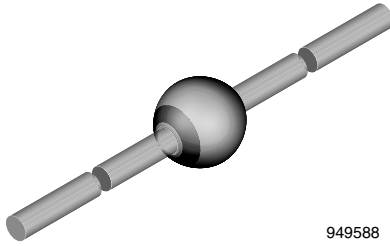


Fast Avalanche Sinterglass Diode



949588

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

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- Soft recovery characteristics
- Very fast reverse recovery time
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- Ultrafast rectification diode for switching mode power supplies

ORDERING INFORMATION (Example)

DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
BYW178	BYW178-TR	2500 per 10" tape and reel	12 500
BYW178	BYW178-TAP	2500 per ammpack	12 500

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BYW178	$V_R = 800\text{ V}$; $I_{F(AV)} = 3\text{ A}$	SOD-64

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	BYW178	$V_R = V_{RRM}$	800	V
Peak forward surge current	$t_p = 10\text{ ms}$, half sine wave		I_{FSM}	80	A
Repetitive peak forward current			I_{FRM}	15	
Average forward current			$I_{F(AV)}$	3	
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	$^\circ\text{C}$
Non repetitive reverse avalanche energy	$I_{(BR)R} = 1\text{ A}$		E_R	20	mJ

MAXIMUM THERMAL RESISTANCE ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction lead	Lead length $l = 10\text{ mm}$, $T_L = \text{constant}$	R_{thJL}	25	K/W
Junction ambient	On PC board with spacing 37.5 mm	R_{thJA}	70	K/W

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 3 A		V _F	-	-	1.9	V
Reverse current	V _R = V _{RRM}		I _R	-	-	1	μA
	V _R = V _{RRM} , T _j = 100 °C		I _R	-	-	20	μA
Reverse recovery current	I _F = 1 A, di _F /dt ≤ - 50 A/μs, V _{BATT} = 200 V		I _{RM}	-	2.2	-	ns
Reverse recovery time	I _F = 1 A, di _F /dt ≤ - 50 A/μs, V _{BATT} = 200 V, i _R = 0.25 x I _{RM}		t _{rr}	-	50	-	
Reverse recovery time (JEDEC)	I _F = 0.5 A, I _R = 1 A, i _R = 0.25		t _{rr}	-	-	60	

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

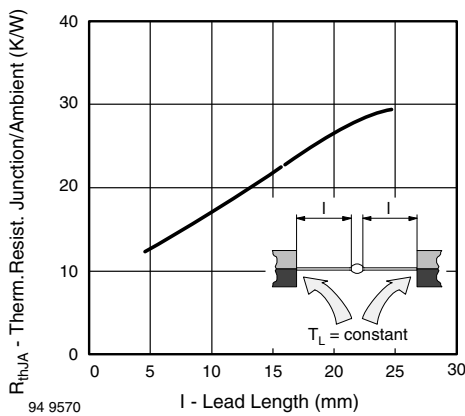


Fig. 1 - Max. Thermal Resistance vs. Lead Length

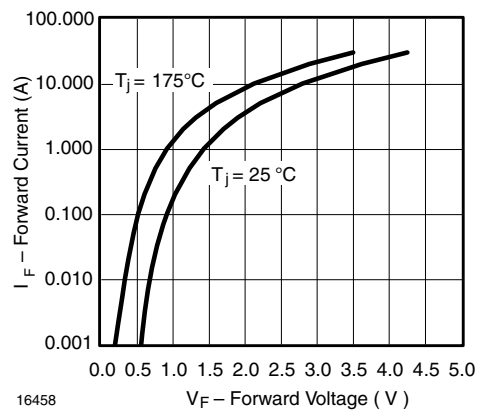


Fig. 3 - Forward Current vs. Forward Voltage

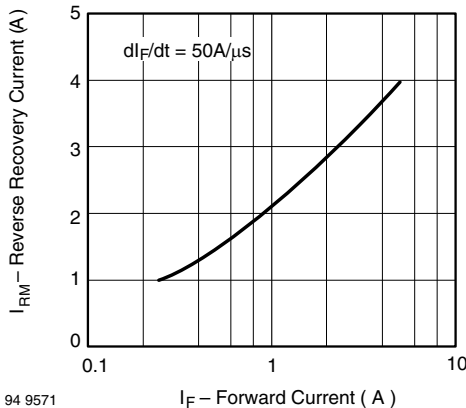


Fig. 2 - Typ. Reverse Recovery Current vs. Forward Current

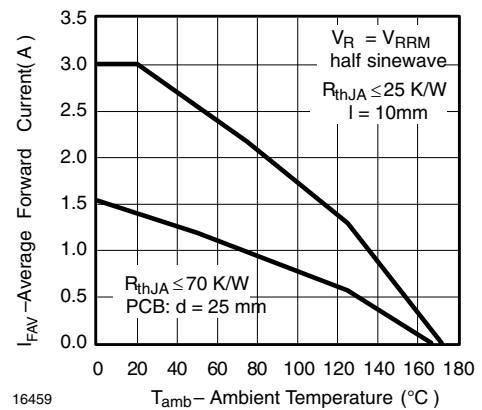


Fig. 4 - Max. Average Forward Current vs. Junction Temperature

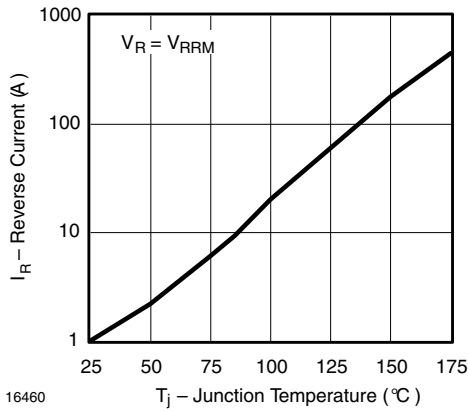


Fig. 5 - Reverse Current vs. Junction Temperature

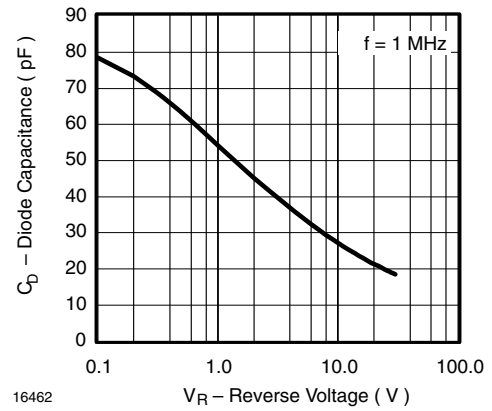


Fig. 7 - Diode Capacitance vs. Reverse Voltage

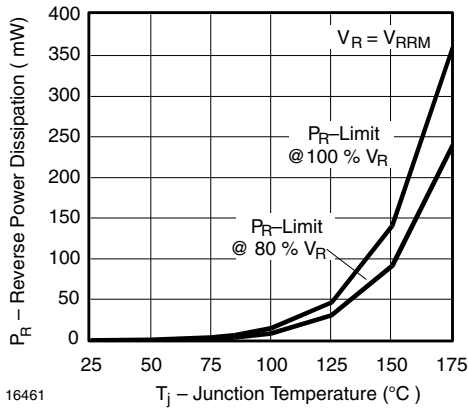


Fig. 6 - Max. Reverse Power Dissipation vs. Junction Temperature

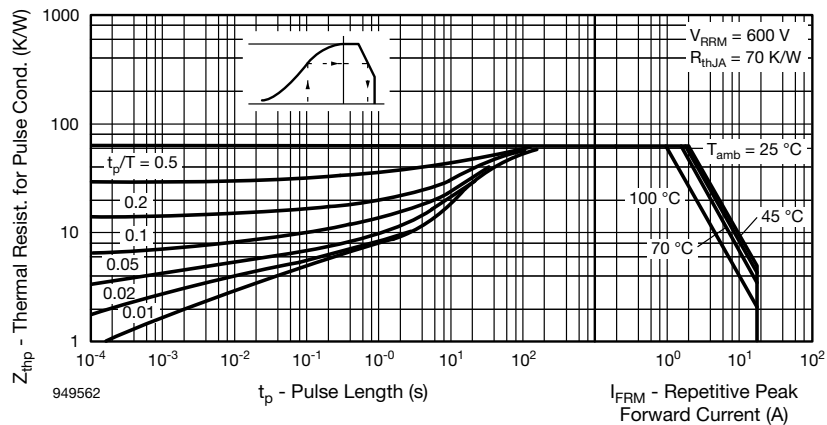
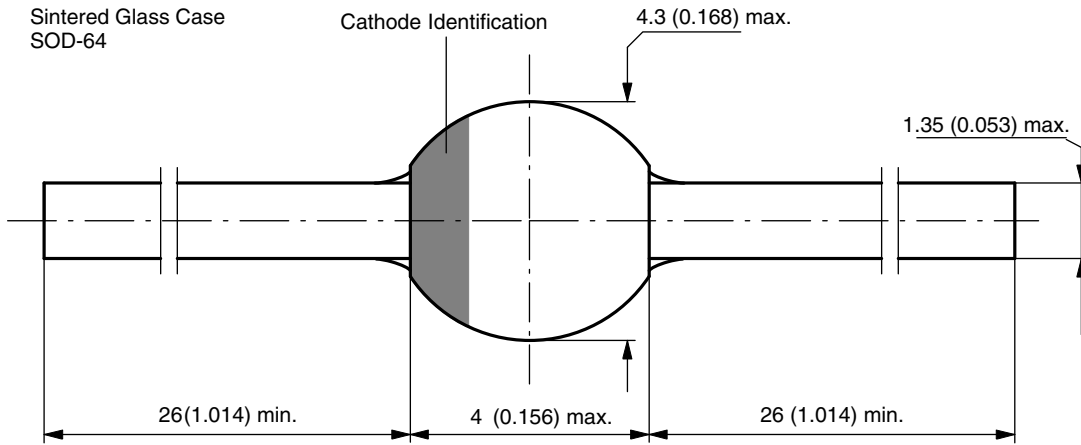


Fig. 8 - Thermal Response

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



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