



## Small Signal Schottky Diodes



## MECHANICAL DATA

**Case:** DO-35**Weight:** approx. 125 mg**Cathode band color:** black**Packaging codes/options:**

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

TAP/10K per ammpack (52 mm tape), 50K/box

## FEATURES

- The SD103 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guarding
- 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 to SD103CW(S)-V, and in the MiniMELF case with type designations LL103A thru LL103C
- For general purpose applications
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


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## APPLICATIONS

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

## PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
SD103A	$V_R = 40\text{ V}$	SD103A-TR or SD103A-TAP	SD103A	Single diode	Tape and reel/ammpack
SD103B	$V_R = 30\text{ V}$	SD103B-TR or SD103B-TAP	SD103B	Single diode	Tape and reel/ammpack
SD103C	$V_R = 20\text{ V}$	SD103C-TR or SD103C-TAP	SD103C	Single diode	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) <sup>(1)</sup>			$P_{tot}$	400	mW
Single cycle surge 60 Hz sine wave			$I_{FSM}$	15	A

## Note

<sup>(1)</sup> Valid provided that leads at a distance of 4 mm from case are kept at ambient temperatureTHERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	310	K/W
Junction temperature		$T_j$	125	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 55 to + 150	$^{\circ}\text{C}$

## Note

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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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	$I_F = I_R = 50\text{ mA}$ to $200\text{ mA}$ , recover to $0.1 I_R$		$t_{rr}$		10		ns

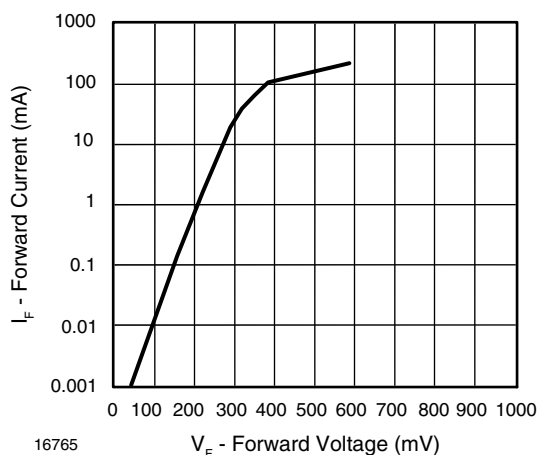
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

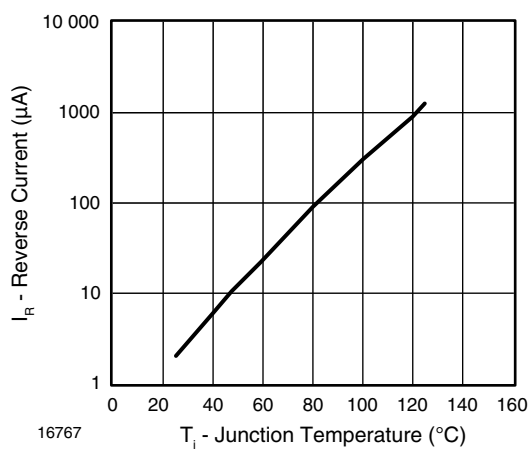


Fig. 3 - Reverse Current vs. Junction Temperature

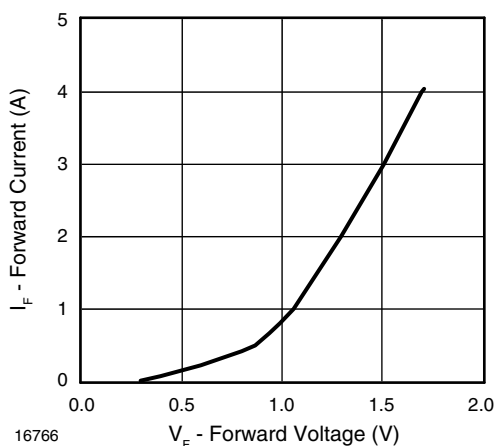


Fig. 2 - Forward Current vs. Forward Voltage

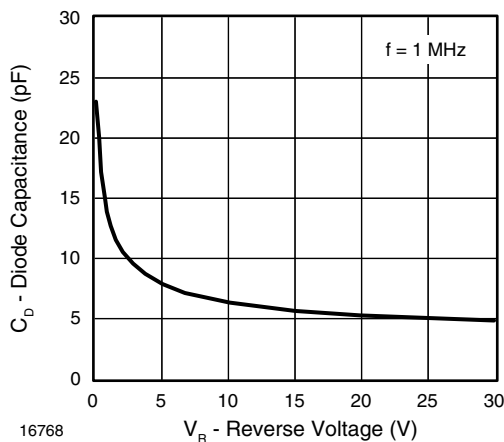


Fig. 4 - Diode Capacitance vs. Reverse Voltage

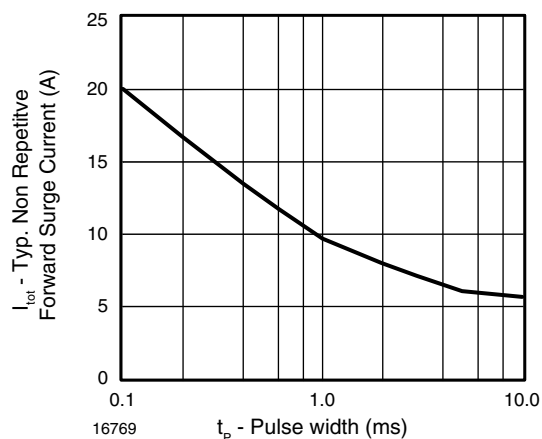
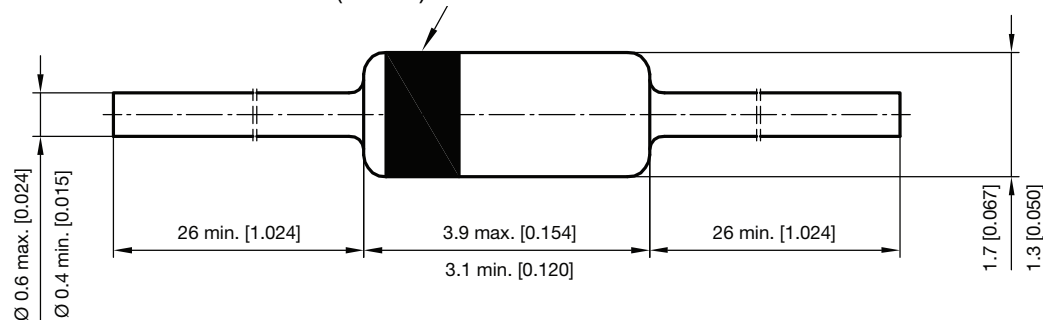


Fig. 5 - Typical Non-Repetitive Forward Surge Current vs. Pulse Width

### PACKAGE DIMENSIONS in millimeters (inches): DO-35



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