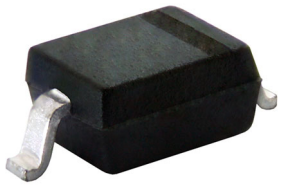
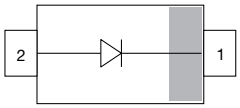
_Small Signal Fast Switching Diode





FEATURES

- Silicon epitaxial planar diode
- Fast switching diodes ($t_{rr} \leq 4$ ns)
- 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

Pb-free

e3

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models | SPICE Models | Marking | Parametric Search | Order Samples

MECHANICAL DATA

Case: SOD-323

Weight: approx. 4 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
1N4151WS	1N4151WS-E3-08	No	5A	Single	3000 (8 mm tape on 7" reel)	15 000
	1N4151WS-HE3_A-08	Yes				
	1N4151WS-E3-18	No			10 000 (8 mm tape on 13" reel)	10 000
	1N4151WS-HE3_A-18	Yes				

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	50	V
Repetitive peak reverse voltage		V_{RRM}	75	V
Continuous forward current (1)		I_F	250	mA
Average rectified current half wave rectification with resistive load (1)	f ≥ 50 Hz	$I_{F(AV)}$	150	mA
Surge current (1)	t < 1 s and T_j = 25 °C	I_{FSM}	500	mA
Power dissipation (1)		P_{tot}	200	mW

Note

(1) Infinite heatsink

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to lead	Infinite heatsink	R_{thJL}	625	K/W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-65 to +150	°C
Operating temperature range		T_{op}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 50 mA	V_F			1.0	V
Leakage current	V_R = 50 V	I_R			50	nA
	V_R = 20 V, T_j = 150 °C	I_R			50	µA
Reverse breakdown voltage	I_R = 5 µA (pulsed)	$V_{(BR)}$	75			V
Diode capacitance	$V_F = V_R$ = 0 V	C_D			1.5	pF
Reverse recovery time	I_F = 10 mA, I_R = 10 mA i_R = 1 mA	t_{rr}			4	ns
	I_F = 10 mA, i_R = 1 mA V_R = 6 V, R_L = 100 Ω	t_{rr}			2	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

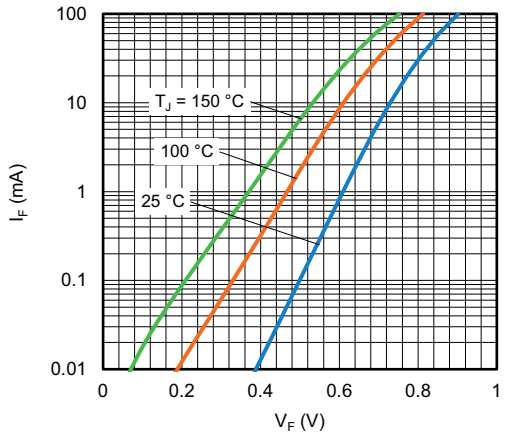


Fig. 1 - Typical Forward Current vs. Forward Voltage

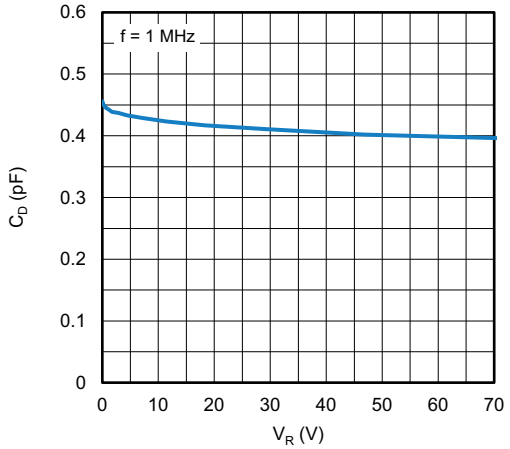


Fig. 3 - Typical Capacitance vs. Reverse Voltage

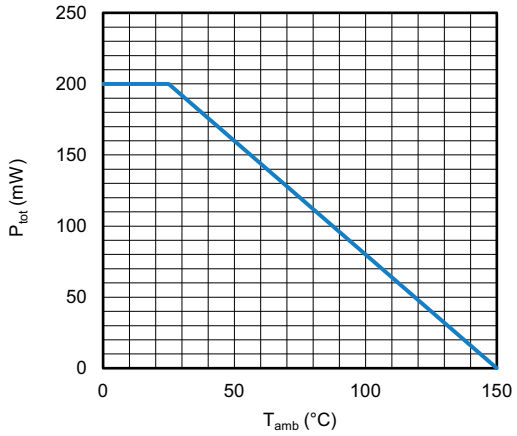


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

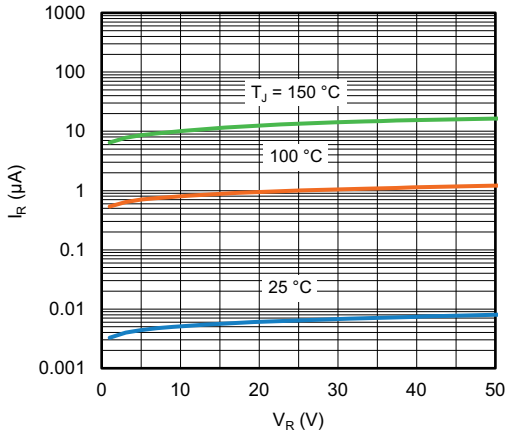
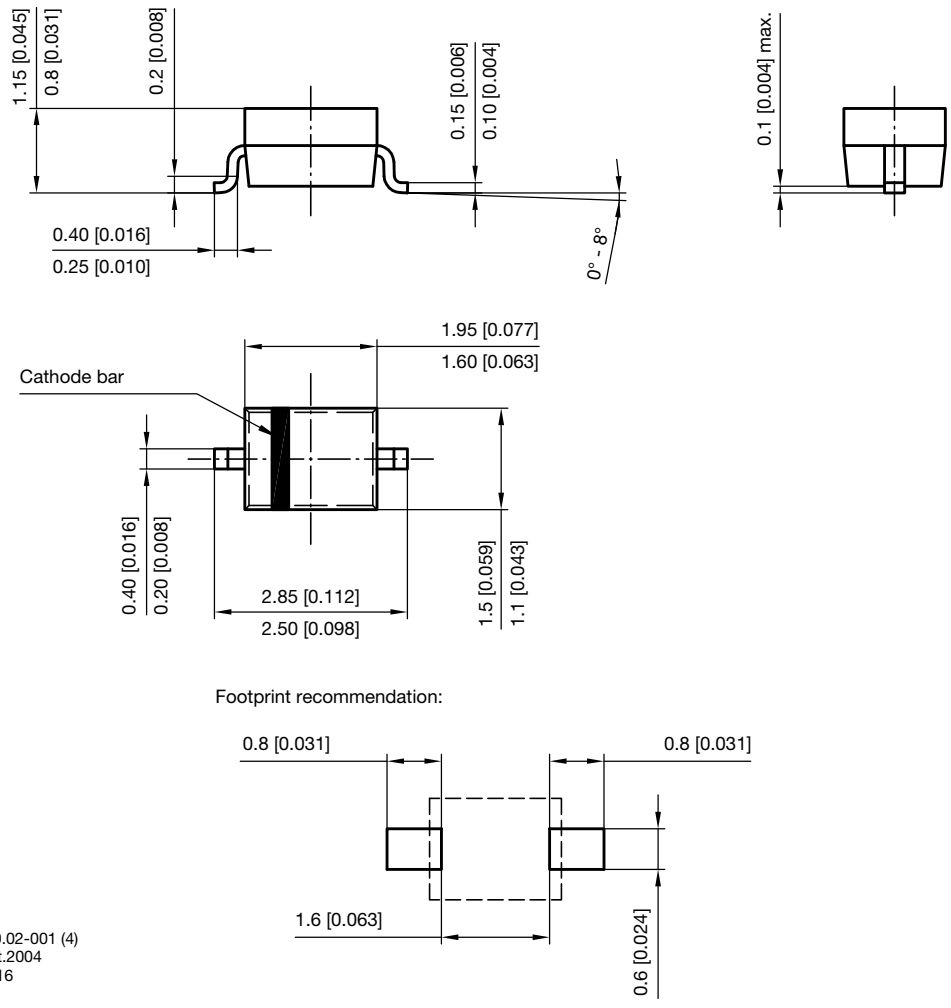


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

PACKAGE DIMENSIONS in millimeters (inches) **SOD-323**



Footprint recommendation:

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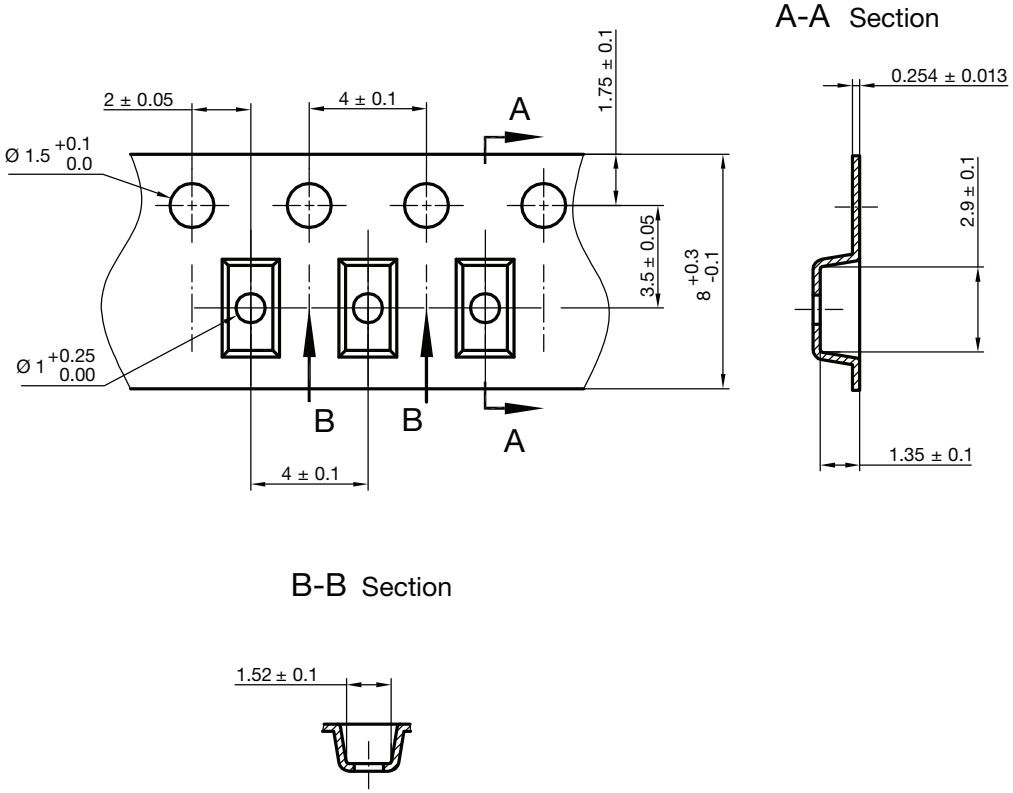
22771

CARRIER TAPE SOD-323



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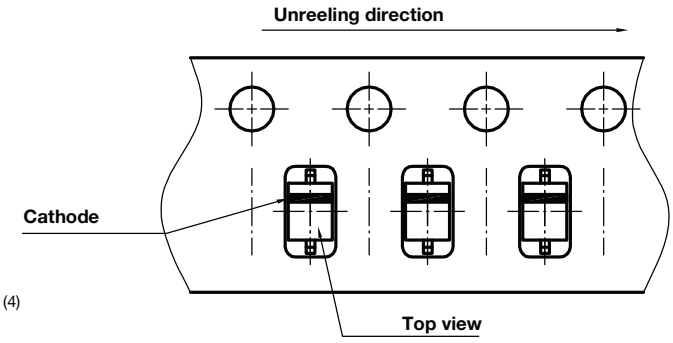
ORIENTATION IN CARRIER TAPE SOD-323



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