RoHS

HALOGEN

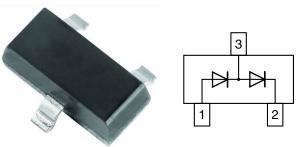
FREE

**GREEN** (5-2008)



# Vishay Semiconductors

# **Dual In-Series Small Signal High Voltage Switching Diode**



### **LINKS TO ADDITIONAL RESOURCES**





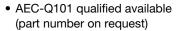






### **FEATURES**

- · Silicon epitaxial planar diode
- · Fast switching dual in-series diode, especially suited for applications requiring high voltage capability



- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level (MSL) 1
- Base P/N-G3 green, commercial grade
- · Material categorization: for definitions of compliance please see www.vishav.com/doc?99912











# **MECHANICAL DATA**

Case: SOT-23

Weight: approx. 9.2 mg Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box

PARTS TABLE							
PART	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY	
GSD2004S-G	GSD2004S-G3-08	no	DB7	Dual serial	3 000 (8 mm tape on 7" reel)	15 000	
	GSD2004S-G3-18	no	DBI	Duai Seriai	10 000 (8 mm tape on 13" reel)	10 000	

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Continuous reverse voltage		$V_{R}$	240	V	
Peak repetitive reverse voltage		$V_{RRM}$	300	V	
Forward current (continuous) (1)		I <sub>F</sub>	350	mA	
Peak repetitive forward current (1)		I <sub>FRM</sub>	625	mA	
Non-repetitive peak forward current (1)	t <sub>p</sub> = 1 μs	I <sub>FSM</sub>	4.0	Α	
	t <sub>p</sub> = 1 s	I <sub>FSM</sub>	1.0	Α	
Dower dissinction	on FR-4 board with recommended soldering footprint	D	300	mW	
Power dissipation	Infinite heatsink	P <sub>tot</sub>	500		

### Note

(1) Infinite heatsink

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Typical thermal resistance junction to ambient air	according to JEDEC® 51-3 on FR-4 board with recommended soldering footprint	R <sub>thJA</sub>	420	K/W		
Thermal resistance junction to lead	Infinite heatsink	$R_{thJL}$	250	K/W		
Junction temperature		Tj	150	°C		
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C		
Operating temperature range		T <sub>op</sub>	-55 to +150	°C		



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I <sub>R</sub> = 100 μA	$V_{BR}$	300			V
Looke an assument	V <sub>R</sub> = 240 V	I <sub>R</sub>			100	nA
Leakage current	V <sub>R</sub> = 240 V, T <sub>j</sub> = 150 °C	I <sub>R</sub>			100	μΑ
Converd veltage	I <sub>F</sub> = 20 mA	V <sub>F</sub>		0.83	0.87	V
Forward voltage	I <sub>F</sub> = 100 mA	V <sub>F</sub>			1.00	V
Diode capacitance	$V_F = V_R = 0$ , $f = 1$ MHz	C <sub>D</sub>			2	pF
Reverse recovery time	$I_F = I_R = 30 \text{ mA}, i_R = 3.0 \text{ mA},$ $R_L = 100 \ \Omega$	t <sub>rr</sub>			50	ns

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

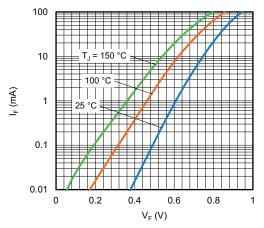


Fig. 1 - Forward Current vs. Forward Voltage

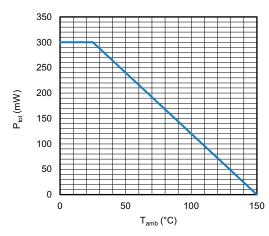


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

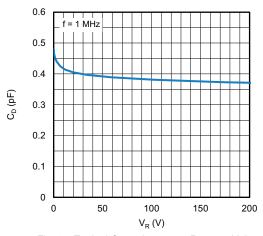


Fig. 3 - Typical Capacitance vs. Reverse Voltage

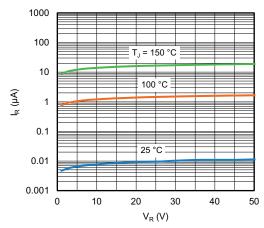
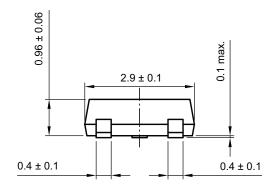


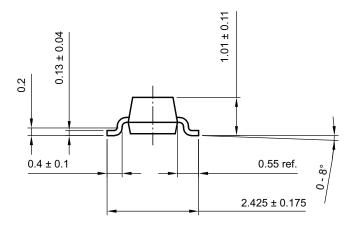
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

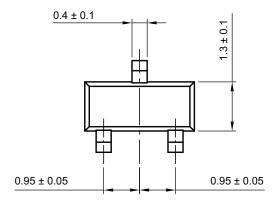


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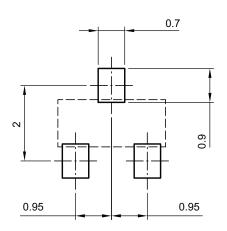
### **PACKAGE DIMENSIONS** in millimeters: **SOT-23**







### footprint recommendation:



Created - Date: 18-Oct-2021 Rev. 01 - Date: 18-Jan-2022 S8-V-3929.01-009 (4)

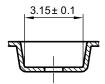


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### **CARRIER TAPE SOT-23**

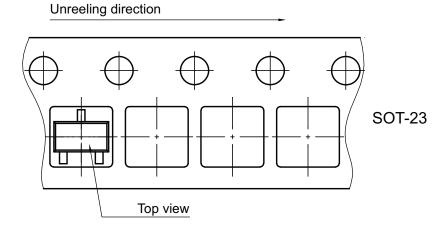
# A-A Section 0.229 ± 0.013 0.229 ± 0.013 0.229 ± 0.013 0.229 ± 0.013 0.229 ± 0.013

**B-B Section** 



Created Date: 04-Feb-2010 Rev. Date: 07-Feb-2022 S8-V-3929.01-005 (4)

### **ORIENTATION IN CARRIER TAPE SOT-23**



Created Date: 04-Feb-2010 Rev. Date: 07-Nov-2022 S8-V-3929.01-005 (4)



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