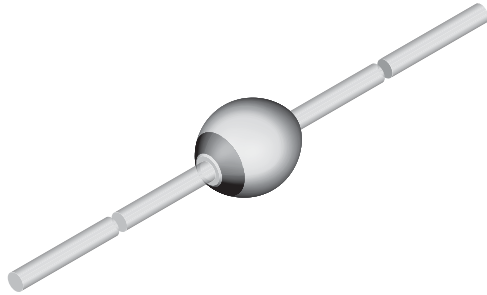


## Standard Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

[click logo to get started](#)
**3D**  
Models  
Available

### 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

### 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**

### 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	$^\circ\text{C}$

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	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$	$t_{rr}$	-	2000	4000	ns
Reverse recovery charge	$I_F = I_R = 1\text{ A}$ , $di/dt = 5\text{ A}/\mu\text{s}$	$Q_{rr}$	-	3	6	$\mu\text{C}$

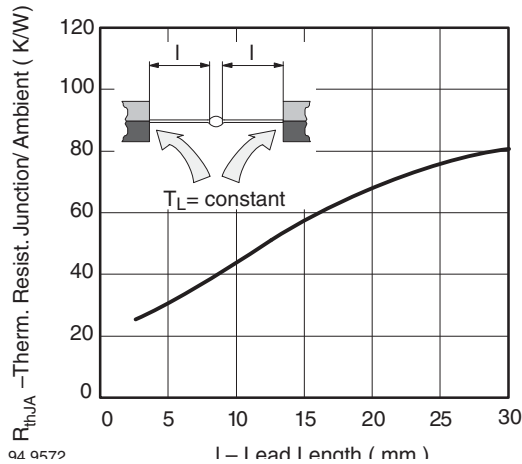
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

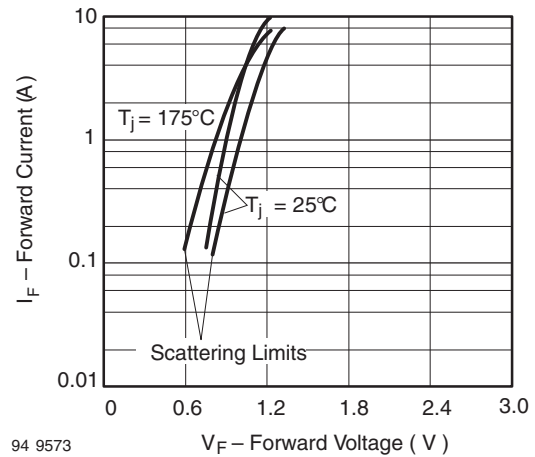


Fig. 3 - Forward Current vs. Forward Voltage

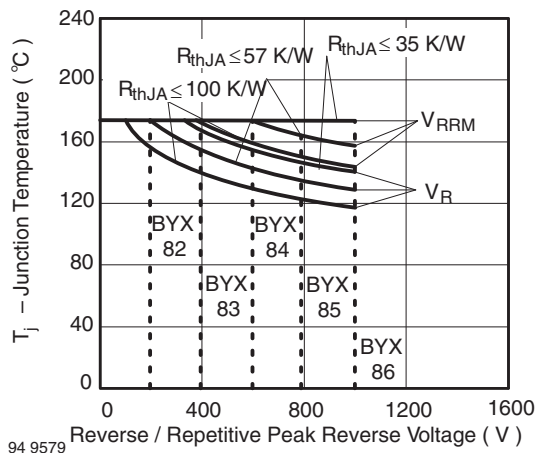


Fig. 2 - Junction Temperature vs. Reverse / Repetitive Peak Reverse Voltage

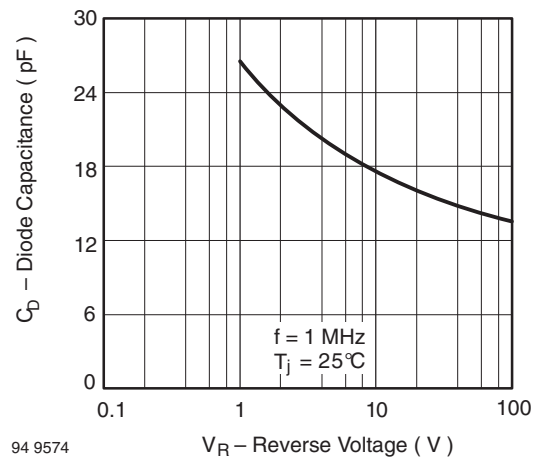


Fig. 4 - Typ. Diode Capacitance vs. Reverse Voltage

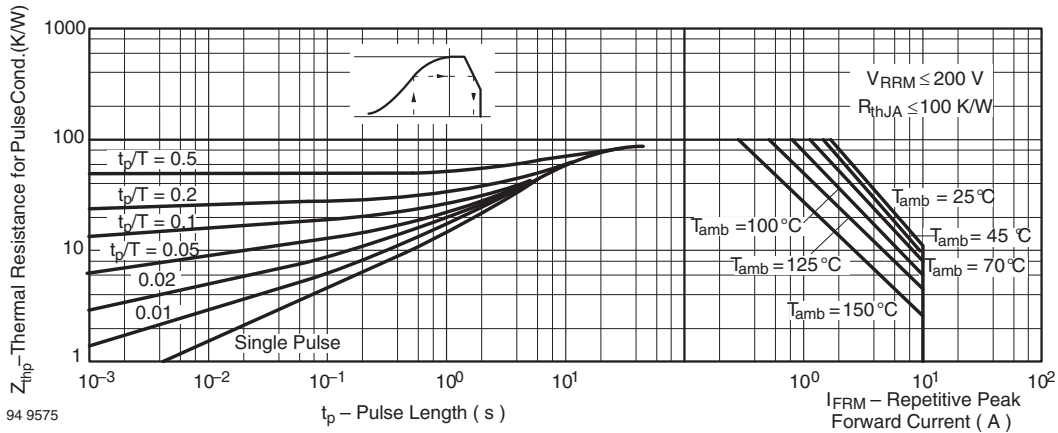


Fig. 5 - Thermal Response

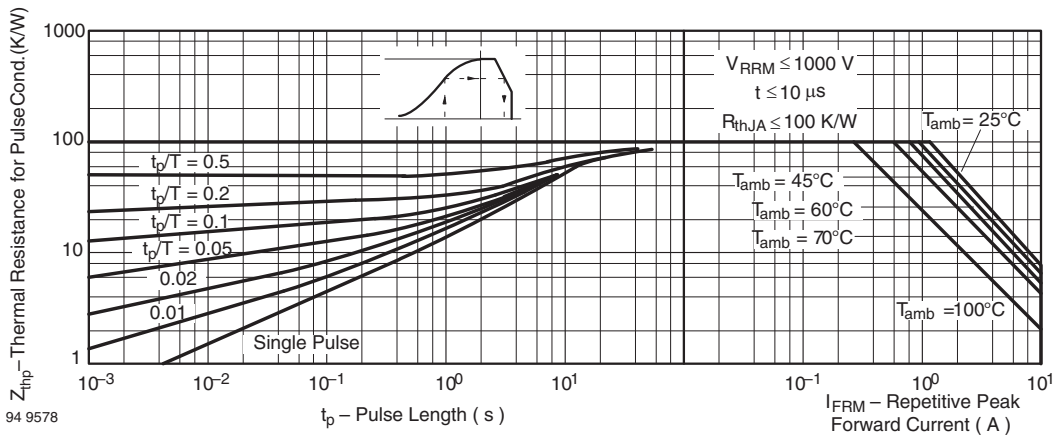


Fig. 6 - Thermal Response

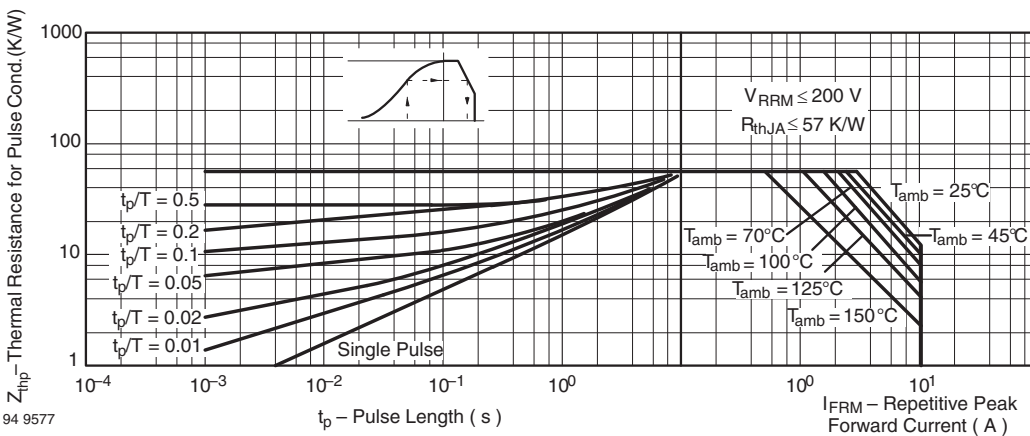


Fig. 7 - Thermal Response

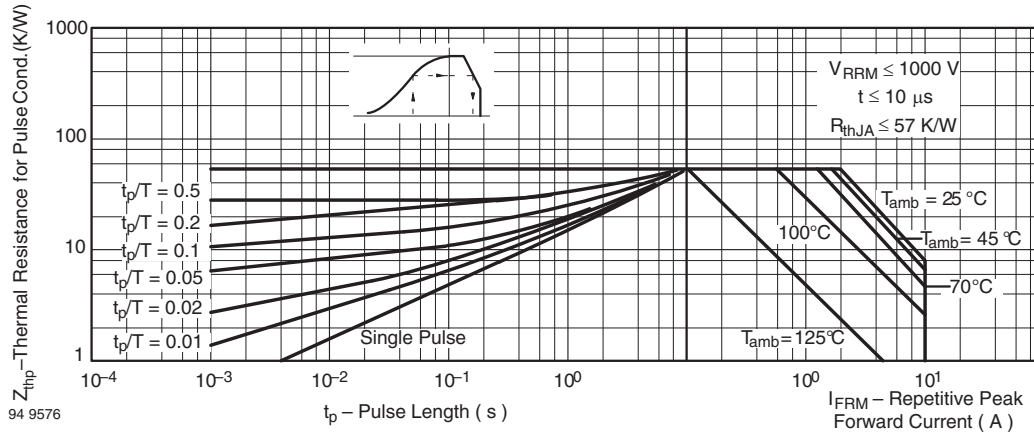
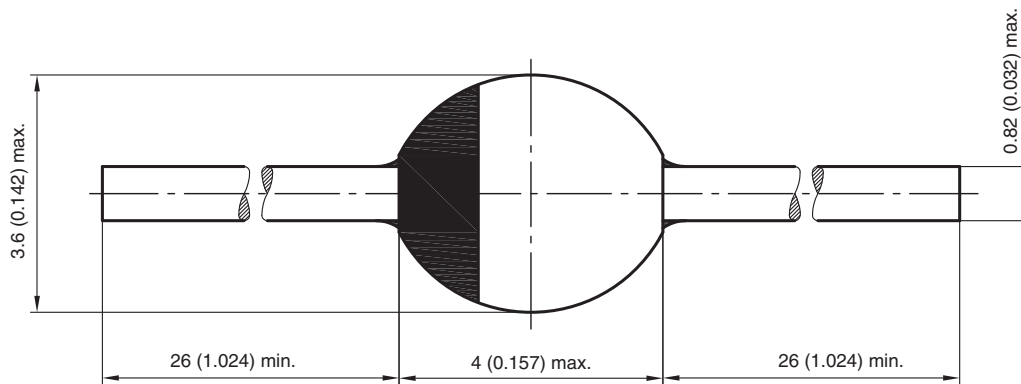


Fig. 8 - Thermal Response

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



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