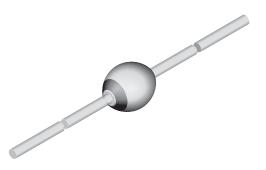


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Vishay Semiconductors

# **Standard Avalanche Sinterglass Diode**



### **FEATURES**

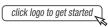
- · Glass passivated junction
- · Hermetically sealed package
- · Low reverse current
- · High surge current loading
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



**HALOGEN** FREE

#### 949539

### **DESIGN SUPPORT TOOLS**



### **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

#### **APPLICATIONS**

· Rectification, general purpose

ORDERING INFORMATION (Example)					
DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY		
BYX86	BYX86TR	5000 per 10" tape and reel	25 000		
BYX86	BYX86TAP	5000 per ammopack	25 000		

PARTS TABLE				
PART	TYPE DIFFERENTIATION	PACKAGE		
BYX82	$V_R = 200 \text{ V}; I_{F(AV)} = 2 \text{ A}$	SOD-57		
BYX83	$V_R = 400 \text{ V}; I_{F(AV)} = 2 \text{ A}$	SOD-57		
BYX84	V <sub>R</sub> = 600 V; I <sub>F(AV)</sub> = 2 A	SOD-57		
BYX85	V <sub>R</sub> = 800 V; I <sub>F(AV)</sub> = 2 A	SOD-57		
BYX86	V <sub>R</sub> = 1000 V; I <sub>F(AV)</sub> = 2 A	SOD-57		

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
		BYX82	$V_R = V_{RRM}$	200	V
		BYX83	$V_R = V_{RRM}$	400	V
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYX84	$V_R = V_{RRM}$	600	V
Tovordo voltago		BYX85	$V_R = V_{RRM}$	800	V
		BYX86	$V_R = V_{RRM}$	1000	V
Peak forward surge current	$t_p = 10$ ms, half sine wave		I <sub>FSM</sub>	50	Α
Repetitive peak forward current			I <sub>FRM</sub>	10	Α
Average forward current	T <sub>amb</sub> ≤ 45 °C		I <sub>F(AV)</sub>	2	Α
i <sup>2</sup> t-rating			i <sup>2</sup> t	8	A <sup>2</sup> s
Junction and storage temperature range			$T_j = T_{stg}$	-55 to +175	°C



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MAXIMUM THERMAL RESISTANCE (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Junction ambient	Lead length I = 10 mm, T <sub>L</sub> = constant	$R_{thJA}$	45	K/W	
Junction ambient	On PC board with spacing 25 mm	$R_{thJA}$	100	K/W	

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 1 A	V <sub>F</sub>	-	0.9	1	V
Reverse current	$V_R = V_{RRM}$	I <sub>R</sub>	-	0.1	1	μΑ
	$V_R = V_{RRM}$ , $T_j = 100  ^{\circ}C$	I <sub>R</sub>	-	10	25	μΑ
Diode capacitance	V <sub>R</sub> = 4 V, f = 1 MHz	C <sub>D</sub>	-	20	-	pF
Reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, i <sub>R</sub> = 0.25 A	t <sub>rr</sub>	-	2000	4000	ns
Reverse recovery charge	$I_F = I_R = 1 \text{ A, dI/dt} = 5 \text{ A/}\mu\text{s}$	Q <sub>rr</sub>	-	3	6	μC

## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

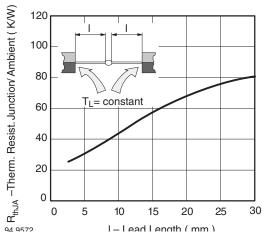


Fig. 1 - Max. Thermal Resistance vs. Lead Length

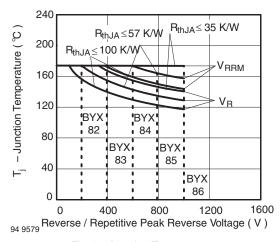


Fig. 2 - Junction Temperature vs. Reverse / Repetitive Peak Reverse Voltage

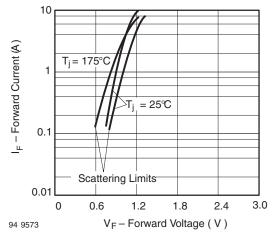


Fig. 3 - Forward Current vs. Forward Voltage

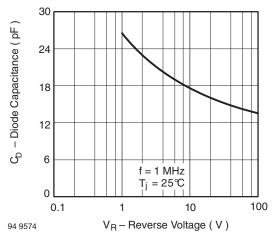


Fig. 4 - Typ. Diode Capacitance vs. Reverse Voltage

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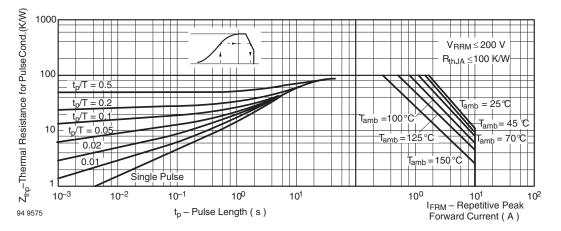


Fig. 5 - Thermal Response

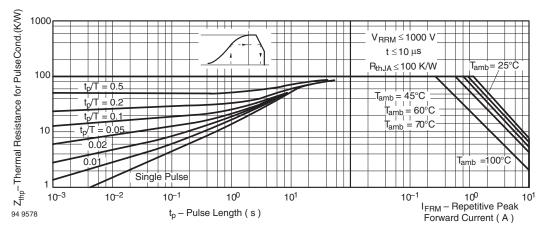


Fig. 6 - Thermal Response

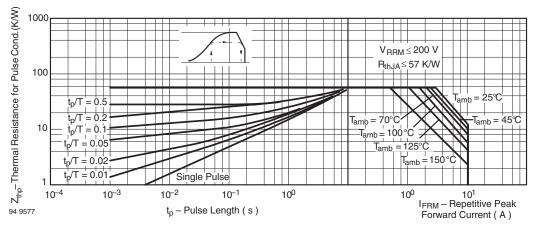


Fig. 7 - Thermal Response

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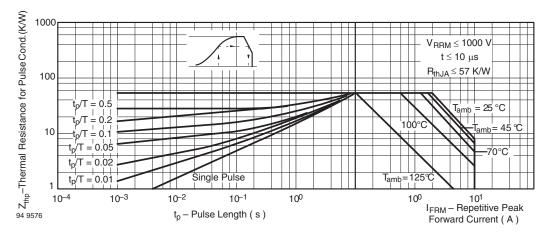
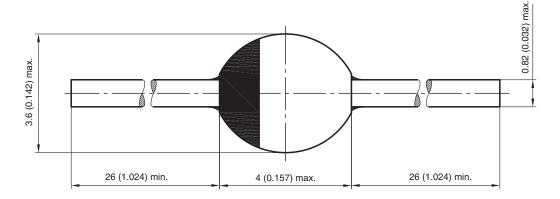


Fig. 8 - Thermal Response

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



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