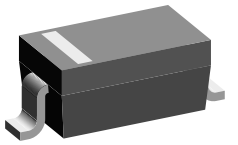
Small Signal Schottky Diodes

Features

- 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.
- The SD103 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring.
- This diode is also available in the MiniMELF case with the type designations LL103A to LL103C, DO35 case with the type designations SD103A to SD103C and SOD323 case with type designations SD103AWS-V to SD103CWS-V.
- For general purpose applications.
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Mechanical Data

Case: SOD123 Plastic case

Weight: approx. 10.3 mg

Packaging Codes/Options:

GS18/10 k per 13" reel (8 mm tape), 10 k/box

GS08/3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

Part	Ordering code	Type Marking	Remarks
SD103AW-V	SD103AW-V-GS18 or SD103AW-V-GS08	S6	Tape and Reel
SD103BW-V	SD103BW-V-GS18 or SD103BW-V-GS08	S7	Tape and Reel
SD103CW-V	SD103CW-V-GS18 or SD103CW-V-GS08	S8	Tape and Reel

Absolute Maximum Ratings

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

Parameter	Test condition	Part	Symbol	Value	Unit
Peak reverse voltage		SD103AW-V	V_{RRM}	40	V
		SD103BW-V	V_{RRM}	30	V
		SD103CW-V	V_{RRM}	20	V
Power dissipation (Infinite heat sink)			P_{tot}	400[1)]	mW
Single cycle surge	10 µs square wave		I_{FSM}	2	A

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	300[1)]	K/W
Junction temperature		T_j	125[1)]	°C
Storage temperature range		T_{stg}	- 55 to + 150[1)]	°C

[1)] Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Leakage current	V_R = 30 V	SD103AW-V	I_R			5	µA
	V_R = 20 V	SD103BW-V	I_R			5	µA
	V_R = 10 V	SD103CW-V	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

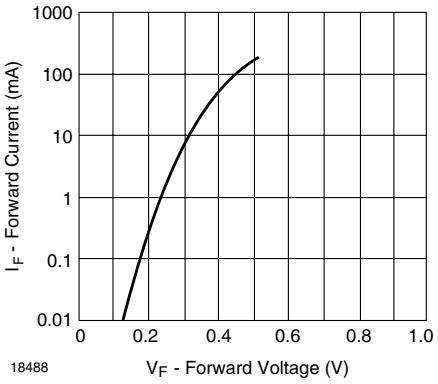


Figure 1. Typical Variation of Forward Current vs. Forward Voltage

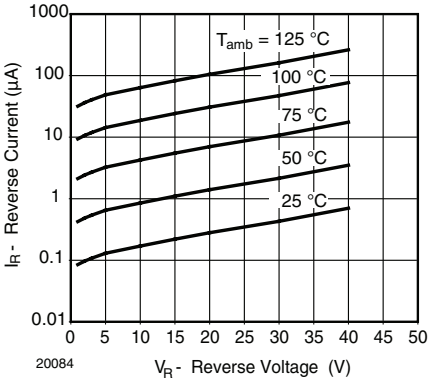


Figure 3. Typical Variation of Reverse Current at Various Temperatures

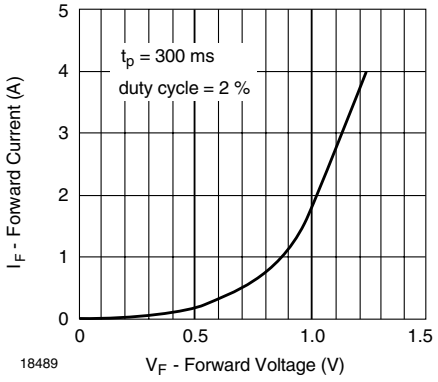


Figure 2. Typical High Current Forward Conduction Curve

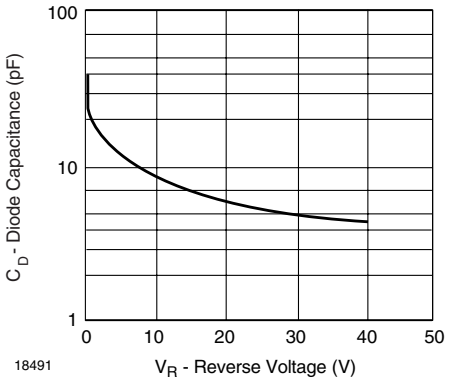


Figure 4. Typical Capacitance vs. Reverse Voltage

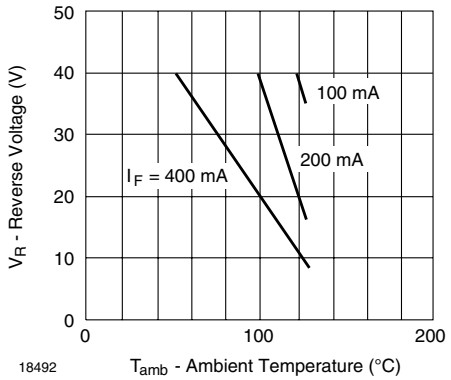


Figure 5. Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

Package Dimensions in mm (Inches): SOD123