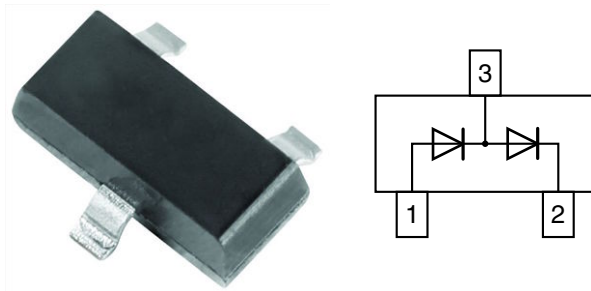


Dual In-Series Small Signal High Voltage Switching Diode



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

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT

LINKS TO ADDITIONAL RESOURCES



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			10 000 (8 mm tape on 13" reel)	10 000
	GSD2004S-E3-18	no				
	GSD2004S-HE3_A-18	yes				

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) ⁽¹⁾		I_F	350	mA	
Peak repetitive forward current ⁽¹⁾		I_{FRM}	625	mA	
Non-repetitive peak forward current ⁽¹⁾	$t_p = 1\text{ }\mu\text{s}$	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
⁽¹⁾ Infinite heatsink

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	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	$^{\circ}\text{C}$	

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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	μA
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

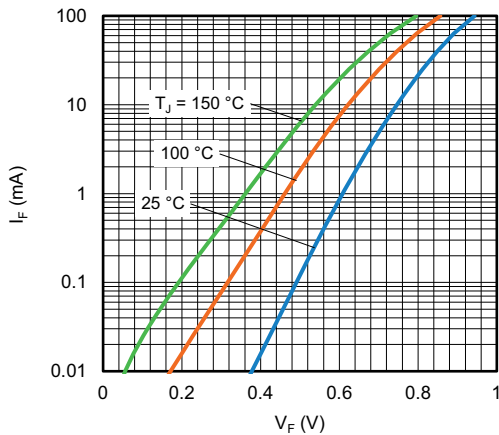
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

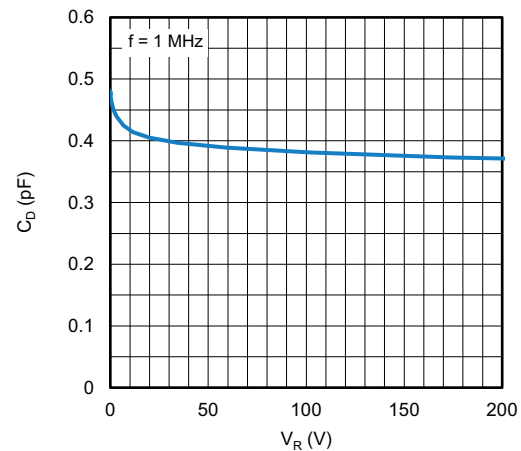


Fig. 3 - Typical Capacitance vs. Reverse Voltage

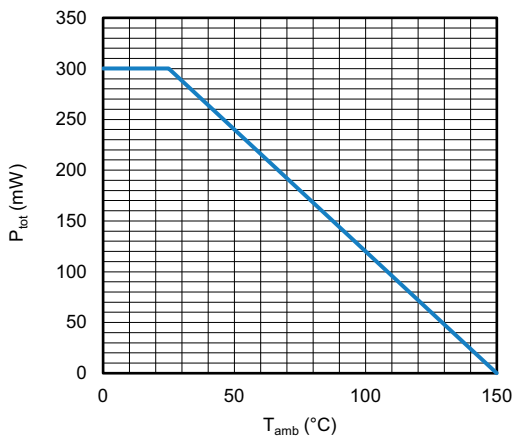


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

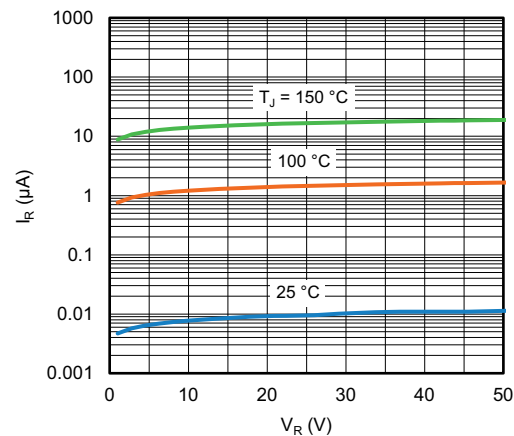
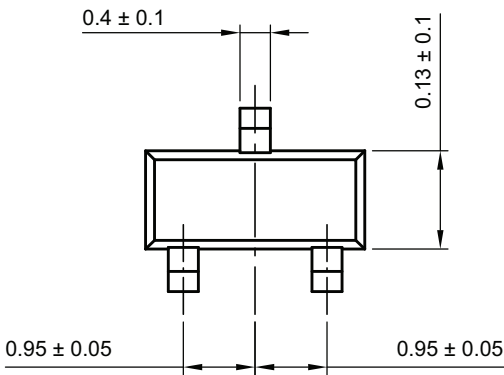
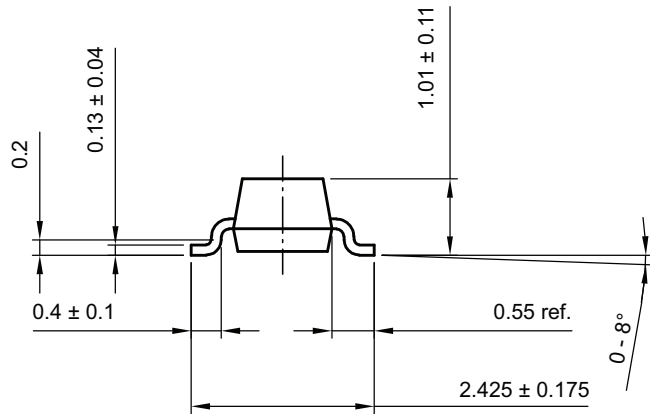
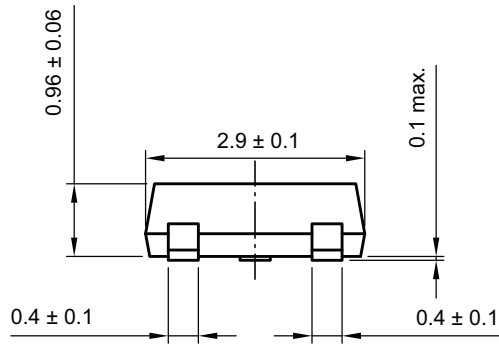


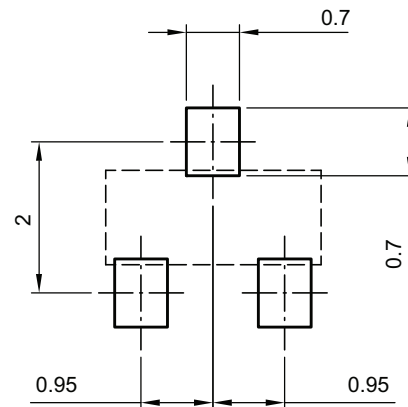
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters: SOT-23



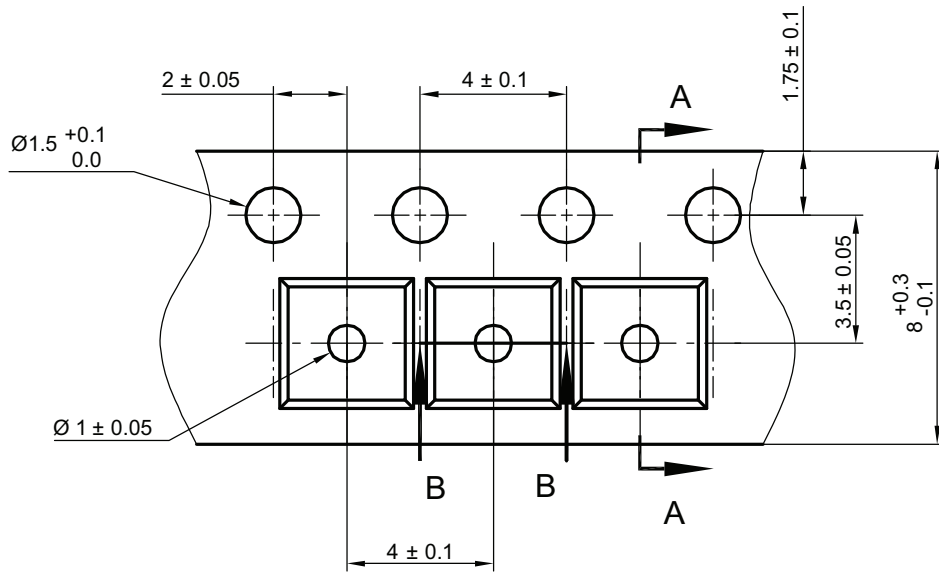
footprint recommendation:



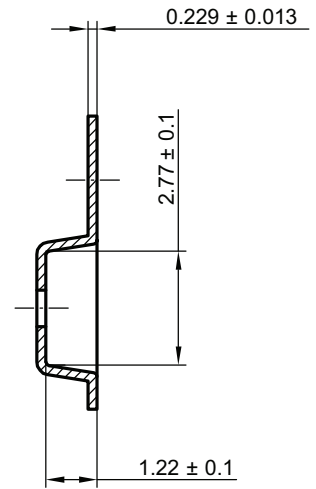
Created - Date: 18-Oct-2021
 Rev. 01 - Date: 18-Jan-2022
 S8-V-3929.01-009 (4)



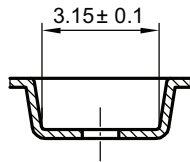
CARRIER TAPE SOT-23



A-A Section



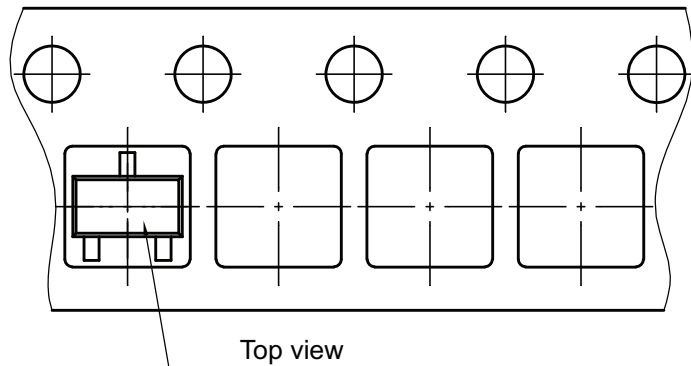
B-B Section



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

ORIENTATION IN CARRIER TAPE SOT-23

Unreeling direction



SOT-23

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



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