



## Fast Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

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### FEATURES

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



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

### APPLICATIONS

- Fast rectification and switching diode for example for TV-line output circuits and switch mode power supply

### 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
BYV16	BYV16-TR	5000 per 10" tape and reel	25 000
BYV16	BYV16-TAP	5000 per ammpack	25 000

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
BYV12	$V_R = 100\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYV13	$V_R = 400\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYV14	$V_R = 600\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYV15	$V_R = 800\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYV16	$V_R = 1000\text{ V}; I_{F(AV)} = 1.5\text{ A}$	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	BYV12	$V_R = V_{RRM}$	100	V
		BYV13	$V_R = V_{RRM}$	400	V
		BYV14	$V_R = V_{RRM}$	600	V
		BYV15	$V_R = V_{RRM}$	800	V
		BYV16	$V_R = V_{RRM}$	1000	V
Peak forward surge current	$t_p = 10\text{ ms}$ , half sine wave		$I_{FSM}$	40	A
Repetitive peak forward current			$I_{FRM}$	9	A
Average forward current	$\phi = 180^\circ$		$I_{F(AV)}$	1.5	A
Non repetitive reverse avalanche energy	$I_{(BR)R} = 0.4\text{ A}$		$E_R$	10	mJ
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	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ A}$		$V_F$	-	-	1.5	V
Reverse current	$V_R = V_{RRM}$		$I_R$	-	1	5	$\mu\text{A}$
	$V_R = V_{RRM}$ , $T_j = 150\text{ }^{\circ}\text{C}$		$I_R$	-	60	150	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $t_R = 0.25\text{ A}$		$t_{rr}$	-	-	300	ns
Reverse recovery charge	$I_F = 1\text{ A}$ , $di/dt = 5\text{ A}/\mu\text{s}$		$Q_{rr}$	-	-	200	nC

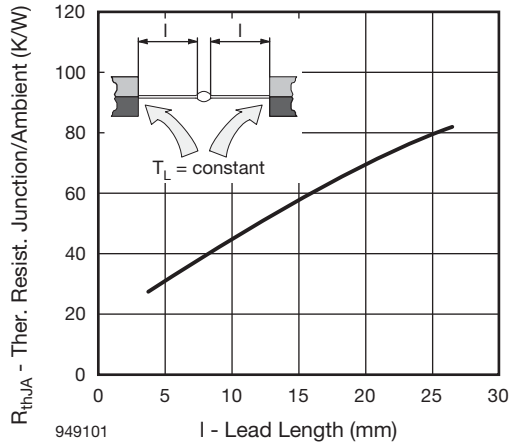
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

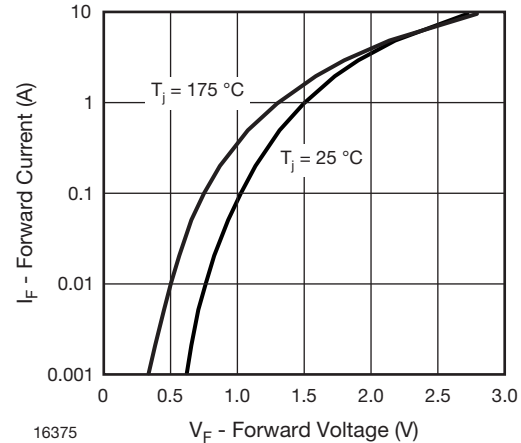


Fig. 3 - Forward Current vs. Forward Voltage

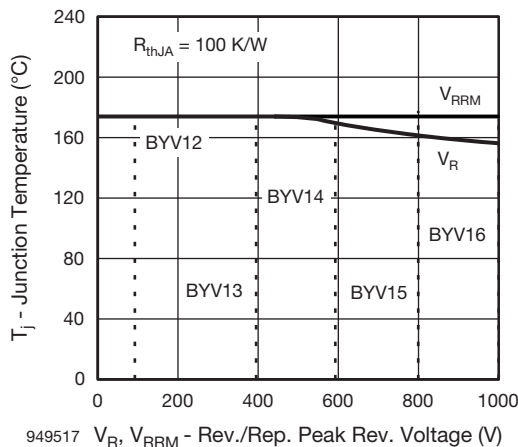


Fig. 2 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

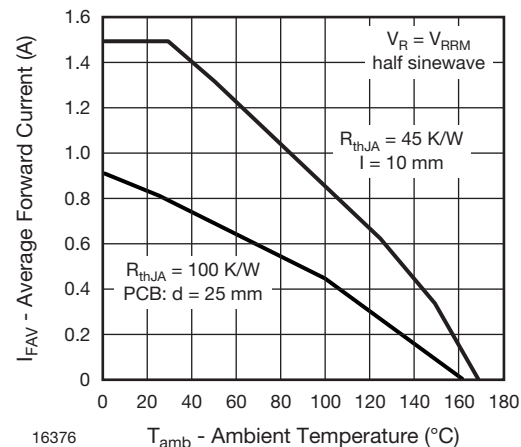


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

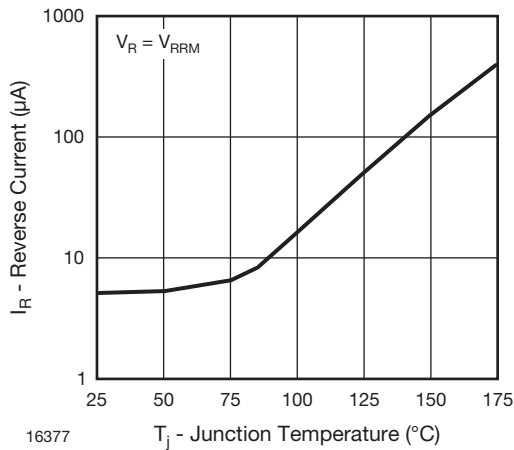


Fig. 5 - Reverse Current vs. Junction Temperature

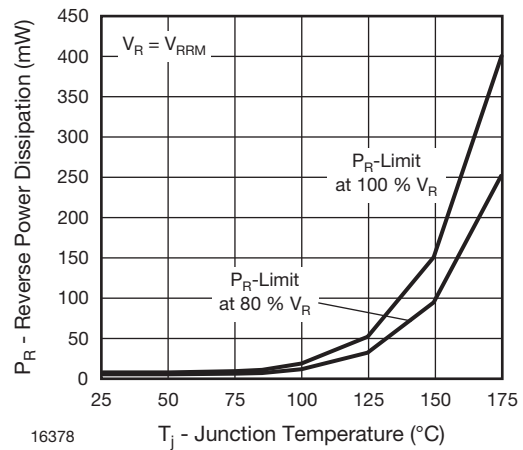


Fig. 6 - Max. Reverse Power Dissipation vs. Junction Temperature

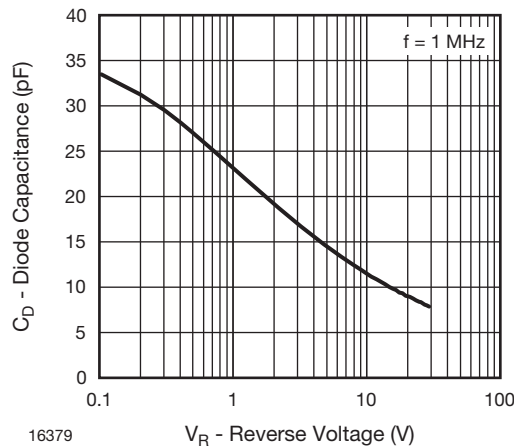


Fig. 7 - Diode Capacitance vs. Reverse Voltage

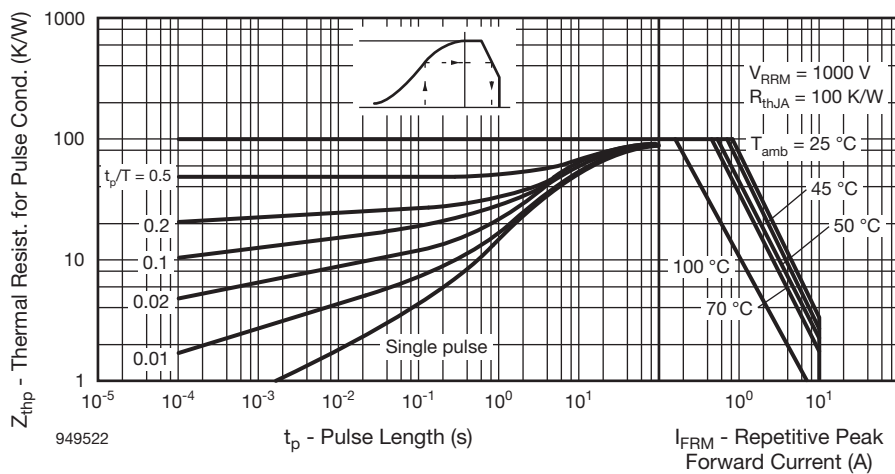
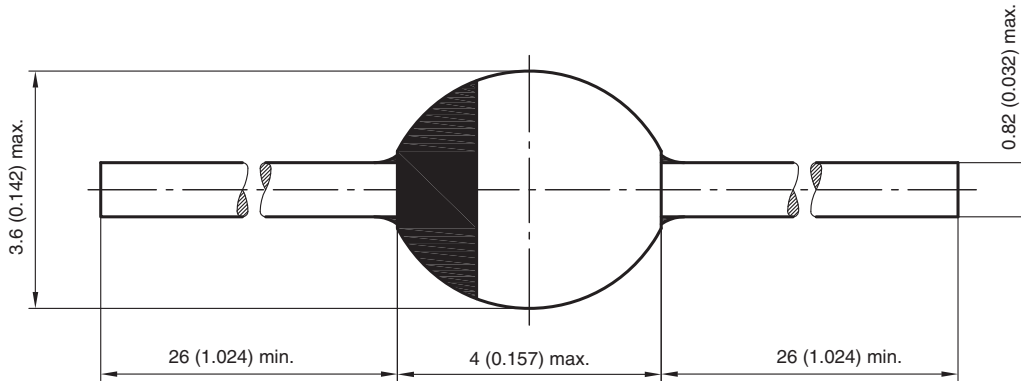


Fig. 8 - Thermal Response



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



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