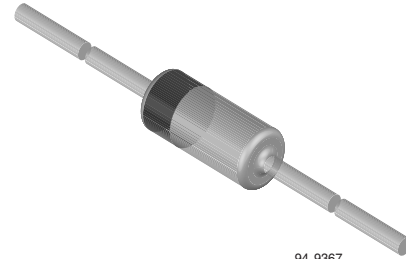


## Schottky Diodes

### 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 SOD-123 case with type designations SD103AW...SD103CW and in the MiniMELF case with type designations LL103A thru LL103C.
- Integrated

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

### Mechanical Data

**Case:** DO-35 Glass Case

**Weight:** approx. 130 mg

#### Packaging Codes/Options:

D7/10 K per 13 " reel (52 mm tape), 20 K/box

D8/10 K per Ammo tape (52 mm tape), 20 K/box

### Applications

HF-Detector

### 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		$R_{\theta JA}$	0.3 <sup>1)</sup>	K/W
Junction temperature		$T_j$	125 <sup>1)</sup>	$^{\circ}\text{C}$
Storage temperature range		$T_S$	- 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	$V_{(BR)R}$	40			V
		SD103B	$V_{(BR)R}$	30			V
		SD103C	$V_{(BR)R}$	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	$I_F = 20\text{ mA}$		$V_F$			0.37	V
	$I_F = 200\text{ mA}$		$V_F$			0.6	V
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 $0.1 I_R$		$t_{rr}$		10		ns

### Typical Characteristics ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

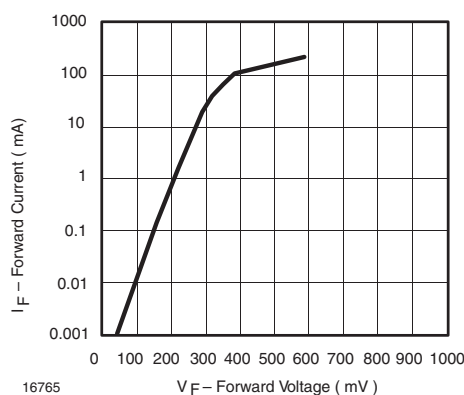


Fig. 1 Forward Current vs. Forward Voltage

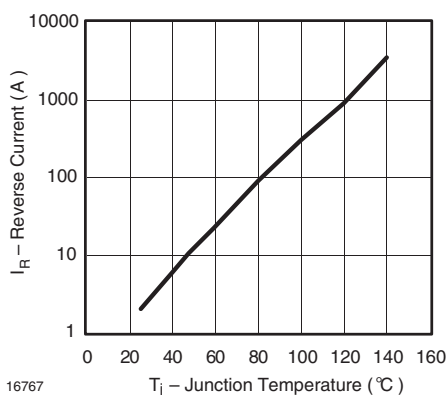


Fig. 3 Reverse Current vs. Junction Temperature

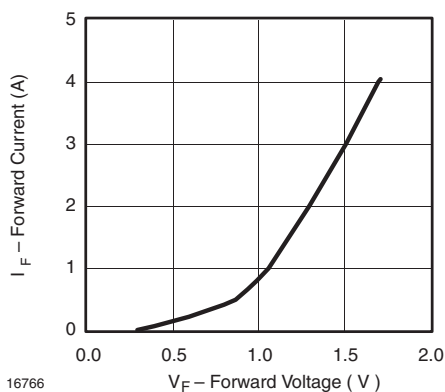


Fig. 2 Forward Current vs. Forward Voltage

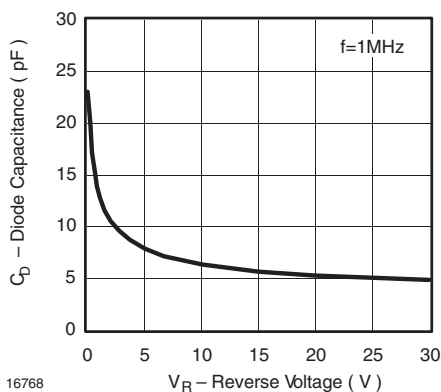


Fig. 4 Diode Capacitance vs. Reverse Voltage

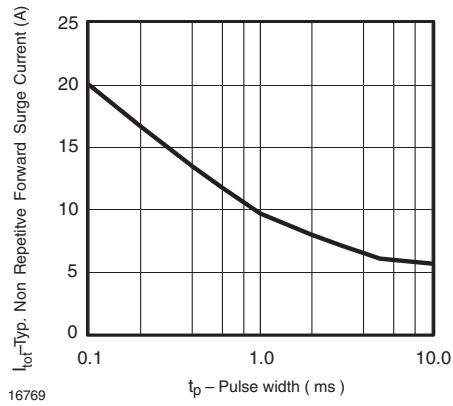
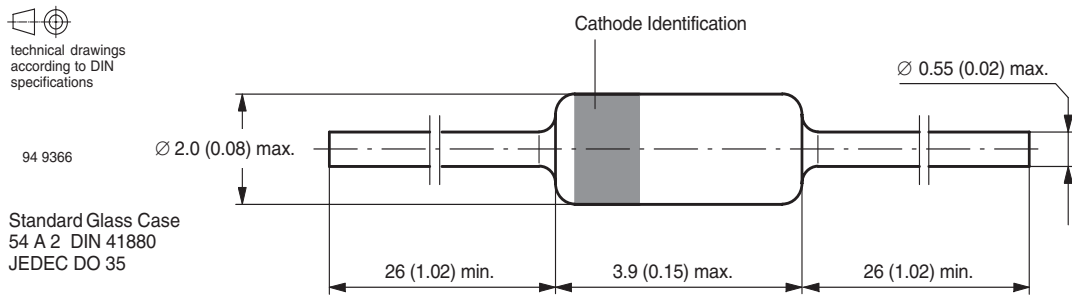


Fig. 5 Typ. Non Repetitive Forward Surge Current vs. Pulse width

## Package Dimensions in mm (Inches)



### Ozone Depleting Substances Policy Statement

It is the policy of **Vishay Semiconductor GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

**Vishay Semiconductor GmbH** has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

**Vishay Semiconductor GmbH** can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

**We reserve the right to make changes to improve technical design  
and may do so without further notice.**

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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