

## Vishay Semiconductors

# **Small Signal Schottky Diodes**



#### **FEATURES**

- Integrated protection ring against static discharge
- Low capacitance
- · Low leakage current
- Low forward voltage drop
- AEC-Q101 qualified
- Material categorization:
  For definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>





COMPLIANT HALOGEN FREE

### **MECHANICAL DATA**

Case: DO-35

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
- · Diode for low currents with a low supply voltage
- Small battery charger
- Power supplies
- DC/DC converter for notebooks

PARTS TABLE							
PART	TYPE DIFFERENTATION	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS		
SD101A	$V_R = 60 \text{ V}, V_F \text{ max. } 410 \text{ mV}$ at $I_F = 1 \text{ mA}$	SD101A-TR or SD101A-TAP	Single diode	SD101A	Tape and reel/ ammopack		
SD101B	$V_R = 50 \text{ V}, V_F \text{ max. } 400 \text{ mV}$ at $I_F = 1 \text{ mA}$	SD101B-TR or SD101B-TAP	Single diode	SD101B	Tape and reel/ ammopack		
SD101C	$V_R = 40 \text{ V}, V_F \text{ max. } 390 \text{ mV}$ at $I_F = 1 \text{ mA}$	SD101C-TR or SD101C-TAP	Single diode	SD101C	Tape and reel/ ammopack		

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
		SD101A	$V_R$	60	V	
Reverse voltage		SD101B	$V_R$	50	V	
		SD101C	V <sub>R</sub>	40	V	
Forward continuous current			I <sub>F</sub>	30	mA	
Peak forward surge current	t <sub>p</sub> = 10 μs		I <sub>FSM</sub>	2	Α	
Repetitive peak forward current			I <sub>FRM</sub>	150	mA	
Power dissipation (1)			P <sub>tot</sub>	310	mW	

#### Nota

<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		
Junction temperature		Tj	125	°C		
Storage temperature range		T <sub>stg</sub>	- 65 to + 150	°C		
Thermal resistance junction to ambient air (1)		R <sub>thJA</sub>	320	K/W		

#### Note

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

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)								
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT	
	I <sub>R</sub> = 10 μA	SD101A	V <sub>(BR)</sub>	60			V	
Reverse breakdown voltage		SD101B	V <sub>(BR)</sub>	50			V	
		SD101C	V <sub>(BR)</sub>	40			V	
	V <sub>R</sub> = 50 V	SD101A	I <sub>R</sub>			200	nA	
Leakage current	V <sub>R</sub> = 40 V	SD101B	I <sub>R</sub>			200	nA	
	V <sub>R</sub> = 30 V	SD101C	I <sub>R</sub>			200	nA	
	I <sub>F</sub> = 1 mA	SD101A	V <sub>F</sub>			410	mV	
		SD101B	V <sub>F</sub>			400	mV	
Forward voltage drap		SD101C	V <sub>F</sub>			390	mV	
Forward voltage drop		SD101A	V <sub>F</sub>			1000	mV	
	I <sub>F</sub> = 15 mA	SD101B	V <sub>F</sub>			950	mV	
		SD101C	V <sub>F</sub>			900	mV	
	V <sub>R</sub> = 0 V, f = 1 MHz	SD101A	C <sub>D</sub>			2.0	pF	
Diode capacitance		SD101B	C <sub>D</sub>			2.1	pF	
		SD101C	C <sub>D</sub>			2.2	pF	

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

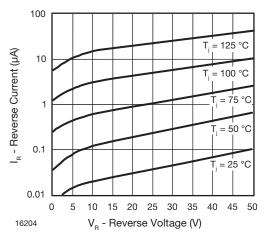


Fig. 1 - Reverse Current vs. Reverse Voltage

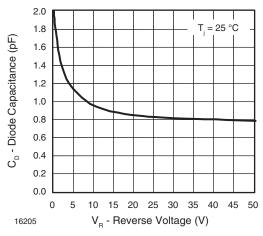


Fig. 2 - Diode Capacitance vs. Reverse Voltage

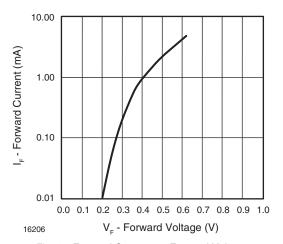
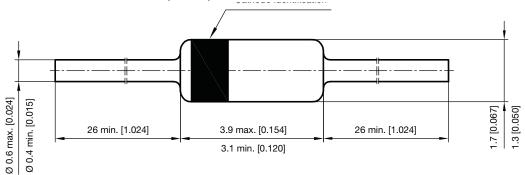


Fig. 3 - Forward Current vs. Forward Voltage

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### PACKAGE DIMENSIONS in millimeters (inches): DO-35



Rev. 6 - Date: 19. December 2011 Document no.: SB-V-3906.04-031(4)

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Revision: 02-Oct-12 Document Number: 91000