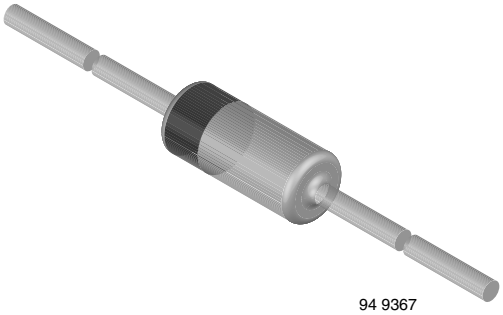
Small Signal Schottky Diodes

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 SOD-123 and SOD-323 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
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition

RoHS COMPLIANT
HALOGEN FREE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Applications

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

Mechanical Data

Case: DO-35

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 Ammopack (52 mm tape), 50 k/box

Parts Table

Part	Type differentiation	Ordering code	Type Marking	Remarks
SD103A	V_R = 40 V	SD103A-TR or SD103A-TAP	SD103A	Tape and Reel/Ammopack
SD103B	V_R = 30 V	SD103B-TR or SD103B-TAP	SD103B	Tape and Reel/Ammopack
SD103C	V_R = 20 V	SD103C-TR or SD103C-TAP	SD103C	Tape and Reel/Ammopack

Absolute Maximum Ratings

T_{amb} = 25 °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[1)]	mW
Single cycle surge 60 Hz sine wave			I_{FSM}	15	A

[1)] Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	310[1)]	K/W
Junction temperature		T_j	125	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C

[1)] Valid provided that leads at a distance of 4 mm from case are kept at ambient temperature

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

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

Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

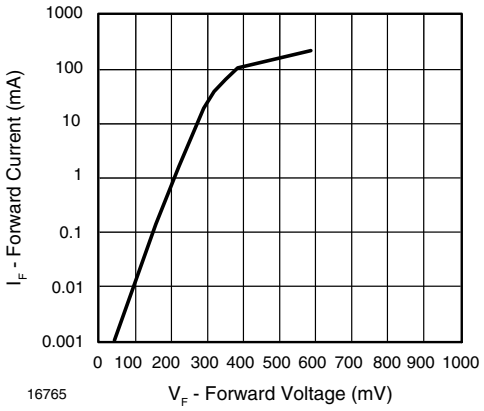

Figure 1. Forward Current vs. Forward Voltage

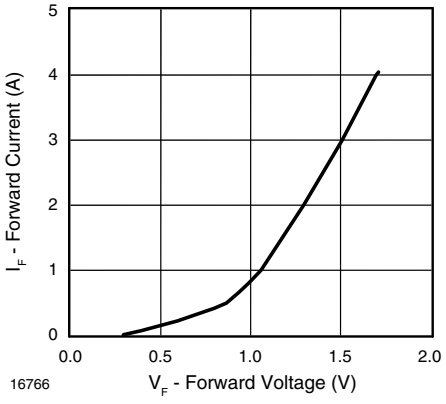

Figure 2. Forward Current vs. Forward Voltage

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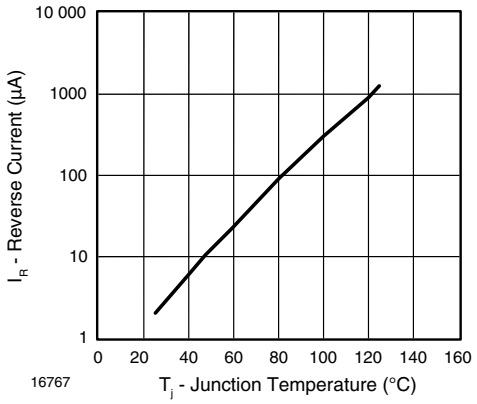


Figure 3. Reverse Current vs. Junction Temperature

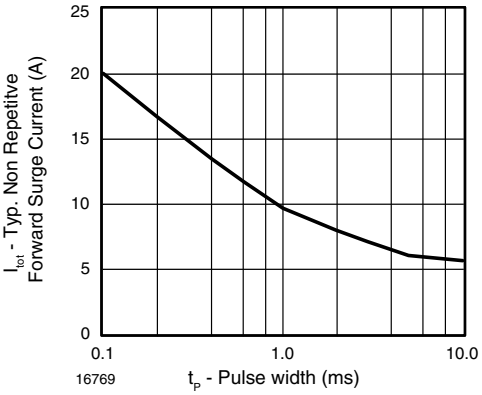


Figure 5. Typ. Non Repetitive Forward Surge Current vs. Pulse Width

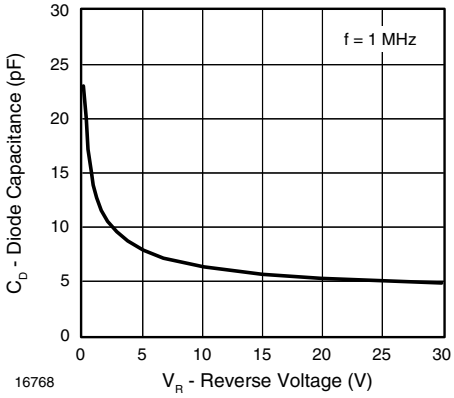
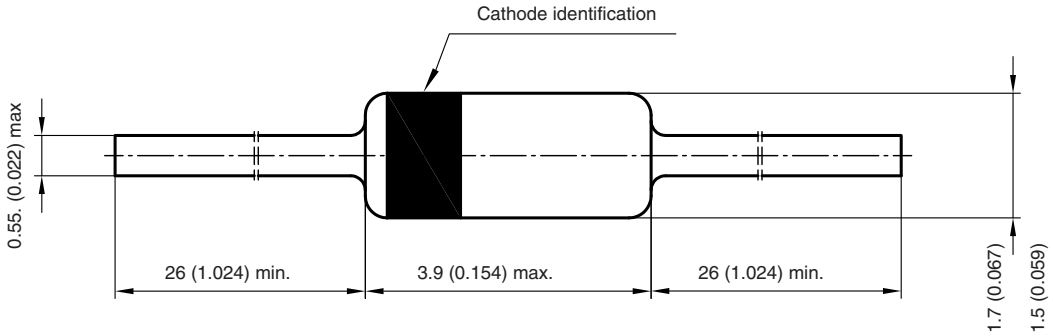


Figure 4. Diode Capacitance vs. Reverse Voltage

Package Dimensions in millimeters (inches): **DO-35**



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