

Small Signal Schottky Diodes



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
- 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



RoHS
COMPLIANT

PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
SD101AW	SD101AW-E3-08 or SD101AW-E3-18	Single diode	SA	Tape and reel
	SD101AW-HE3-08 or SD101AW-HE3-18			
SD101BW	SD101BW-E3-08 or SD101BW-E3-18	Single diode	SB	
	SD101BW-HE3-08 or SD101BW-HE3-18			
SD101CW	SD101CW-E3-08 or SD101CW-E3-18	Single diode	SC	
	SD101CW-HE3-08 or SD101CW-HE3-18			

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		SD101AW	V_{RRM}	60	V
		SD101BW	V_{RRM}	50	V
		SD101CW	V_{RRM}	40	V
Power dissipation (infinite heatsink) ⁽¹⁾			P_{tot}	400	mW
Forward continuous current			I_F	30	mA
Maximum single cycle surge	10 μs square wave		I_{FSM}	2	A

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air ⁽¹⁾		R_{thJA}	300	K/W
Junction temperature ⁽¹⁾		T_j	125	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 150	$^{\circ}\text{C}$
Operating temperature range		T_{op}	- 55 to + 125	$^{\circ}\text{C}$

Note

⁽¹⁾ 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
Reverse breakdown voltage	$I_R = 10\text{ }\mu\text{A}$	SD101AW	$V_{(BR)}$	60			V
		SD101BW	$V_{(BR)}$	50			V
		SD101CW	$V_{(BR)}$	40			V
Leakage current	$V_R = 50\text{ V}$	SD101AW	I_R			200	nA
	$V_R = 40\text{ V}$	SD101BW	I_R			200	nA
	$V_R = 30\text{ V}$	SD101CW	I_R			200	nA
Forward voltage drop	$I_F = 1\text{ mA}$	SD101AW	V_F			410	mV
		SD101BW	V_F			400	mV
		SD101CW	V_F			390	mV
	$I_F = 15\text{ mA}$	SD101AW	V_F			1000	mV
		SD101BW	V_F			950	mV
		SD101CW	V_F			900	mV
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$	SD101AW	C_D			2	pF
		SD101BW	C_D			2.1	pF
		SD101CW	C_D			2.2	pF
Reverse recovery time	$I_F = I_R = 5\text{ mA}$, recover to $0.1\text{ }I_R$		t_{rr}			1	ns

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

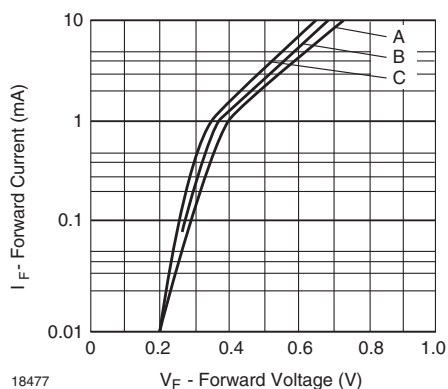


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

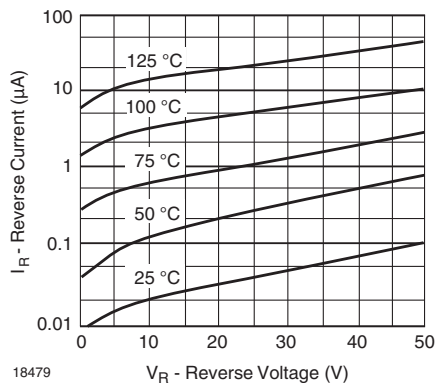


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

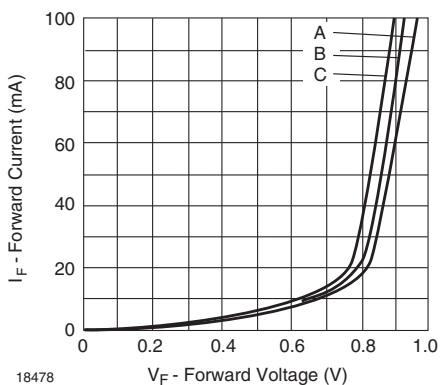


Fig. 2 - Typical Forward Conduction Curve

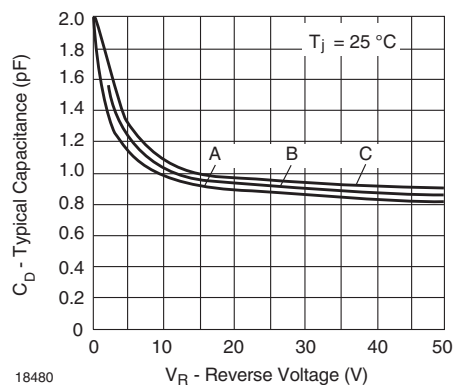
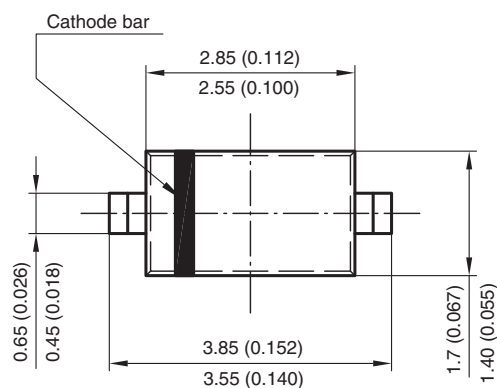
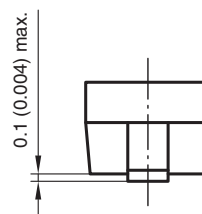
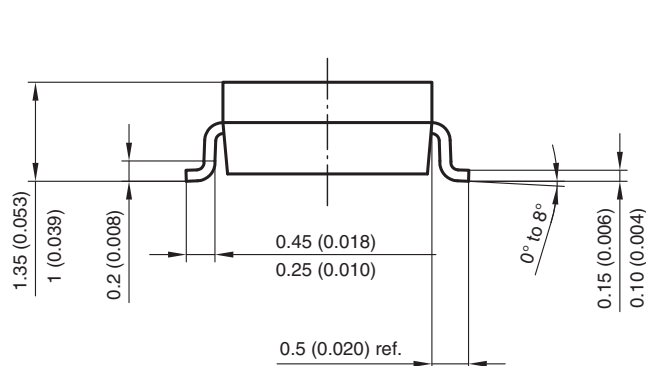


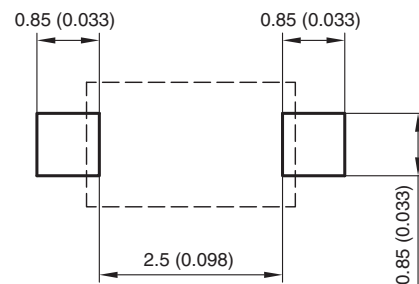
Fig. 4 - Typical Capacitance Curve as a Function of Reverse Voltage



PACKAGE DIMENSIONS in millimeters (inches): SOD-123



Mounting Pad Layout



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