

## Ultra-Fast Avalanche Sinterglass Diode



949539

### FEATURES

- Glass passivated junction
- Hermetically sealed axial-leaded glass envelope
- Low reverse current
- Ultra fast soft recovery switching
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


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

### APPLICATIONS

- Electronic ballast
- SMPS

### 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
BYV27-600	BYV27-600-TR	5000 per 10" tape and reel	25 000
BYV27-600	BYV27-600-TAP	5000 per ammpack	25 000

### PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BYV27-600	$V_R = 600\text{ V}; I_{F(AV)} = 2\text{ A}$	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	BYV27-600	$V_R = V_{RRM}$	600	V
Peak forward surge current	$t_p = 10\text{ ms}$ , half sine wave		$I_{FSM}$	50	A
Average forward current	$T_{amb} = 50\text{ }^\circ\text{C}$ , $I = 10\text{ mm}$		$I_{F(AV)}$	2	A
Non repetitive reverse avalanche energy	Inductive load, $I_{(BR)R} = 400\text{ mA}$		$E_R$	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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ A}$		$V_F$	-	-	1.15	V
	$I_F = 3\text{ A}$		$V_F$	-	-	1.35	V
	$I_F = 1\text{ A}, T_j = 175\text{ }^{\circ}\text{C}$		$V_F$	-	-	0.85	V
	$I_F = 3\text{ A}, T_j = 175\text{ }^{\circ}\text{C}$		$V_F$	-	-	1.15	V
Reverse current	$V_R = V_{RRM}$		$I_R$	-	-	5	$\mu\text{A}$
	$V_R = V_{RRM}, T_j = 150\text{ }^{\circ}\text{C}$		$I_R$	-	-	150	$\mu\text{A}$
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$	BYV27-600	$V_{(BR)R}$	600	-	-	V
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, t_R = 0.25\text{ A}$		$t_{rr}$	-	-	40	ns
Forward recovery	$I_F = 1\text{ A}$		$V_{FP}$	-	3.4	-	V
Forward recovery time	$I_F = 1\text{ A}$		$t_{fr}$	-	250	-	ns

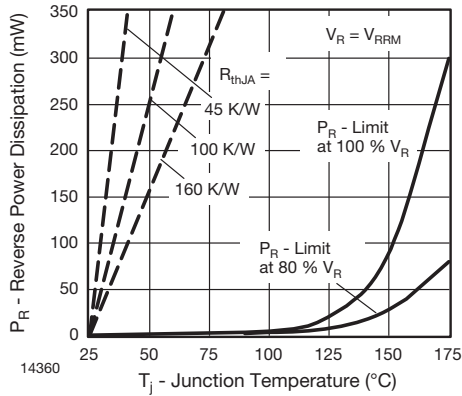
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

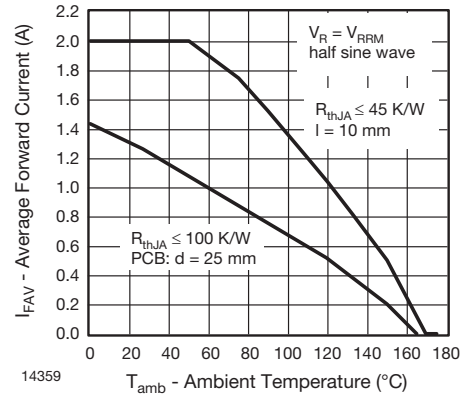


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

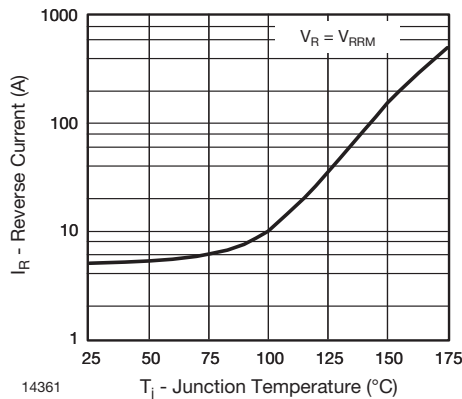


Fig. 2 - Max. Reverse Current vs. Junction Temperature

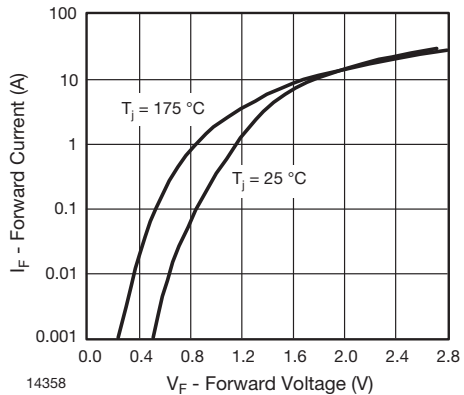


Fig. 4 - Max. Forward Current vs. Forward Voltage

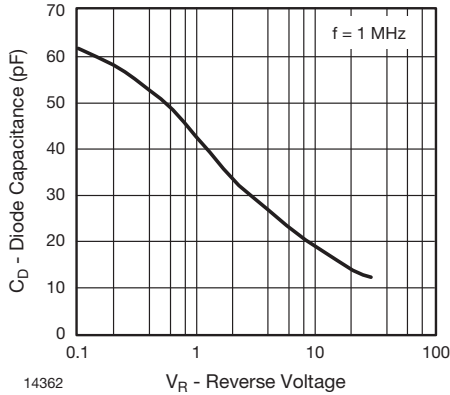
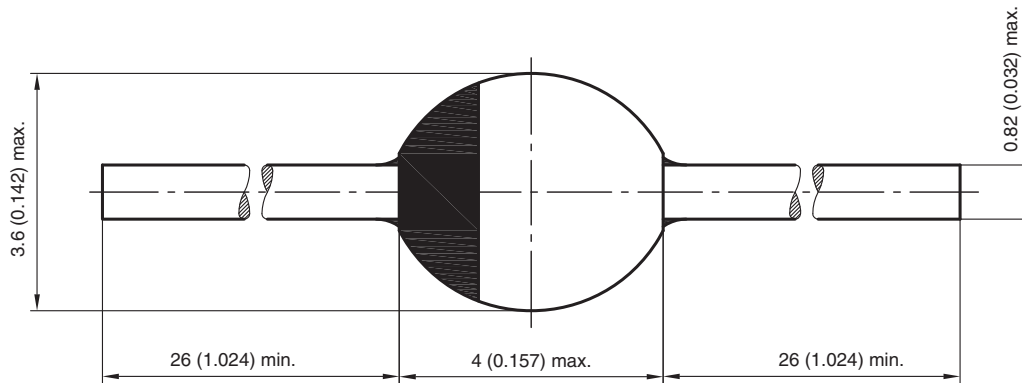


Fig. 5 - Typ. Diode Capacitance vs. Reverse Voltage

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



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