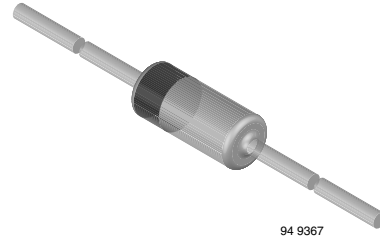


## Small Signal Schottky Diodes

### Features

- 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 SOD123 and SOD323 case with type designations SD103AW(S)-V...SD103CW(S)-V, and in the MiniMELF case with type designations LL103A thru LL103C.
- For general purpose applications
- Lead (Pb)-free component
- Component in accordance with RoHS2002/95/EC and WEEE 2002/96/EC



94 9367

### Mechanical Data

**Case:** DO35 Glass case

**Weight:** approx. 125 mg

**Cathode Band Color:** black

**Packaging Codes/Options:**

TR/10 k per 13" reel (52 mm tape), 50 k/box

TAP/10 k per Ammpack (52 mm tape), 50 k/box

### Applications

- HF-Detector
- Protection circuit
- Small battery charger
- AC-DC/DC-DC converters

### Parts Table

Part	Type differentiation	Ordering code	Type Marking	Remarks
SD103A	$V_R = 40\text{ V}$	SD103A-TR or SD103A-TAP	SD103A	Tape and Reel/Ammpack
SD103B	$V_R = 30\text{ V}$	SD103B-TR or SD103B-TAP	SD103B	Tape and Reel/Ammpack
SD103C	$V_R = 20\text{ V}$	SD103C-TR or SD103C-TAP	SD103C	Tape and Reel/Ammpack

### Absolute Maximum Ratings

$T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Peak inverse voltage		SD103A	$V_R$	40	V
		SD103B	$V_R$	30	V
		SD103C	$V_R$	20	V
Power dissipation (infinite heatsink)			$P_{tot}$	400 <sup>1)</sup>	mW
Single cycle surge 60 Hz sine wave			$I_{FSM}$	15	A

<sup>1)</sup> Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

### Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		$R_{thJA}$	310 <sup>1)</sup>	K/W
Junction temperature		$T_j$	125 <sup>1)</sup>	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 55 to + 150 <sup>1)</sup>	$^{\circ}\text{C}$

<sup>1)</sup> Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

### Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Reverse Breakdown Voltage	$I_R = 50\text{ }\mu\text{A}$	SD103A	$V_{(BR)}$	40			V
		SD103B	$V_{(BR)}$	30			V
		SD103C	$V_{(BR)}$	20			V
Leakage current	$V_R = 30\text{ V}$	SD103A	$I_R$			5	$\mu\text{A}$
	$V_R = 20\text{ V}$	SD103B	$I_R$			5	$\mu\text{A}$
	$V_R = 10\text{ V}$	SD103C	$I_R$			5	$\mu\text{A}$
Forward voltage drop	$I_F = 20\text{ mA}$		$V_F$			370	mV
	$I_F = 200\text{ mA}$		$V_F$			600	mV
Diode capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$		$C_D$		50		pF
Reverse recovery time	$I_F = I_R = 50\text{ to }200\text{ mA}$ , recover to $0.1\text{ }I_R$		$t_{rr}$		10		ns

### Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

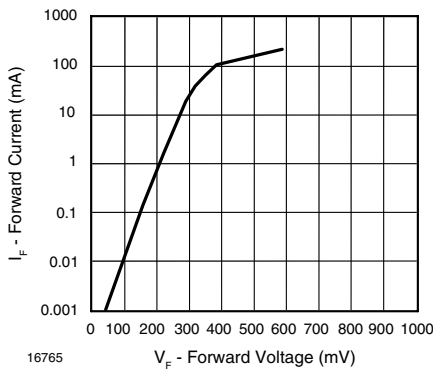


Figure 1. Forward Current vs. Forward Voltage

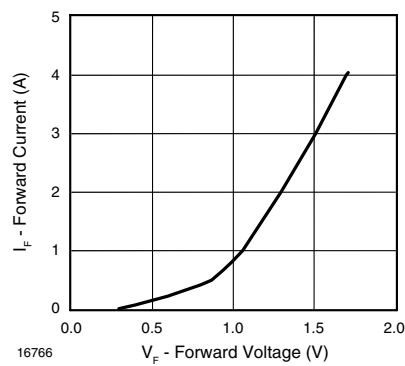


Figure 2. Forward Current vs. Forward Voltage

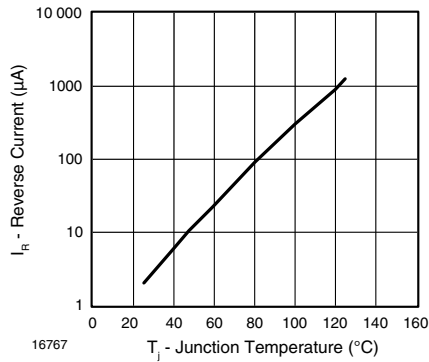


Figure 3. Reverse Current vs. Junction Temperature

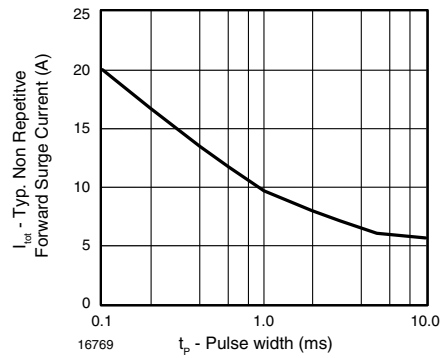


Figure 5. Typ. Non Repetitive Forward Surge Current vs. Pulse Width

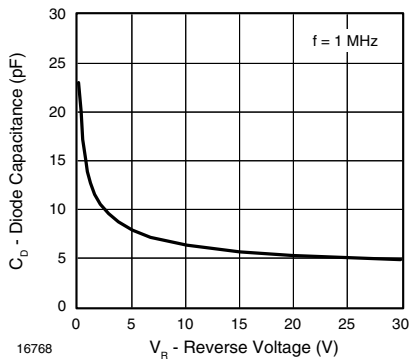


Figure 4. Diode Capacitance vs. Reverse Voltage

## Package Dimensions in millimeters (inches): DO35

