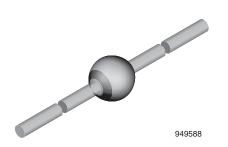


# Vishay Semiconductors

# **Fast Avalanche Sinterglass Diode**



#### **FEATURES**

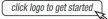
- · Glass passivated junction
- · Hermetically sealed package
- · Low reverse current
- · Soft recovery characteristics
- Controlled avalanche characteristics
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>



ROHS COMPLIANT HALOGEN

FREE

### **DESIGN SUPPORT TOOLS**





#### **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

### **APPLICATIONS**

• Fast "soft recovery" rectification diode

ORDERING INFORMATION (Example)						
DEVICE NAME	ME ORDERING CODE TAPED UNITS MINIMUM ORDER C					
BYT78	BYT78-TR	2500 per 10" tape and reel	12 500			
BYT78	BYT78-TAP	2500 per ammopack	12 500			

PARTS TABLE					
PART	TYPE DIFFERENTIATION	PACKAGE			
BYT77	$V_R = 800 \text{ V}; I_{F(AV)} = 3 \text{ A}$	SOD-64			
BYT78	V <sub>R</sub> = 1000 V; I <sub>F(AV)</sub> = 3 A	SOD-64			

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT		
Reverse voltage = repetitive peak reverse	See electrical characteristics	BYT77	$V_R = V_{RRM}$	800	V		
voltage	See electrical characteristics	BYT78	$V_R = V_{RRM}$	1000	V		
Peak forward surge current	t <sub>p</sub> = 10 ms, half sine wave		I <sub>FSM</sub>	100	Α		
Average forward current	T <sub>amb</sub> ≤ 45 °C		I <sub>F(AV)</sub>	3	Α		
Non repetitive reverse avalanche energy	I <sub>(BR)R</sub> = 0.4 A		E <sub>R</sub>	10	mJ		
Junction and storage temperature range			$T_j = T_{stg}$	-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	$R_{thJA}$	25	K/W		
Junction ambient	On PC board with spacing 25 mm	$R_{thJA}$	70	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> = 3 A		V <sub>F</sub>	-	1	1.2	V
Reverse current	$V_R = V_{RRM}$		I <sub>R</sub>	-	1	5	μΑ
	$V_R = V_{RRM}, T_j = 150  ^{\circ}C$		I <sub>R</sub>	-	60	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>	-	-	250	ns

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

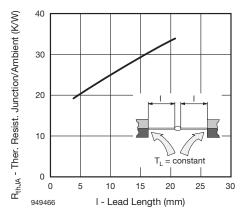


Fig. 1 - Max. Thermal Resistance vs. Lead Length

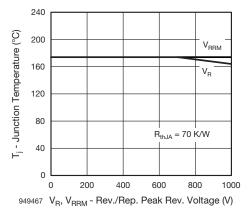


Fig. 2 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

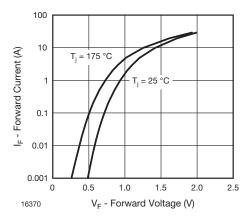


Fig. 3 - Forward Current vs. Forward Voltage

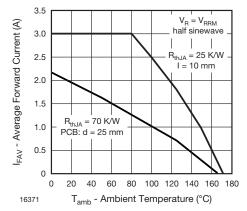


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature



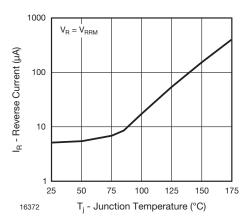


Fig. 5 - Reverse Current vs. Junction Temperature

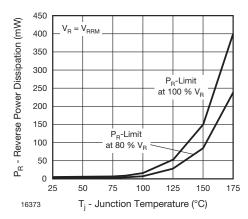


Fig. 6 - Max Reverse Power Dissipation vs. Junction Temperature

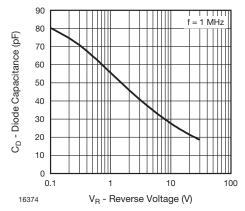
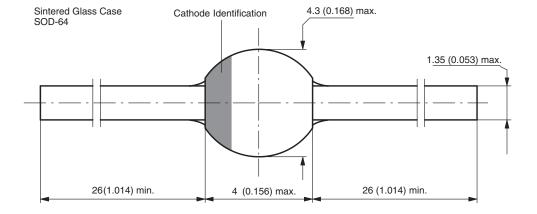


Fig. 7 - Diode Capacitance vs. Reverse Voltage

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



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