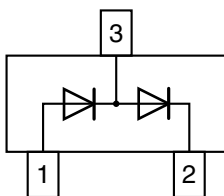
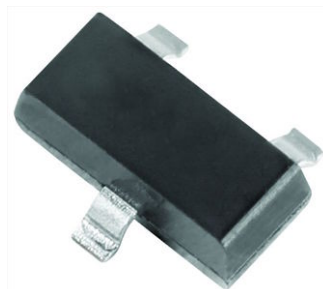


# Dual In-Series Small Signal High Voltage Switching Diode



## FEATURES

- Silicon epitaxial planar diode
- Fast switching dual in-series diode, especially suited for applications requiring high voltage capability
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level (MSL) 1
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3\_A - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

AUTOMOTIVE  
GRADE  
Available



**RoHS**  
COMPLIANT

## LINKS TO ADDITIONAL RESOURCES



3D Models



Models



Marking



Parametric Search



Order Samples

## 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	GSD2004S-E3-08	no	DB7	Dual serial	3 000 (8 mm tape on 7" reel)	15 000
	GSD2004S-HE3_A-08	yes				
	GSD2004S-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
	GSD2004S-HE3_A-18	yes				

## ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , 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) <sup>(1)</sup>		$I_F$	350	mA
Peak repetitive forward current <sup>(1)</sup>		$I_{FRM}$	625	mA
Non-repetitive peak forward current <sup>(1)</sup>	$t_p = 1 \mu\text{s}$	$I_{FSM}$	4.0	A
	$t_p = 1 \text{ s}$	$I_{FSM}$	1.0	A
Power dissipation	on FR-4 board with recommended soldering footprint	$P_{tot}$	300	mW
	Infinite heatsink		500	mW

**Note**

<sup>(1)</sup> Infinite heatsink

## THERMAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ , 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	$R_{thJA}$	420	K/W
Thermal resistance junction to lead	Infinite heatsink	$R_{thJL}$	250	K/W
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 to +150	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	-55 to +150	$^{\circ}\text{C}$

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$	$V_{BR}$	300			V
Leakage current	$V_R = 240\text{ V}$	$I_R$			100	nA
	$V_R = 240\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$			100	$\mu\text{A}$
Forward voltage	$I_F = 20\text{ mA}$	$V_F$		0.83	0.87	V
	$I_F = 100\text{ mA}$	$V_F$			1.00	V
Diode capacitance	$V_F = V_R = 0, f = 1\text{ MHz}$	$C_D$			2	pF
Reverse recovery time	$I_F = I_R = 30\text{ mA}, i_R = 3.0\text{ mA}, R_L = 100\text{ }\Omega$	$t_{rr}$			50	ns

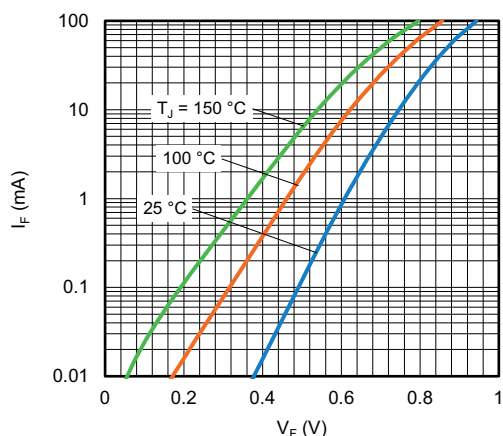
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

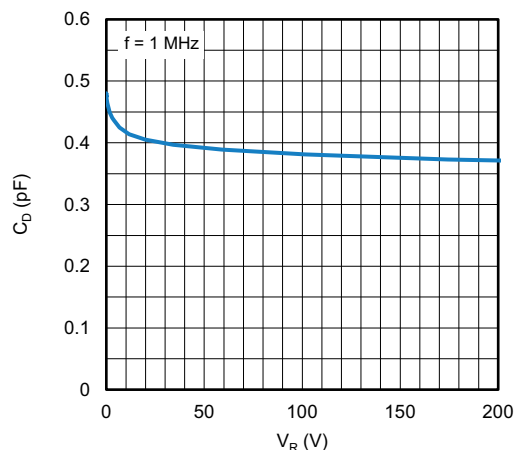


Fig. 3 - Typical Capacitance vs. Reverse Voltage

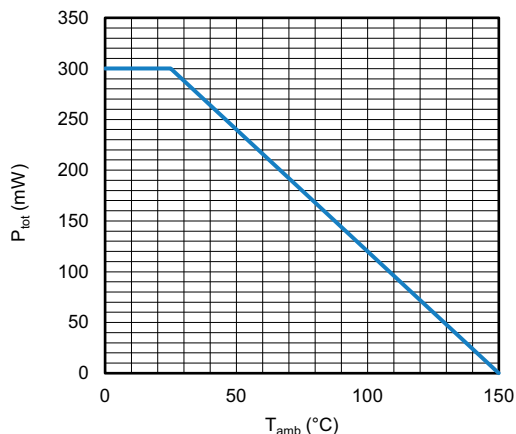


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

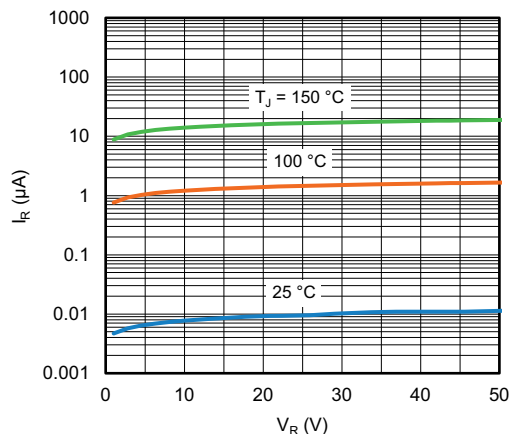
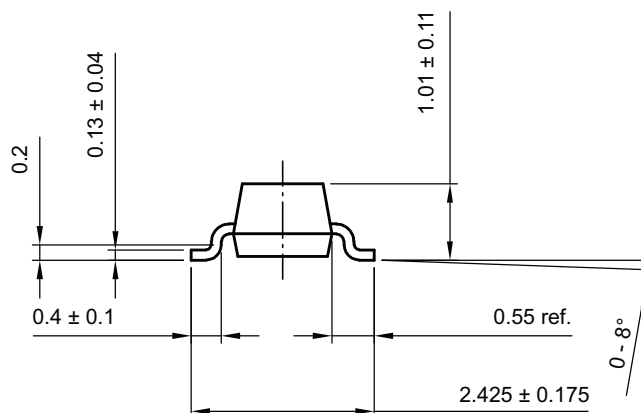


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



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



footprint recommendation:



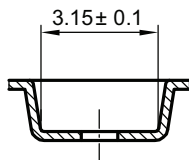
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Rev. 01 - Date: 18-Jan-2022  
S8-V-3929.01-009 (4)



**CARRIER TAPE SOT-23**

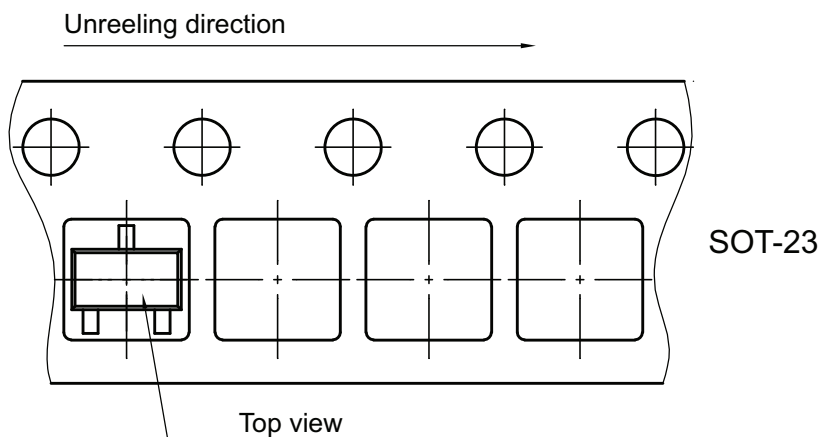


**B-B Section**



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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