



## Small Signal Schottky Diodes



### DESIGN SUPPORT TOOLS

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### MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.3 mg

Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### FEATURES

- For general purpose applications
- 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
- The SD101 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guarding
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

PARTS TABLE				
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
SD101AW	SD101AW-E3-08 or SD101AW-E3-18	Single	SA	Tape and reel
	SD101AW-HE3-08 or SD101AW-HE3-18			
SD101BW	SD101BW-E3-08 or SD101BW-E3-18	Single	SB	
	SD101BW-HE3-08 or SD101BW-HE3-18			
SD101CW	SD101CW-E3-08 or SD101CW-E3-18	Single	SC	
	SD101CW-HE3-08 or SD101CW-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		SD101AW	V <sub>RRM</sub>	60	V
		SD101BW	V <sub>RRM</sub>	50	V
		SD101CW	V <sub>RRM</sub>	40	V
Power dissipation (infinite heatsink) <sup>(1)</sup>			P <sub>tot</sub>	400	mW
Forward continuous current			I <sub>F</sub>	30	mA
Maximum single cycle surge	10 μs square wave		I <sub>FSM</sub>	2	A

#### Note

<sup>(1)</sup> Valid provided that electrodes 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>	300	K/W
Junction temperature <sup>(1)</sup>		T <sub>j</sub>	125	°C
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C
Operating temperature range		T <sub>op</sub>	-55 to +125	°C

#### Note

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



ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I <sub>R</sub> = 10 μA	SD101AW	V <sub>(BR)</sub>	60			V
		SD101BW	V <sub>(BR)</sub>	50			V
		SD101CW	V <sub>(BR)</sub>	40			V
Leakage current	V <sub>R</sub> = 50 V	SD101AW	I <sub>R</sub>			200	nA
	V <sub>R</sub> = 40 V	SD101BW	I <sub>R</sub>			200	nA
	V <sub>R</sub> = 30 V	SD101CW	I <sub>R</sub>			200	nA
Forward voltage drop	I <sub>F</sub> = 1 mA	SD101AW	V <sub>F</sub>			410	mV
		SD101BW	V <sub>F</sub>			400	mV
		SD101CW	V <sub>F</sub>			390	mV
	I <sub>F</sub> = 15 mA	SD101AW	V <sub>F</sub>			1000	mV
		SD101BW	V <sub>F</sub>			950	mV
		SD101CW	V <sub>F</sub>			900	mV
Diode capacitance	V <sub>R</sub> = 0 V, f = 1 MHz	SD101AW	C <sub>D</sub>			2	pF
		SD101BW	C <sub>D</sub>			2.1	pF
		SD101CW	C <sub>D</sub>			2.2	pF
Reverse recovery time	I <sub>F</sub> = I <sub>R</sub> = 5 mA, recover to 0.1 I <sub>R</sub>		t <sub>rr</sub>			1	ns

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

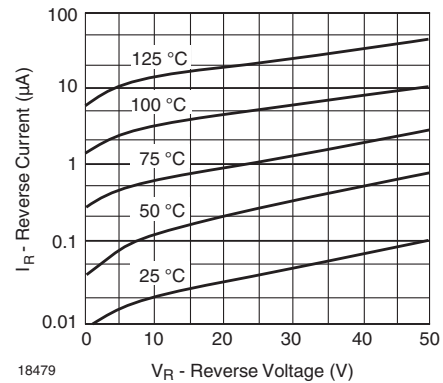
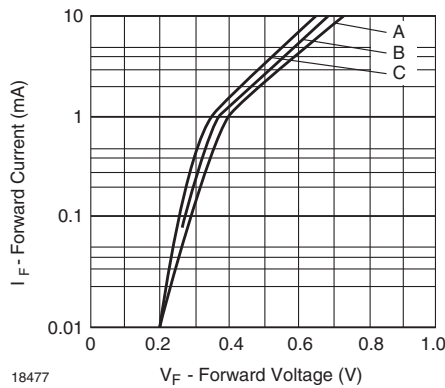


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

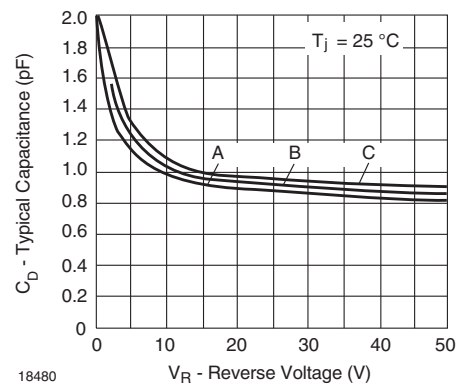
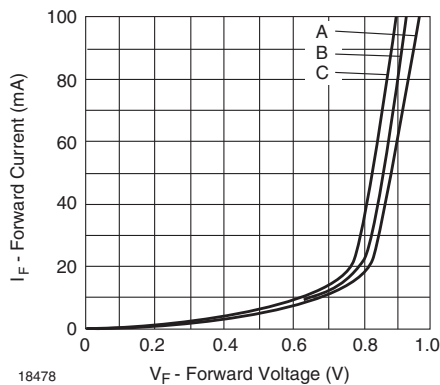
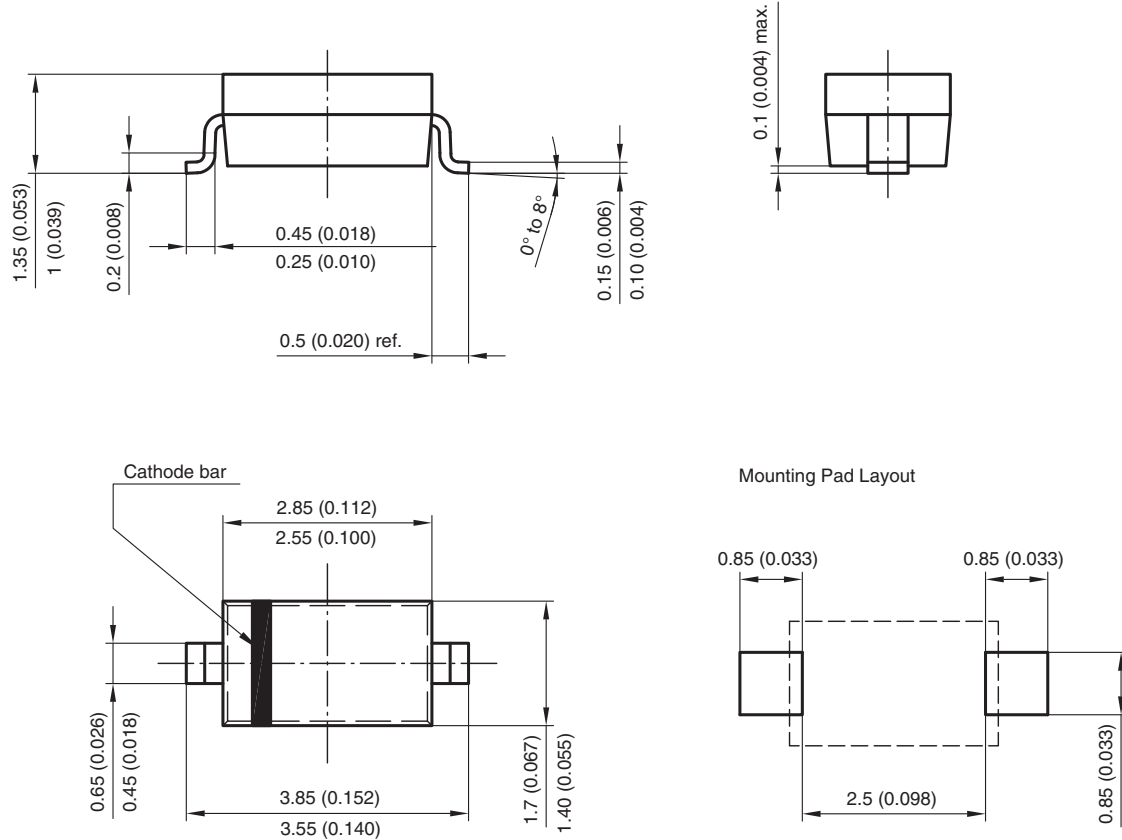


Fig. 2 - Typical Forward Conduction Curve

Fig. 4 - Typical Capacitance Curve as a Function of Reverse Voltage



## PACKAGE DIMENSIONS in millimeters (inches): SOD-123



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