

Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- This diode is also available in other case styles including the DO-35 case with the type designation 1N4151, and the MiniMELF case with the type designation LL4151.
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

MECHANICAL DATA

Case: SOD-323

Weight: approx. 4.3 mg

Packaging codes/options:

GS18/10K per 13" reel (8 mm tape), 10K/box

GS08/3K per 7" reel (8 mm tape), 15K/box

PARTS TABLE

PART	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
1N4151WS-V	1N4151WS-V-GS18 or 1N4151WS-V-GS08	A5	Single diode	Tape and reel

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

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

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

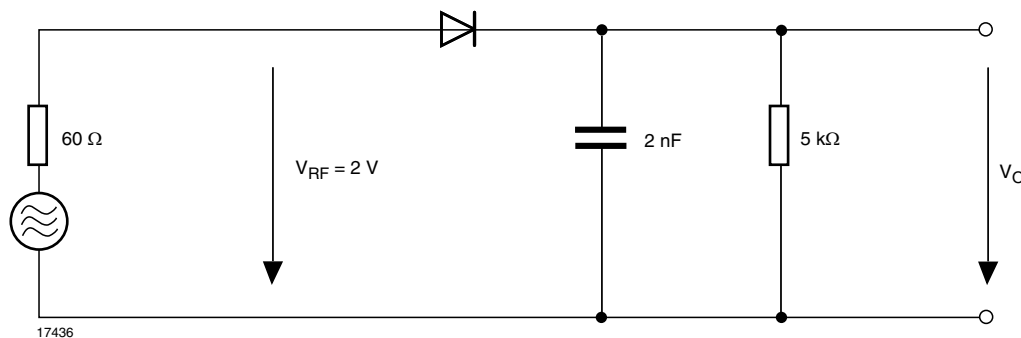
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air ⁽¹⁾		R_{thJA}	650	K/W
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 150	$^{\circ}\text{C}$

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature.

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50\text{ mA}$	V_F			1	V
Leakage current	$V_R = 50\text{ V}$	I_R			50	nA
	$V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	I_R			50	μA
Reverse breakdown voltage	$I_R = 5\text{ }\mu\text{A}$ (pulsed)	$V_{(BR)}$	75			V
Capacitance	$V_F = V_R = 0\text{ V}$				2	pF
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 10\text{ mA}$ $i_R = 1\text{ mA}$	t_{rr}			4	ns
	$I_F = 10\text{ mA}, i_R = 1\text{ mA},$ $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$	t_{rr}			2	ns
Rectification efficiency	$f = 100\text{ MHz}, V_{RF} = 2\text{ V}$	η_v	0.45			

RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT



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

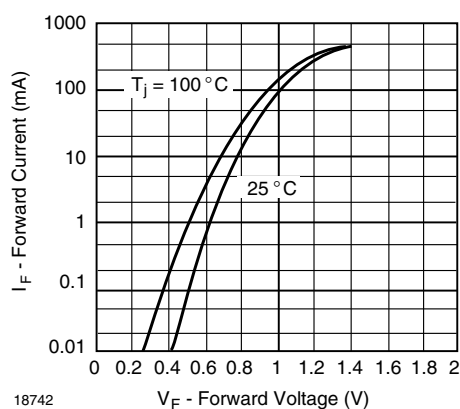


Fig. 1 - Forward Current vs. Forward Voltage

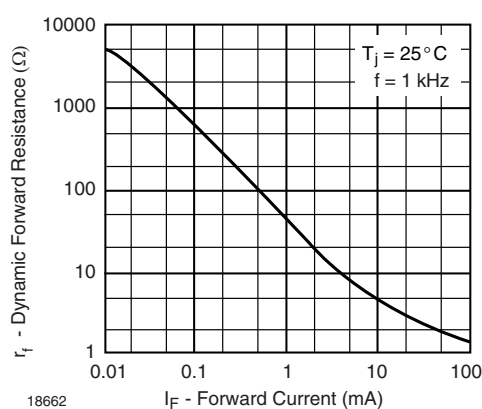


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

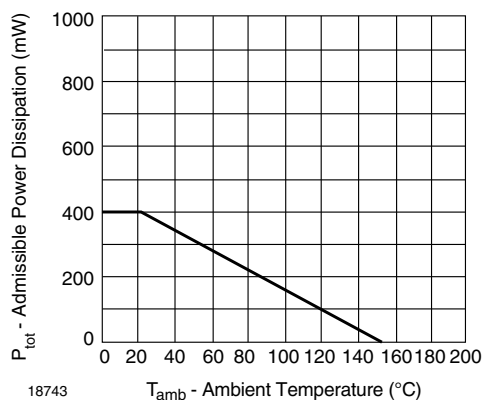


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

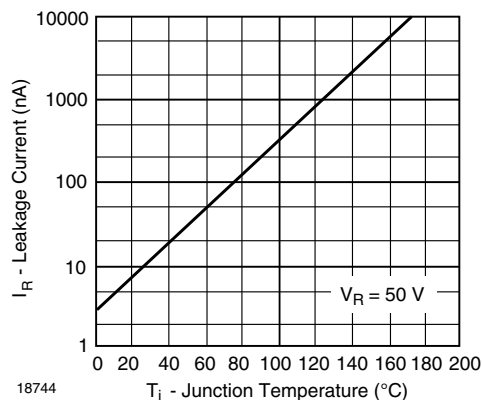


Fig. 5 - Leakage Current vs. Junction Temperature

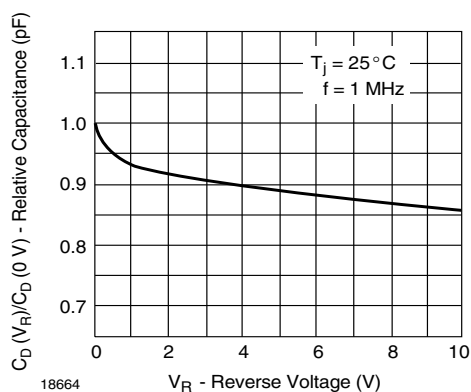


Fig. 4 - Relative Capacitance vs. Reverse Voltage

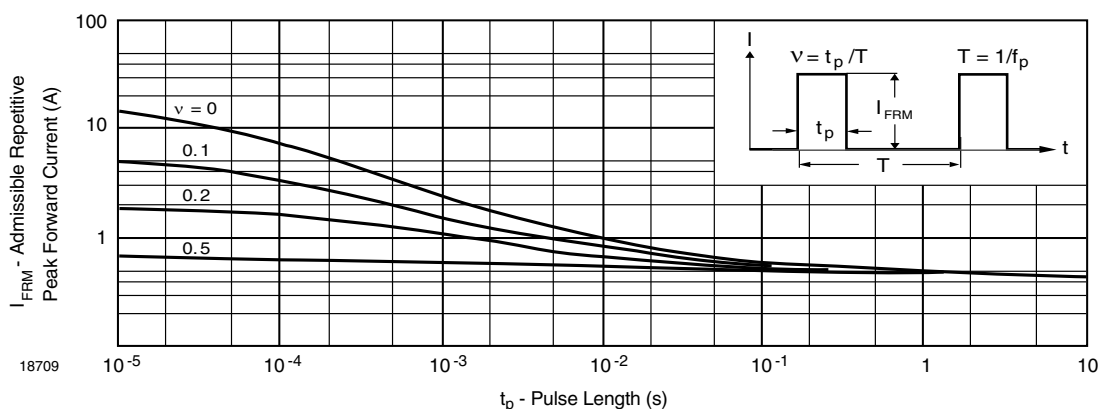
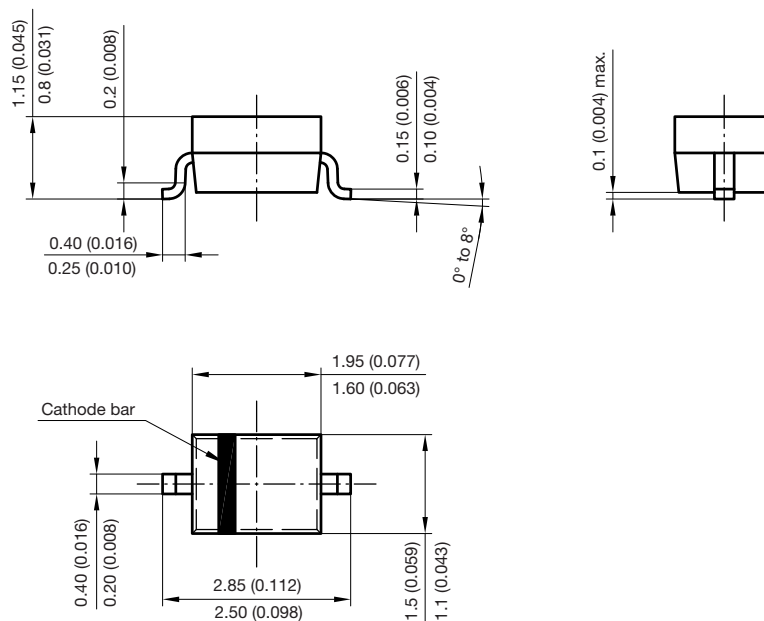


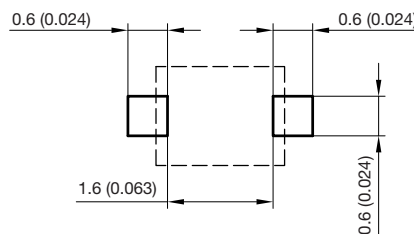
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



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



Foot print recommendation:



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17443



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