



## Small Signal Schottky Diodes



### 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) to SD103CW(S), and in the MiniMELF case with type designations LL103A thru LL103C
- For general purpose application
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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HALOGEN  
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### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** DO-35 (DO-204AH)

**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

### APPLICATIONS

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

### PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS
SD103A	V <sub>R</sub> = 40 V	SD103A-TR or SD103A-TAP	SD103A	Single	Tape and reel/ammpack
SD103B	V <sub>R</sub> = 30 V	SD103B-TR or SD103B-TAP	SD103B	Single	Tape and reel/ammpack
SD103C	V <sub>R</sub> = 20 V	SD103C-TR or SD103C-TAP	SD103C	Single	Tape and reel/ammpack

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Peak inverse voltage		SD103A	V <sub>R</sub>	40	V
		SD103B	V <sub>R</sub>	30	V
		SD103C	V <sub>R</sub>	20	V
Power dissipation (infinite heat sink) <sup>(1)</sup>			P <sub>tot</sub>	400	mW
Peak forward surge current	t <sub>p</sub> = 300 μs square pulse		I <sub>FSM</sub>	15	A

#### Note

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

### THERMAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	310	K/W
Junction temperature		T <sub>j</sub>	125	°C
Storage temperature range		T <sub>stg</sub>	-55 to +150	°C

#### Note

<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	$I_F = I_R = 50\text{ mA}$ 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)

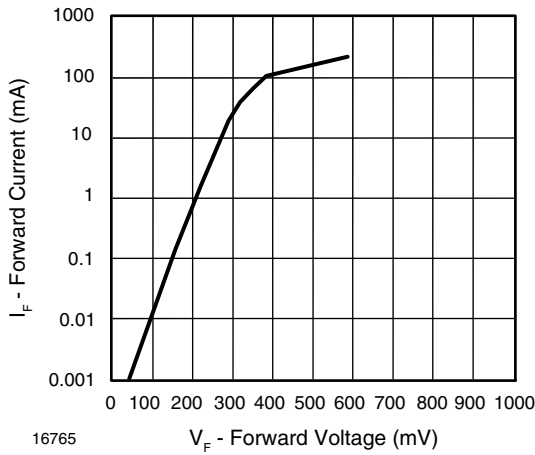


Fig. 1 - Forward Current vs. Forward Voltage

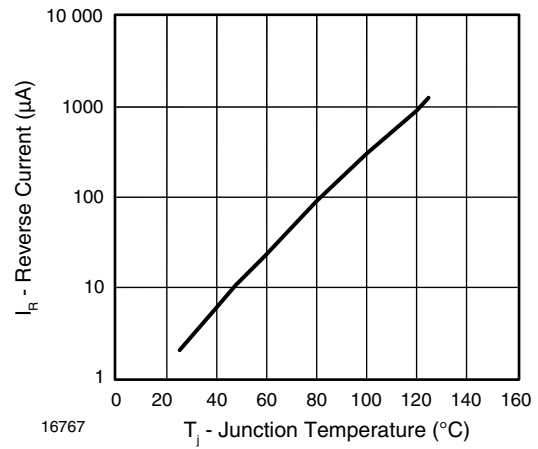


Fig. 3 - Reverse Current vs. Junction Temperature

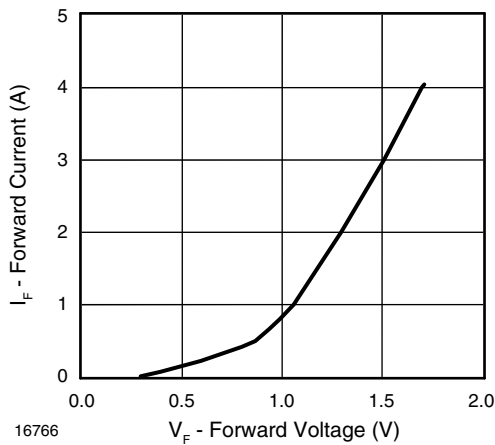


Fig. 2 - Forward Current vs. Forward Voltage

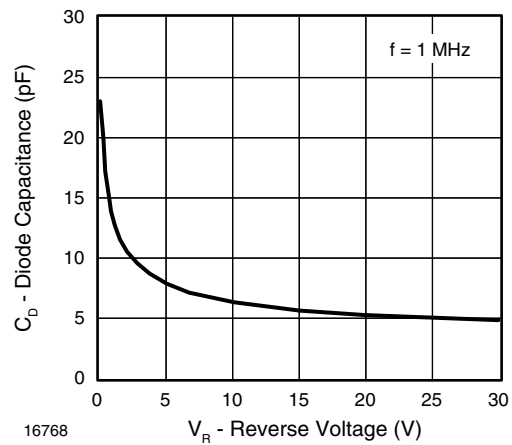


Fig. 4 - Diode Capacitance vs. Reverse Voltage

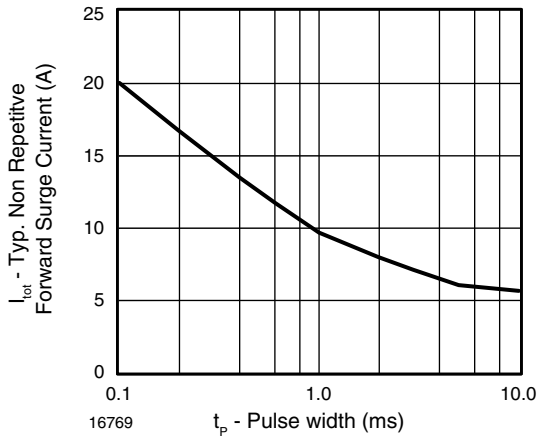
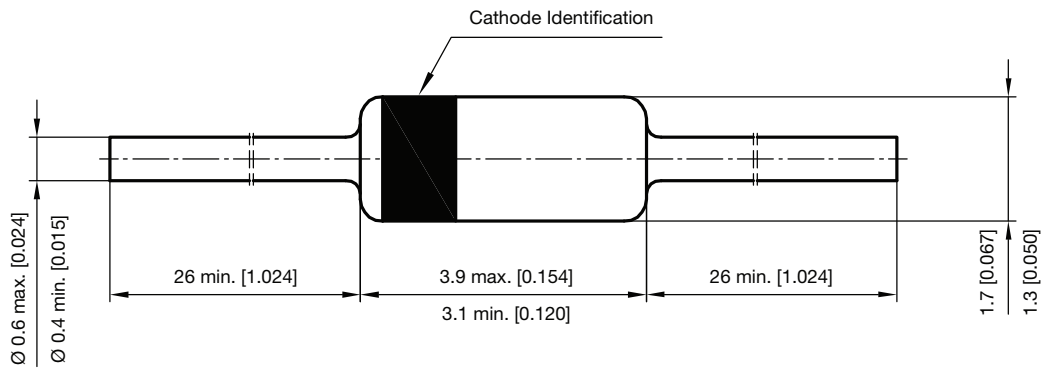


Fig. 5 - Typical Non-Repetitive Forward Surge Current vs. Pulse Width

**PACKAGE DIMENSIONS** in millimeters (inches): **DO-35 (DO-204AH)**



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