| Reverse Current       | SD103A    | $V_R = 30\text{ V}$                                       | -   | -   | 5    | $\mu\text{A}$ |
|                       | SD103B    | $V_R = 20\text{ V}$                                       | -   | -   | 5    |               |
|                       | SD103C    | $V_R = 10\text{ V}$                                       | -   | -   | 5    |               |
| Forward Voltage Drop  | $V_F$     | $I_F = 20\text{mA}$                                       | -   | -   | 0.37 | V             |
|                       |           | $I_F = 200\text{mA}$                                      | -   | -   | 0.6  |               |
| Junction Capacitance  | $C_{tot}$ | $V_R = 0\text{ V}, f = 1\text{MHz}$                       | -   | 50  | -    | pF            |
| Reverse Recovery Time | $T_{rr}$  | $I_F = I_R = 50\text{mA}$ to 200mA<br>recover to $0.1I_R$ | -   | 10  | -    | ns            |

### RATING AND CHARACTERISTIC CURVES ( SD103A - SD103C )

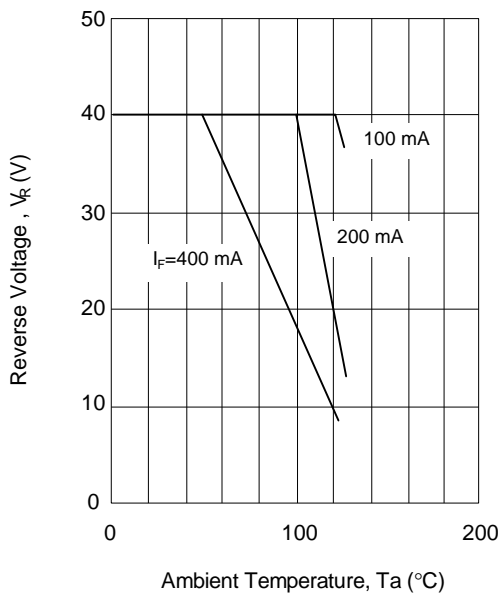
Typical variation of forward current and forward voltage for primary conduction through the schottky barrier



Typical high current forward conduction curve  
 $t_p = 300ms$ , duty cycle = 2%



Blocking voltage deration versus temperature at various average forward currents



Typical variation of reverse current at various temperatures

