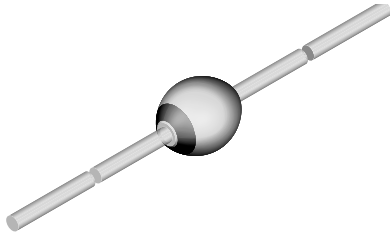




## Standard Avalanche Sinterglass Diode



949539

### 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### 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 ammpack	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	$V_R = 600\text{ V}; I_{F(AV)} = 2\text{ A}$	SOD-57	
BYX85	$V_R = 800\text{ V}; I_{F(AV)} = 2\text{ A}$	SOD-57	
BYX86	$V_R = 1000\text{ V}; I_{F(AV)} = 2\text{ A}$	SOD-57	

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

**MAXIMUM THERMAL RESISTANCE** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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

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

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ A}$	$V_F$	-	0.9	1	V
Reverse current	$V_R = V_{RRM}$	$I_R$	-	0.1	1	$\mu\text{A}$
	$V_R = V_{RRM}$ , $T_J = 100\text{ }^{\circ}\text{C}$	$I_R$	-	10	25	$\mu\text{A}$
Diode capacitance	$V_R = 4\text{ V}$ , $f = 1\text{ MHz}$	$C_D$	-	20	-	pF
Reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_{RR} = 0.25\text{ A}$	$t_{rr}$	-	2	4	$\mu\text{s}$
Reverse recovery charge	$I_F = I_R = 1\text{ A}$ , $di/dt = 5\text{ A}/\mu\text{s}$	$Q_{rr}$	-	3	6	$\mu\text{C}$

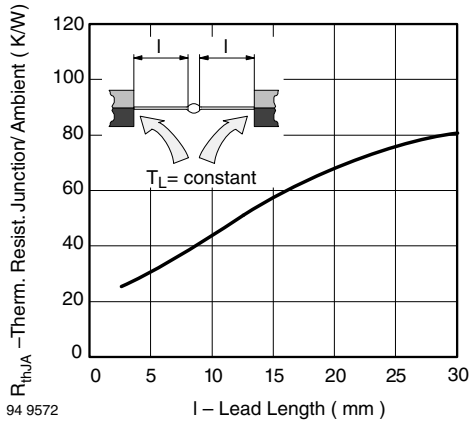
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

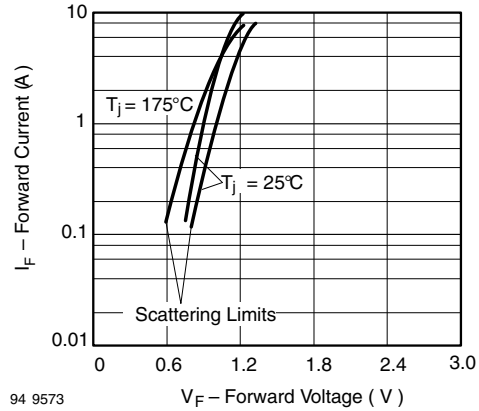


Fig. 3 - Forward Current vs. Forward Voltage

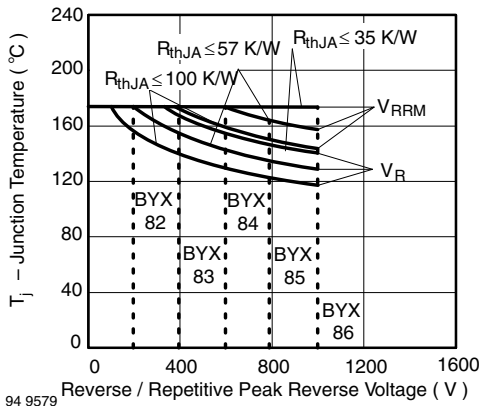


Fig. 2 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

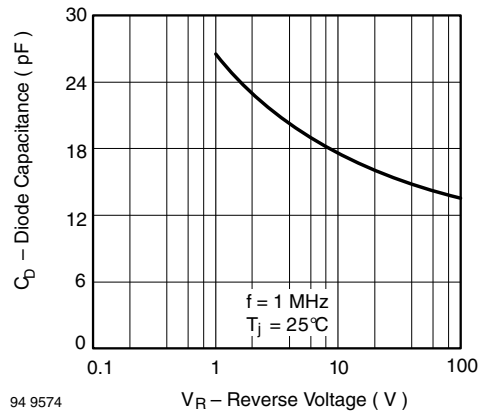


Fig. 4 - Typ. Diode Capacitance vs. Reverse Voltage

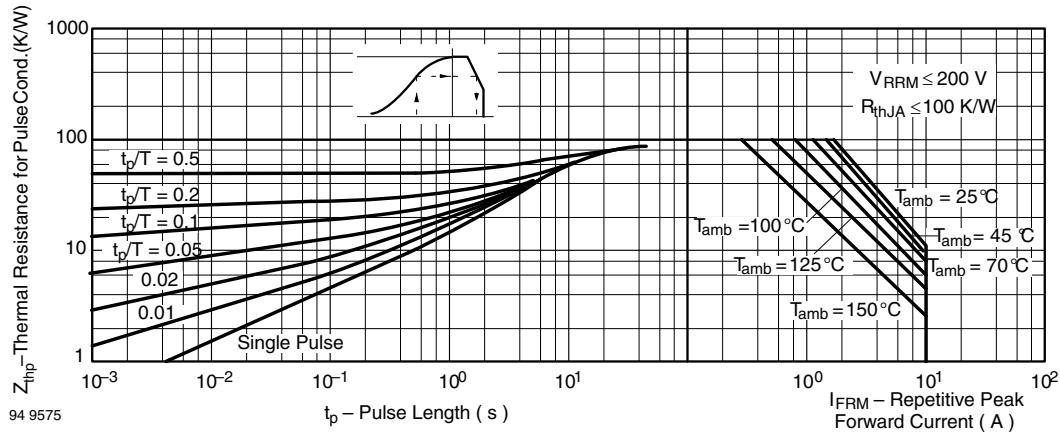


Fig. 5 - Thermal Response

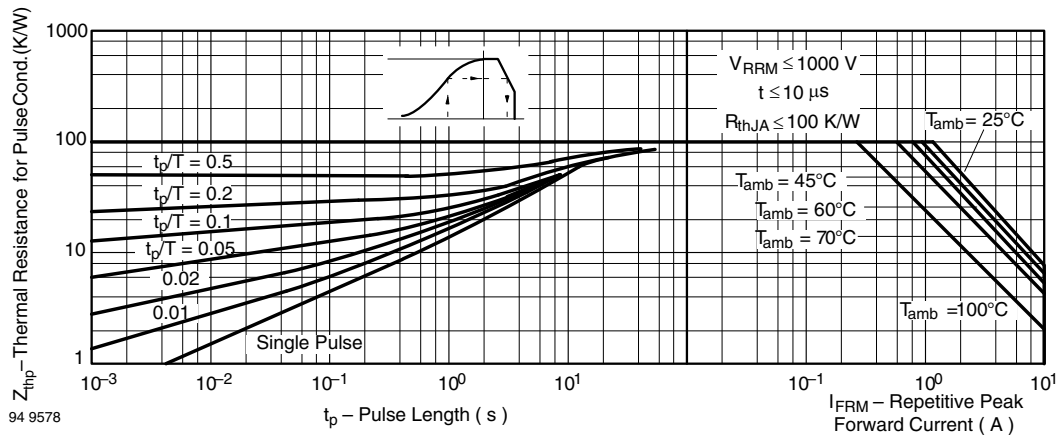


Fig. 6 - Thermal Response

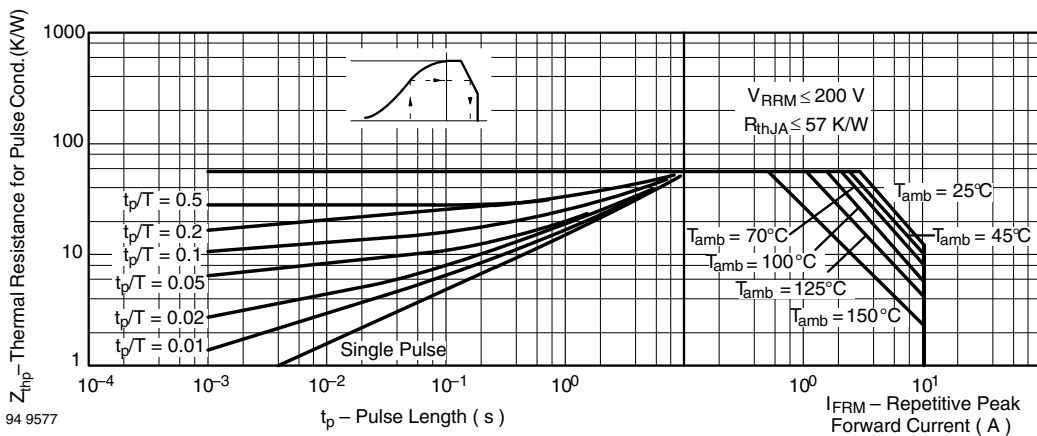


Fig. 7 - Thermal Response

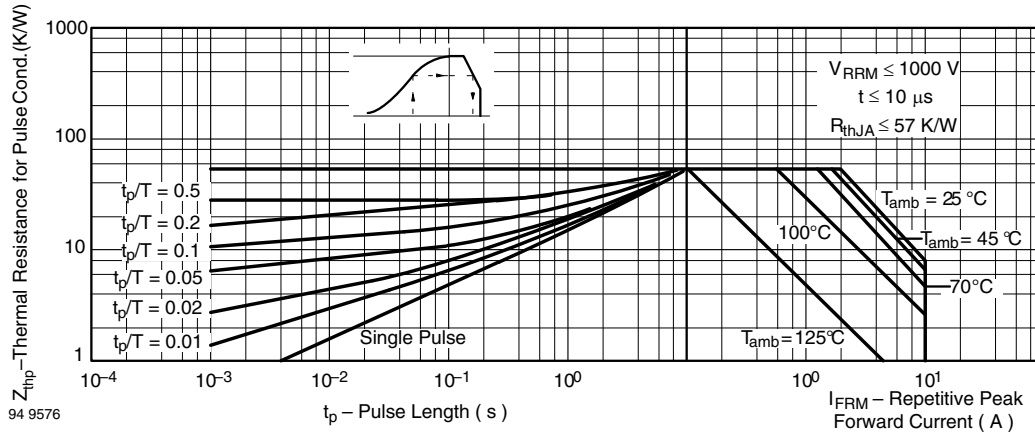
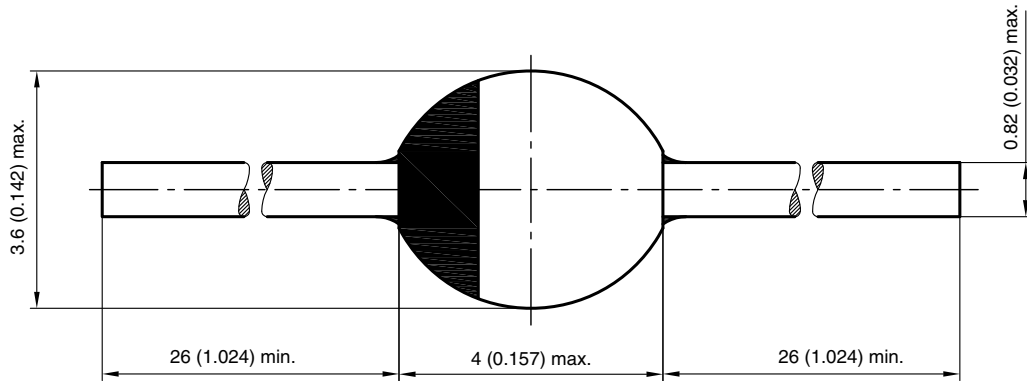


Fig. 8 - Thermal Response

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



20543  
 Rev. 3 - Date: 09.February 2005  
 Document no.:6.563-5006.3-4



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