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**Vishay Semiconductors** 

# **Ultra-Fast Avalanche Sinterglass Diode**

**FEATURES** 

Glass passivated junction

Ultra fast soft recovery switching

www.vishay.com/doc?99912

for definitions of compliance

Low reverse current

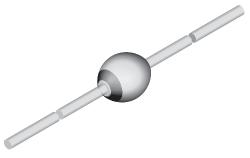
**APPLICATIONS** 

Electronic ballast

SMPS

Material categorization:

· Hermetically sealed axial-leaded glass envelope



949539

click logo to get started.

### **DESIGN SUPPORT TOOLS**



### **MECHANICAL DATA**

Case: SOD-57

Terminals: plated axial method 2026

Polarity: color band denotes cathode end

Mounting position: any

Weight: approx. 369 mg

IA	
al leads, solderable per MIL-STD-750,	

**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 25 000 5000 per ammopack

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 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 <sub>p</sub> = 10 ms, half sine wave		I <sub>FSM</sub>	50	А	
Average forward current	T <sub>amb</sub> = 50 °C, I = 10 mm		I <sub>F(AV)</sub>	2	А	
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			$T_j = T_{stg}$	- 55 to + 175	°C	

<b>MAXIMUM THERMAL RESISTANCE</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Junction ambient	Lead length I = 10 mm, $T_L$ = constant	R <sub>thJA</sub>	45	K/W	
	On PC board with spacing 25 mm	R <sub>thJA</sub>	100	K/W	

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RoHS COMPLIANT HALOGEN

please see FREE

**BYV27-600** 



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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 <sub>F</sub>	-	-	1.15	V
	I <sub>F</sub> = 3 A		V <sub>F</sub>	-	-	1.35	V
	I <sub>F</sub> = 1 A, T <sub>j</sub> = 175 °C		V <sub>F</sub>	-	-	0.85	V
	I <sub>F</sub> = 3 A, T <sub>j</sub> = 175 °C		V <sub>F</sub>	-	-	1.15	V
Reverse current	$V_{R} = V_{RRM}$		I <sub>R</sub>	-	-	5	μA
	$V_R = V_{RRM}$ , $T_j = 150 \ ^\circ C$		I <sub>R</sub>	-	-	150	μA
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 <sub>FP</sub>	-	3.4	-	V
Forward recovery time	I <sub>F</sub> = 1 A		t <sub>fr</sub>	-	250	-	ns

TYPICAL CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

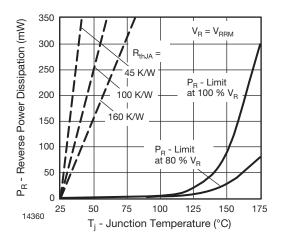


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

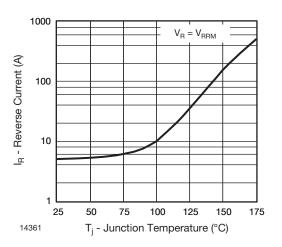


Fig. 2 - Max. Reverse Current vs. Junction Temperature

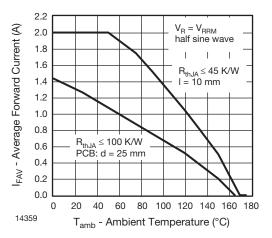


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

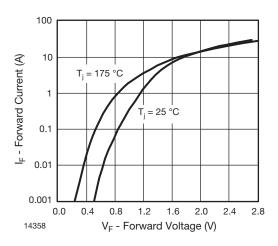


Fig. 4 - Max. Forward Current vs. Forward Voltage

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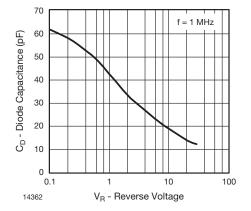
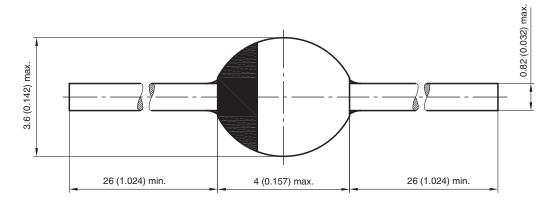


Fig. 5 - Typ. Diode Capacitance vs. Reverse Voltage

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



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