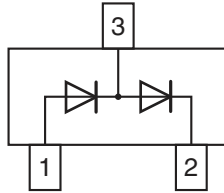


## Dual In-Series Small Signal High Voltage Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching dual in-series diode, especially suited for applications requiring high voltage capability
- AEC-Q101 qualified available
- 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

**DESIGN SUPPORT TOOLS** click logo to get started


### MECHANICAL DATA

**Case:** SOT-23

**Weight:** approx. 8.8 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	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
GSD2004S	GSD2004S-E3-08 or GSD2004S-E3-18	Dual serial	DB6	Tape and reel
	GSD2004S-HE3-08 or GSD2004S-HE3-18			

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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)		$I_F$	225	mA
Peak repetitive forward current		$I_{FRM}$	625	mA
Non-repetitive peak forward current	$t_p = 1\ \mu\text{s}$	$I_{FSM}$	4.0	A
	$t_p = 1\ \text{s}$	$I_{FSM}$	1.0	A
Power dissipation <sup>(1)</sup>		$P_{tot}$	350	mW

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Typical thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	357	$^{\circ}\text{C}/\text{W}$
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	$^{\circ}\text{C}$

**Note**
<sup>(1)</sup> Device on fiberglass substrate



<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	$V_F = V_R = 0, f = 1\text{ MHz}$	$C_D$			5.0	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

**Note**

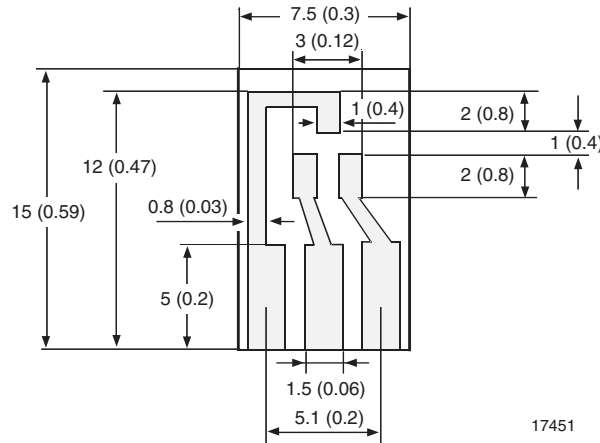
(1) Device on fiberglass substrate

**LAYOUT FOR  $R_{thJA}$  TEST**

Thickness:

Fiberglass 1.5 mm (0.059 inches)

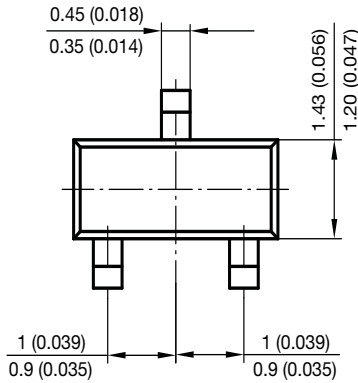
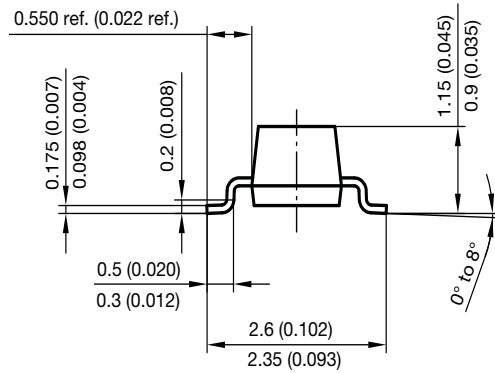
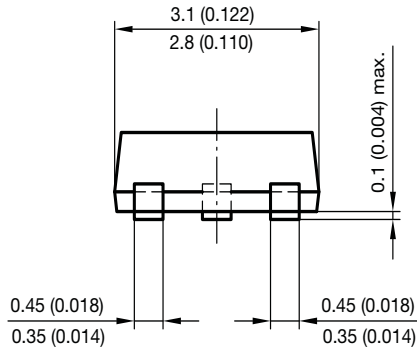
Copper leads 0.3 mm (0.012 inches)



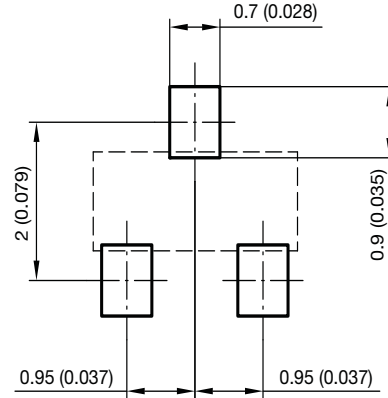
17451



PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



Document no.: 6.541-5014.01-4  
Rev. 8 - Date: 23.Sept.2009  
17418



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