

# SD103A ... SD103C

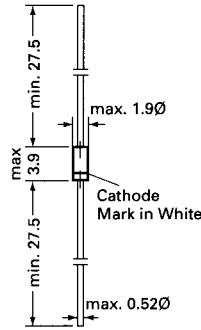
## Silicon Schottky Barrier Diodes

for general purpose applications

The SD103A, B, C 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 uses are for click suppression, efficient full wave bridges in telephone subsets, and as blocking diodes in rechargeable low voltage battery system.

This diode is also available in MiniMELF case with type designation LL103A, B, C.

These diodes are delivered taped.  
Details see "Taping".

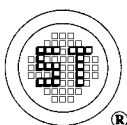


Glass case JEDEC DO-35  
54 A 2 according to DIN 41880

Weight approx. 0.13g  
Dimensions in mm

## Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

|  |               | Symbol    | Value             | Unit |
|--|---------------|-----------|-------------------|------|
| Peak Reverse Voltage   | <b>SD103A</b> | $V_{RRM}$ | 40                | V    |
|  | <b>SD103B</b> | $V_{RRM}$ | 30                | V    |
|  | <b>SD103C</b> | $V_{RRM}$ | 20                | V    |
| Power Dissipation<br>(Infinite Heatsink)<br>$T_c = 3/8$ " from body<br>derates at 4 mW/°C to 0 at 125 °C |               | $P_{tot}$ | 400 <sup>1)</sup> | mW   |
| Junction Temperature   |               | $T_j$     | 125               | °C   |
| Storage Temperature Range  |               | $T_s$     | -55 to + 175      | °C   |
| Single Cycle Surge<br>60 Hz sinewave   |               | $I_{FSM}$ | 15                | A    |
| <sup>1)</sup> Valid provided that leads direct at the case are kept at ambient temperature               |               |           |                   |      |



**SEMTECH ELECTRONICS LTD.**  
( wholly owned subsidiary of HONEY TECHNOLOGY LTD. )

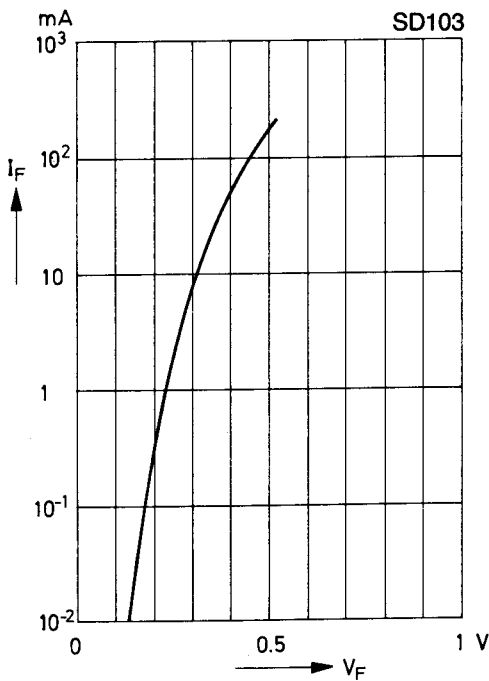


# SD103A ... SD103C

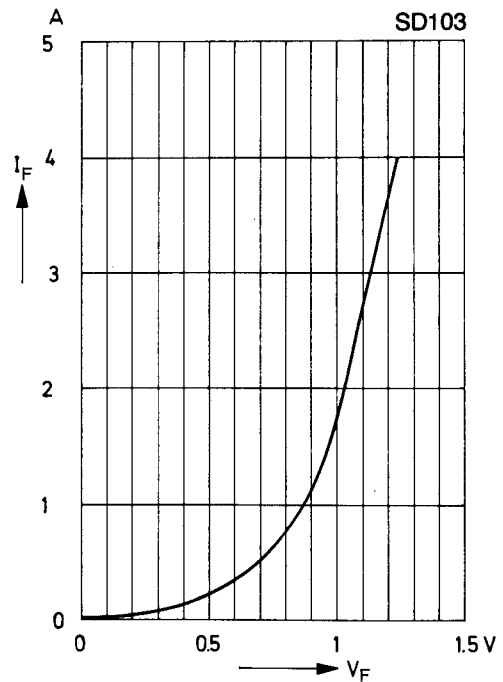
Characteristics at  $T_{amb} = 25\text{ }^{\circ}\text{C}$

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

Typical variation of fwd. current vs. fwd. voltage for primary conduction through the Schottky barrier



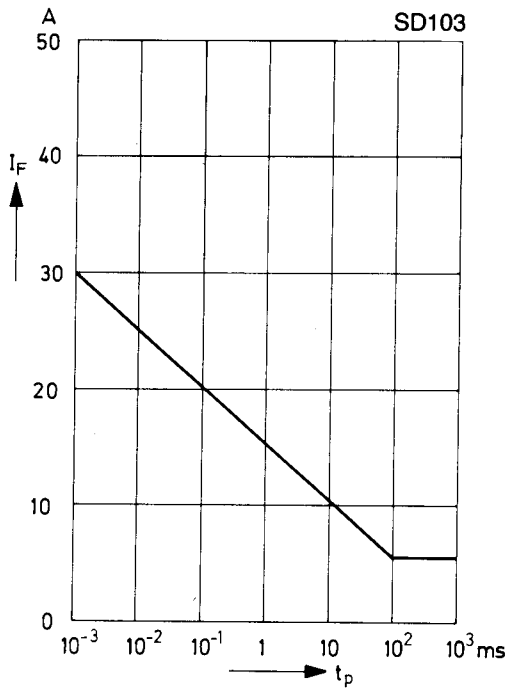
Typical high current forward conduction curve  
 $t_p = 300\text{ }\mu\text{s}$ , duty cycle = 2%



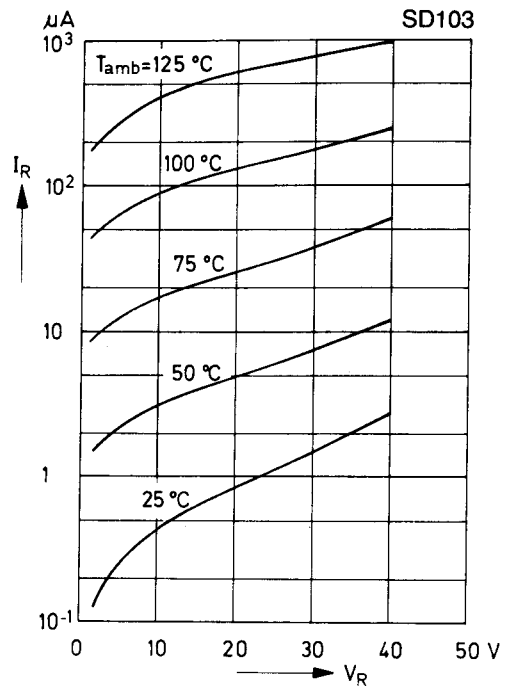
**SEMTECH ELECTRONICS LTD.**  
( wholly owned subsidiary of HONEY TECHNOLOGY LTD. )



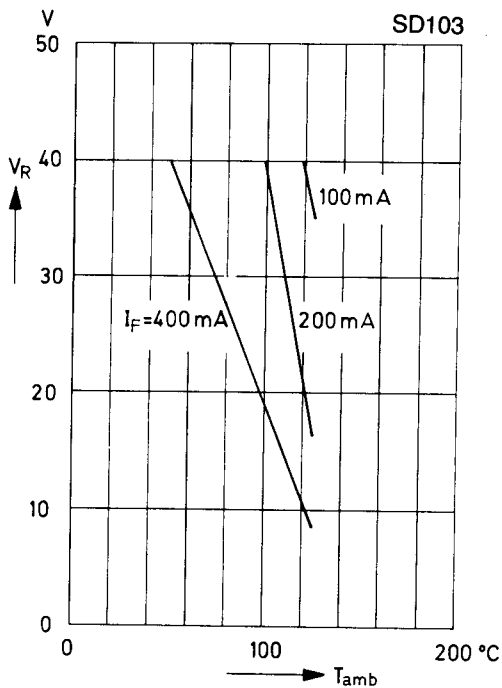
**Typical non repetitive forward surge current versus pulse width**  
Rectangular pulse



**Typical variation of reverse current at various temperatures**



**Blocking voltage deration versus temperature at various average forward currents**



**Typical capacitance versus reverse voltage**

