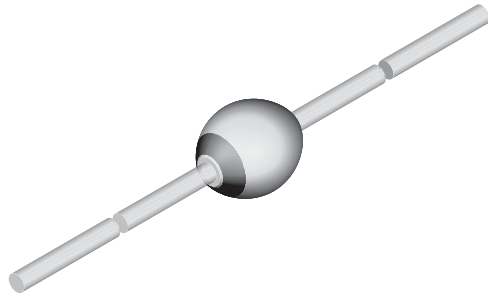




# Standard Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

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### FEATURES

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT HALOGEN FREE

### APPLICATIONS

- Rectification diode

### MECHANICAL DATA

Case: SOD-57

Terminals: plated axial leads, solderable per MIL-STD-750, method 2026

Polarity: color band denotes cathode end

Mounting position: any

Weight: approx. 369 mg

ORDERING INFORMATION (Example)			
DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
BYT51M	BYT51M-TR	5000 per 10" tape and reel	25 000
BYT51M	BYT51M-TAP	5000 per ammopack	25 000

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
BYT51A	$V_R = 50\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51B	$V_R = 100\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51D	$V_R = 200\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51G	$V_R = 400\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51J	$V_R = 600\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51K	$V_R = 800\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51M	$V_R = 1000\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57



<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYT51A	$V_R = V_{RRM}$	50	V
		BYT51B	$V_R = V_{RRM}$	100	V
		BYT51D	$V_R = V_{RRM}$	200	V
		BYT51G	$V_R = V_{RRM}$	400	V
		BYT51J	$V_R = V_{RRM}$	600	V
		BYT51K	$V_R = V_{RRM}$	800	V
BYT51M	$V_R = V_{RRM}$	1000	V	V	
Peak forward surge current	$t_p = 10\text{ ms}$ , half sine wave		$I_{FSM}$	50	A
Repetitive peak forward current			$I_{FRM}$	9	A
Average forward current	$l = 10\text{ mm}$		$I_{F(AV)}$	1.5	A
	On PC board		$I_{F(AV)}$	1	A
Junction and storage temperature range			$T_J = T_{stg}$	-55 to +175	$^{\circ}\text{C}$
Non repetitive reverse avalanche energy	$I(BR)R = 1\text{ A}$		ER	20	mJ

<b>MAXIMUM THERMAL RESISTANCE</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	Lead length $l = 10\text{ mm}$ , $T_L = \text{constant}$	$R_{thJA}$	45	K/W
	On PC board with spacing 25 mm	$R_{thJA}$	100	K/W

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ A}$	$V_F$	-	0.95	1.1	V
	$I_F = 1\text{ A}$ , $T_J = 175\text{ }^{\circ}\text{C}$	$V_F$	-	-	1	V
Reverse current	$V_R = V_{RRM}$	$I_R$	-	-	1	$\mu\text{A}$
	$V_R = V_{RRM}$ , $T_J = 150\text{ }^{\circ}\text{C}$	$I_R$	-	-	100	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$	$t_{rr}$	-	-	4	$\mu\text{s}$

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

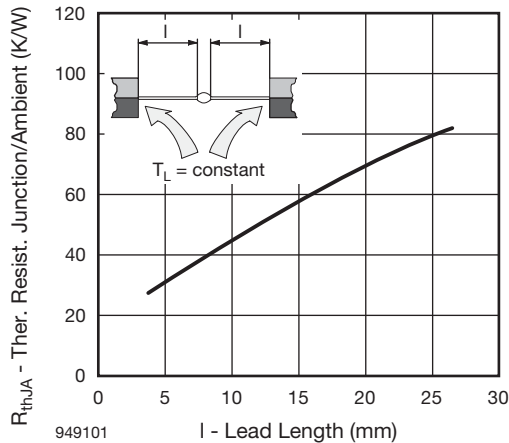


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

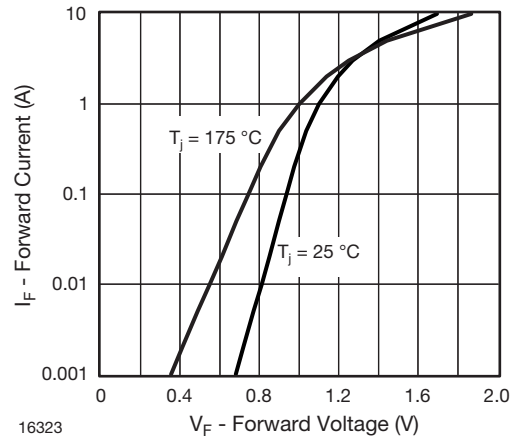


Fig. 2 - Forward Current vs. Forward Voltage

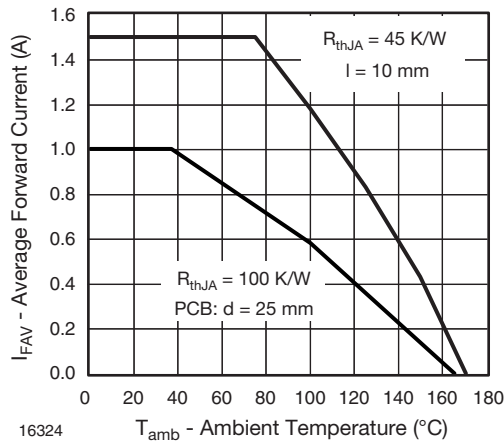


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

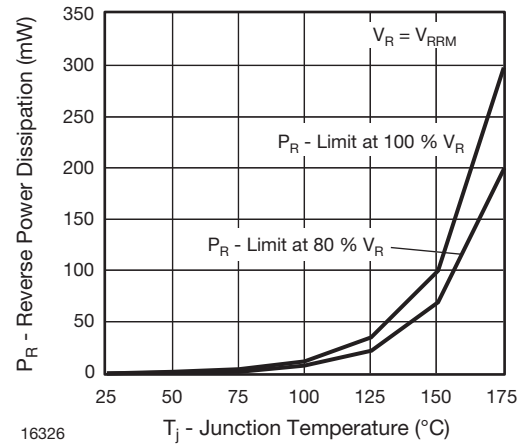


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

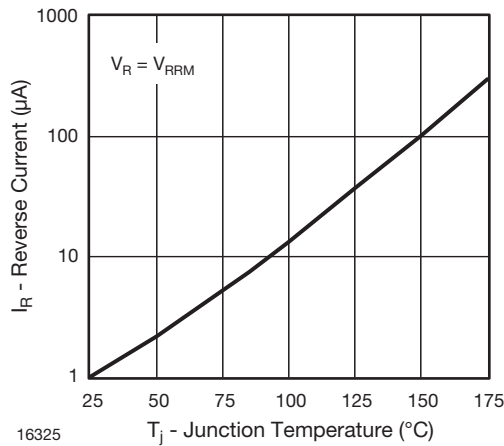


Fig. 4 - Reverse Current vs. Junction Temperature

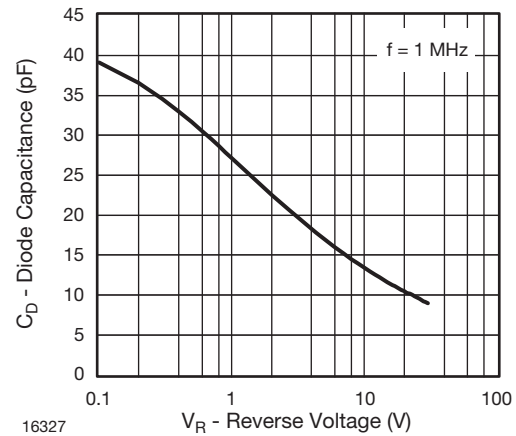
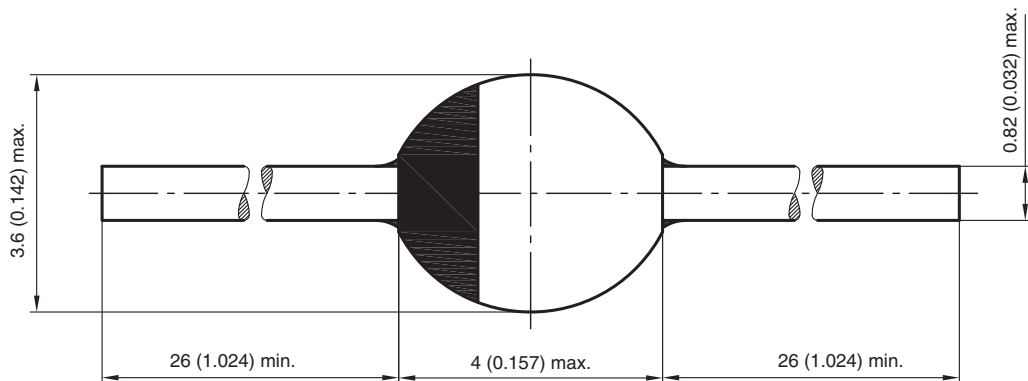


Fig. 6 - Diode Capacitance vs. Reverse Voltage

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-57**



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