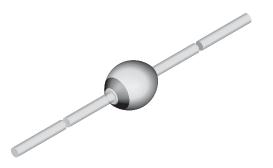


# Vishay Semiconductors

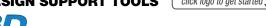
# **Ultra-Fast Avalanche Sinterglass Diode**



949539

### **DESIGN SUPPORT TOOLS**

click logo to get started.



## **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



**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	ERING 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 ammopack	25 000			

PARTS TABLE					
PART	TYPE DIFFERENTIATION	PACKAGE			
BYV27-600	$V_R = 600 \text{ V}; I_{F(AV)} = 2 \text{ A}$	SOD-57			

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	TION PART		VALUE	UNIT	
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYV27-600	$V_R = V_{RRM}$	600	V	
Peak forward surge current	$t_p = 10$ ms, half sine wave		I <sub>FSM</sub>	50	Α	
Average forward current	$T_{amb} = 50  ^{\circ}\text{C}, I = 10  \text{mm}$		I <sub>F(AV)</sub>	2	Α	
Non repetitive reverse avalanche energy	Inductive load, I <sub>(BR)R</sub> = 400 mA		E <sub>R</sub>	10	mJ	
Junction and storage temperature range			$T_i = T_{sta}$	- 55 to + 175	°C	

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	



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 1 A		$V_{F}$	-	-	1.15	V
	I <sub>F</sub> = 3 A		$V_{F}$	-	-	1.35	V
	I <sub>F</sub> = 1 A, T <sub>j</sub> = 175 °C		$V_{F}$	-	-	0.85	V
	I <sub>F</sub> = 3 A, T <sub>j</sub> = 175 °C		$V_{F}$	-	-	1.15	V
Reverse current	$V_R = V_{RRM}$		I <sub>R</sub>	-	-	5	μΑ
	$V_R = V_{RRM}$ , $T_j = 150  ^{\circ}C$		I <sub>R</sub>	-	-	150	μΑ
Reverse breakdown voltage	I <sub>R</sub> = 100 μA	BYV27-600	V <sub>(BR)R</sub>	600	-	-	V
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>	-	-	40	ns
Forward recovery	I <sub>F</sub> = 1 A		$V_{FP}$	-	3.4	-	V
Forward recovery time	I <sub>F</sub> = 1 A		t <sub>fr</sub>	-	250	-	ns

2.2

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

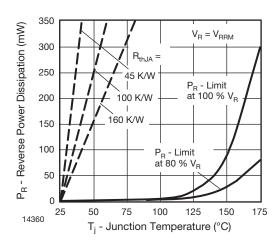


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

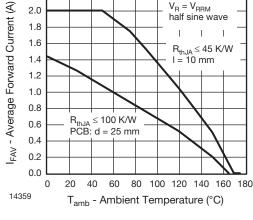


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

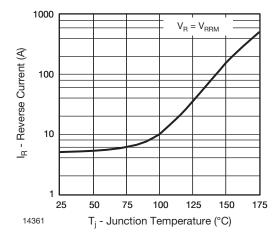


Fig. 2 - Max. Reverse Current vs. Junction Temperature

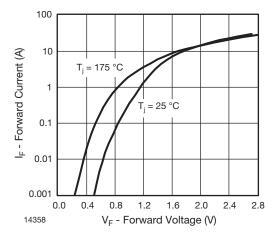


Fig. 4 - Max. Forward Current vs. Forward Voltage



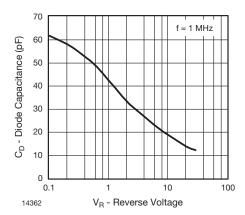
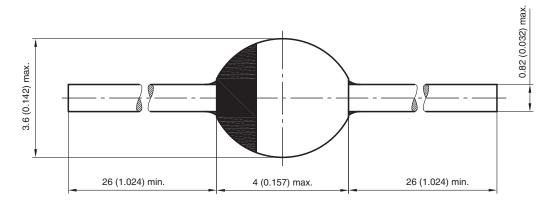


Fig. 5 - Typ. Diode Capacitance vs. Reverse Voltage

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



20543

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