

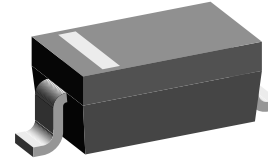
## Small Signal Schottky Diodes

### 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, DO-35 case with the type designations SD103A to SD103C and SOD-323 case with type designations SD103AWS-V to SD103CWS-V.
- For general purpose applications
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT



17431

### Mechanical Data

**Case:** SOD-123

**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

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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 <sup>1)</sup>	mW
Single cycle surge	10 $\mu$ s square wave		$I_{FSM}$	2	A

Note

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature

### Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		$R_{thJA}$	300 <sup>1)</sup>	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 electrodes 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
Leakage current	$V_R = 30\text{ V}$	SD103AW-V	$I_R$			5	$\mu\text{A}$
	$V_R = 20\text{ V}$	SD103BW-V	$I_R$			5	$\mu\text{A}$
	$V_R = 10\text{ V}$	SD103CW-V	$I_R$			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

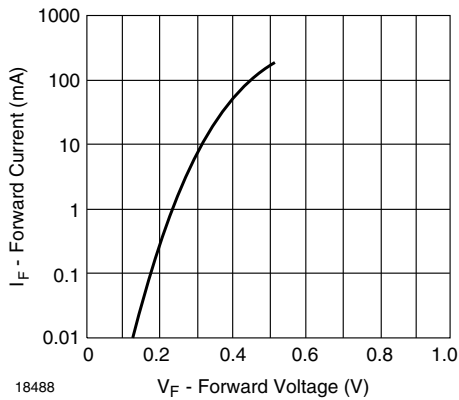


Figure 1. Typical Variation of Forward Current vs. Forward Voltage

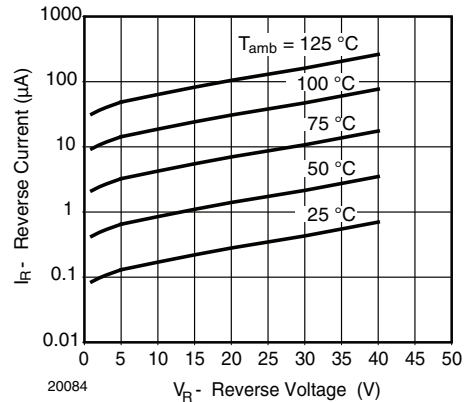


Figure 3. Typical Variation of Reverse Current at Various Temperatures

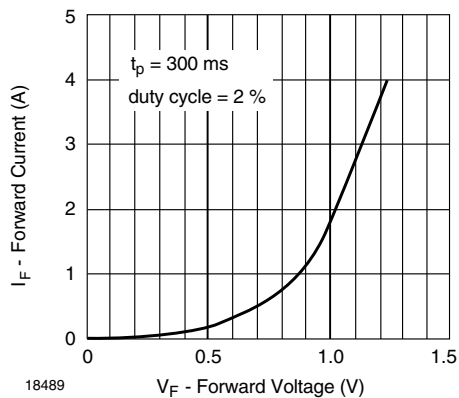


Figure 2. Typical High Current Forward Conduction Curve

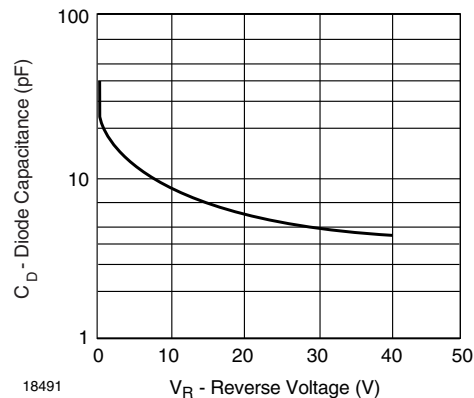


Figure 4. Typical Capacitance vs. Reverse Voltage

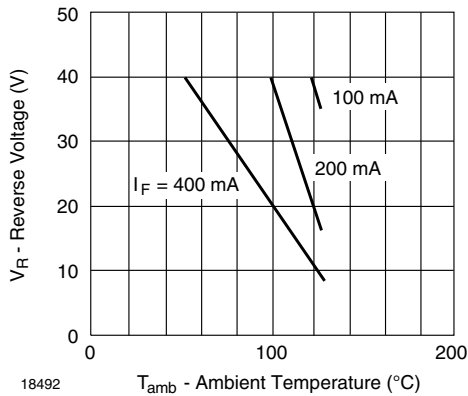
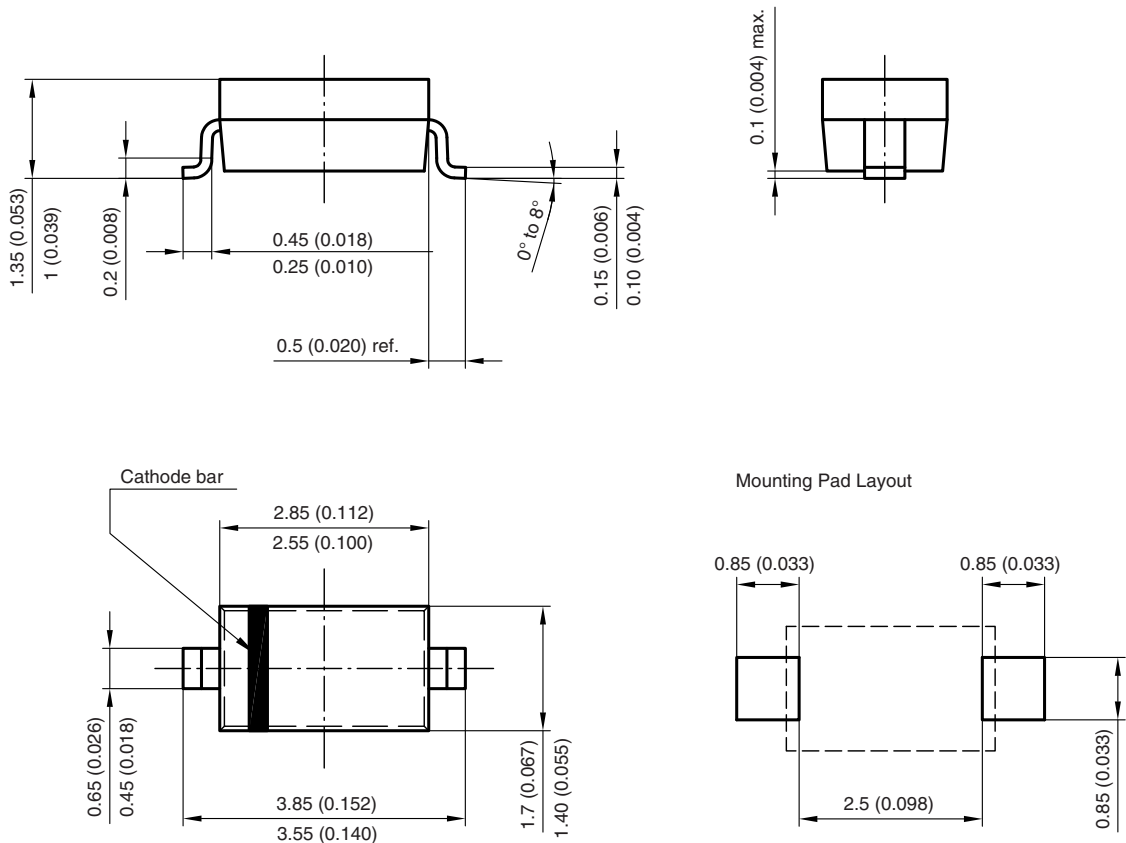


Figure 5. Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

## Package Dimensions in millimeters (inches): SOD-123



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