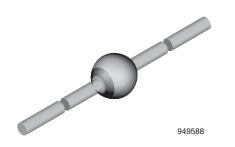




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Vishay Semiconductors

# **Ultra-Fast Avalanche Sinterglass Diode**



## **DESIGN SUPPORT TOOLS**

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### **MECHANICAL DATA**

Case: SOD-64

Terminals: plated axial leads, solderable per MIL-STD-750,

method 2026

Polarity: color band denotes cathode end

Mounting position: any Weight: approx. 858 mg

#### **FEATURES**

- · Controlled avalanche characteristic
- · Low forward voltage
- · Ultra fast recovery time
- · Glass passivated junction
- · Hermetically sealed package
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912





COMPLIANT HALOGEN FREE

#### **APPLICATIONS**

Very fast rectification e.g. for switch mode power supply

ORDERING INFORMATION (Example)					
DEVICE NAME	DEVICE NAME ORDERING CODE TAPED UNITS MINIMUM ORDER				
BYV28-200	BYV28-200-TR	2500 per 10" tape and reel	12 500		
BYV28-200	BYV28-200-TAP	2500 per ammopack	12 500		

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
BYV28-50	$V_R = 50 \text{ V}; I_{F(AV)} = 3.5 \text{ A}$	SOD-64
BYV28-100	V <sub>R</sub> = 100 V; I <sub>F(AV)</sub> = 3.5 A	SOD-64
BYV28-150	V <sub>R</sub> = 150 V; I <sub>F(AV)</sub> = 3.5 A	SOD-64
BYV28-200	$V_R = 200 \text{ V}; I_{F(AV)} = 3.5 \text{ A}$	SOD-64

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
	See electrical characteristics	BYV28-50	$V_R = V_{RRM}$	50	V	
Reverse voltage = repetitive peak reverse		BYV28-100	$V_R = V_{RRM}$	100	V	
voltage		BYV28-150	$V_R = V_{RRM}$	150	V	
		BYV28-200	$V_R = V_{RRM}$	200	V	
	See electrical characteristics	BYV28-50	$V_{RSM}$	55	V	
Dook roverse veltage, non repetitive		BYV28-100	$V_{RSM}$	110	V	
Peak reverse voltage, non repetitive		BYV28-150	$V_{RSM}$	165	V	
		BYV28-200	$V_{RSM}$	220	V	
Peak forward surge current	t <sub>p</sub> = 10 ms, half sine wave		I <sub>FSM</sub>	90	Α	
Repetitive peak forward current			I <sub>FRM</sub>	25	Α	
Average forward current			I <sub>F(AV)</sub>	3.5	Α	
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	I <sub>(BR)R</sub> = 1 A, Tj = 175 °C		E <sub>R</sub>	20	mJ	
Junction and storage temperature range			$T_j = T_{stg}$	-55 to +175	°C	



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MAXIMUM THERMAL RESISTANCE (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER TEST CONDITION		SYMBOL	SYMBOL VALUE			
Junction ambient	Lead length I = 10 mm, T <sub>L</sub> = constant	$R_{thJA}$	25	K/W		
	On PC board with spacing 25 mm	$R_{thJA}$	70	K/W		

<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> = 5 A		$V_{F}$	-	-	1.1	V
Forward voltage	I <sub>F</sub> = 5 A, T <sub>j</sub> = 175 °C		$V_{F}$	-	-	0.89	V
	$V_R = V_{RRM}$		I <sub>R</sub>	-	-	1	μΑ
Reverse current	V <sub>RSM</sub>		I <sub>R</sub>	-	-	100	μΑ
	$V_R = V_{RRM}$ , $T_j = 165$ °C		I <sub>R</sub>	-	-	150	μΑ
Reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1 \text{ A}, i_R = 0.25 \text{ A}$		t <sub>rr</sub>	-	-	30	ns

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

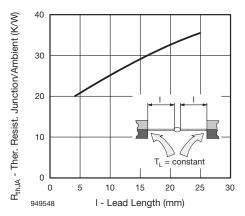


Fig. 1 - Max. Thermal Resistance vs. Lead Length

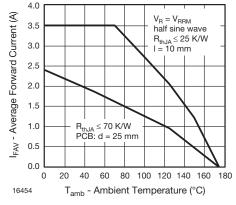


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

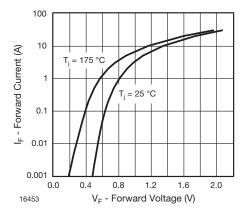


Fig. 2 - Forward Current vs. Forward Voltage

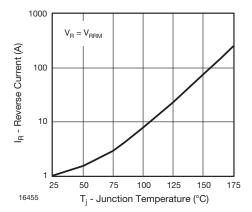


Fig. 4 - Reverse Current vs. Junction Temperature

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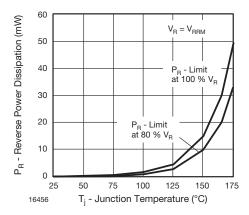


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

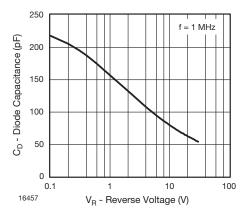
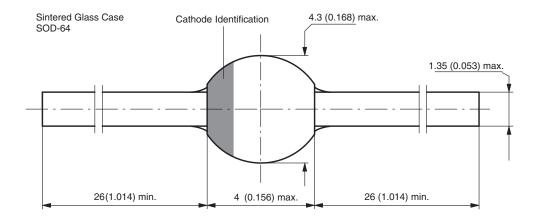


Fig. 6 - Diode Capacitance vs. Reverse Voltage

## PACKAGE DIMENSIONS in millimeters (inches): SOD-64



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