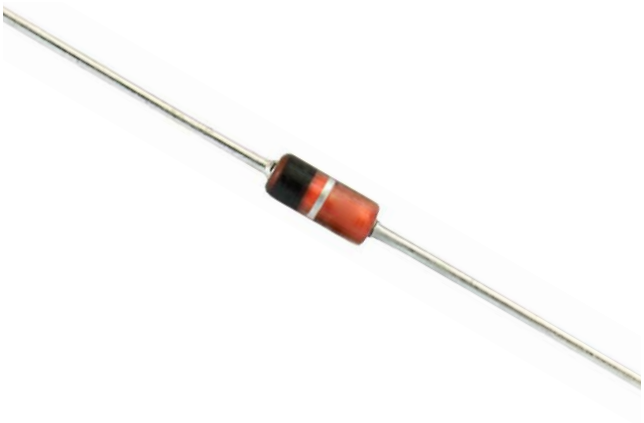
Small Signal Schottky Diodes



FEATURES

- The SD103 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guardring
- 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 applications
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

HALOGEN FREE

DESIGN SUPPORT TOOLS click logo to get started

3D Models Available

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 ammopack (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_R = 40 V	SD103A-TR or SD103A-TAP	SD103A	Single	Tape and reel/ammopack
SD103B	V_R = 30 V	SD103B-TR or SD103B-TAP	SD103B	Single	Tape and reel/ammopack
SD103C	V_R = 20 V	SD103C-TR or SD103C-TAP	SD103C	Single	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 heat sink) (1)			P_{tot}	400	mW
Peak forward surge current	t_p = 300 µs square pulse		I_{FSM}	15	A

Note

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

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

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

Note

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

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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 mA to 200 mA, recover to 0.1 I_R		t_{rr}		10		ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

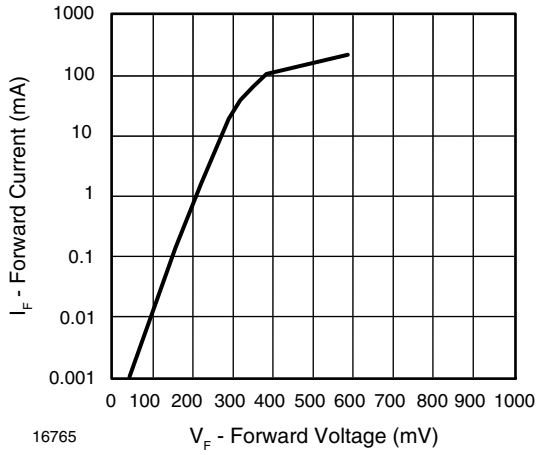

Fig. 1 - Forward Current vs. Forward Voltage

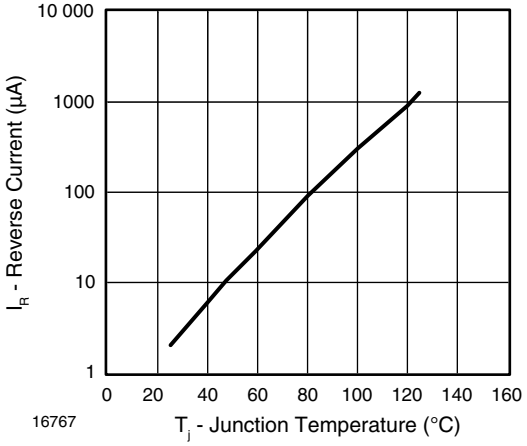

Fig. 3 - Reverse Current vs. Junction Temperature

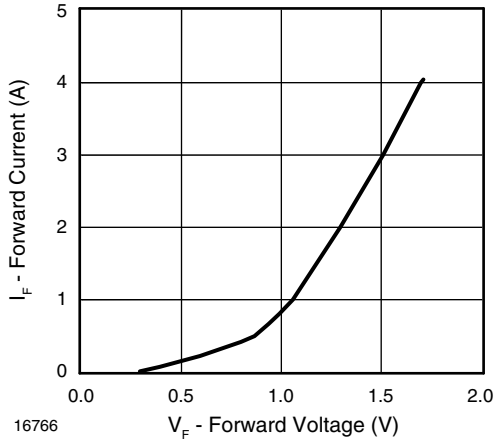

Fig. 2 - Forward Current vs. Forward Voltage

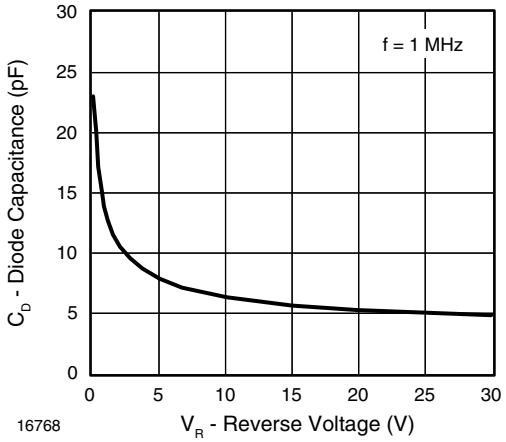

Fig. 4 - Diode Capacitance vs. Reverse Voltage

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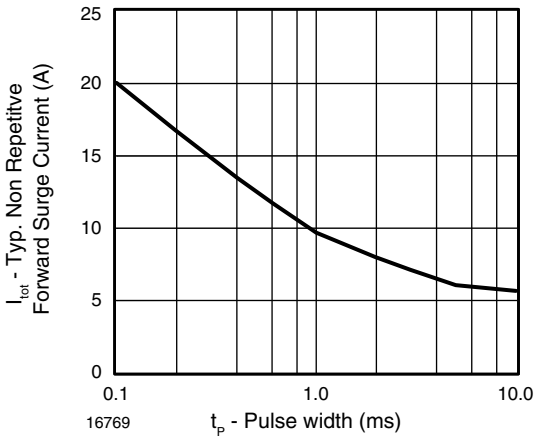
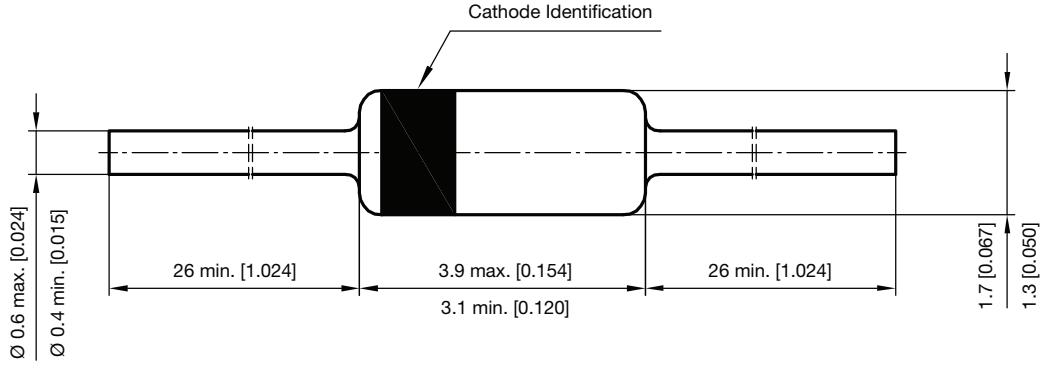


Fig. 5 - Typical Non-Repetitive Forward Surge Current vs. Pulse Width

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



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