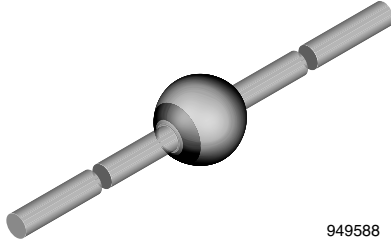


Ultra Fast Avalanche Sinterglass Diode



949588

FEATURES

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- Soft recovery characteristics
- Very fast reverse recovery time
- Low reverse recovery peak current
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition


RoHS
 COMPLIANT
 HALOGEN
FREE

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

- Ultra fast rectification diode for switching mode power supplies

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BYW178	$V_R = 800\text{ V}; I_{FAV} = 3\text{ A}$	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	A
Average forward current			I_{FAV}	3	A
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	$^\circ\text{C}$
Non repetitive reverse	$I_{(BR)R} = 0.4\text{ A}$		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 ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 3\text{ A}$	V_F	-	-	1.9	V
Reverse current	$V_R = V_{RRM}$	I_R	-	-	1	μA
	$V_R = V_{RRM}$, $T_j = 100\text{ }^\circ\text{C}$	I_R	-	-	20	μA
Reverse recovery current	$I_F = 1\text{ A}$, $di_F/dt \leq -50\text{ A}/\mu\text{s}$, $V_{Batt} = 200\text{ V}$	I_{RM}	-	2.2	-	A
Reverse recovery time	$I_F = 1\text{ A}$, $di_F/dt \leq -50\text{ A}/\mu\text{s}$, $V_{Batt} = 200\text{ V}$, $i_R = 0.25 \times I_{RM}$	t_{rr}	-	50	-	ns
Reverse recovery time (JEDEC)	$I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $i_R = 0.25\text{ A}$	t_{rr}	-	-	60	ns

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

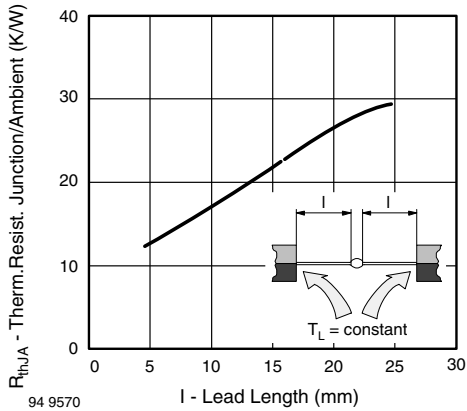


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

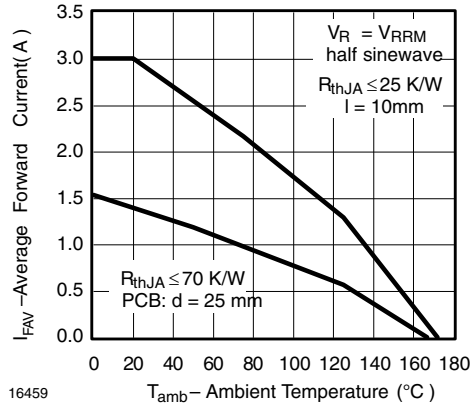


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

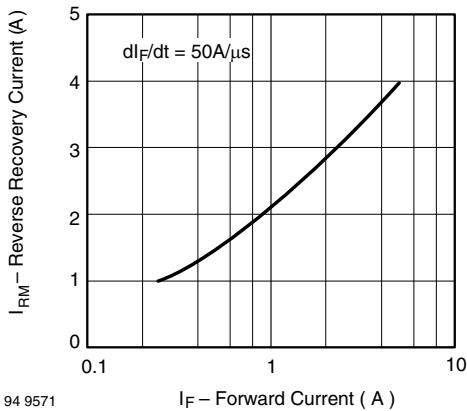


Fig. 2 - Typ. Reverse Recovery Current vs. Forward Current

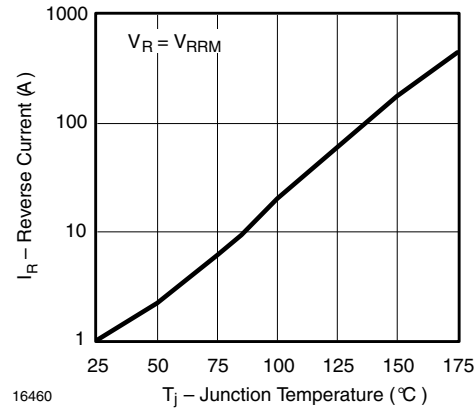


Fig. 5 - Reverse Current vs. Junction Temperature

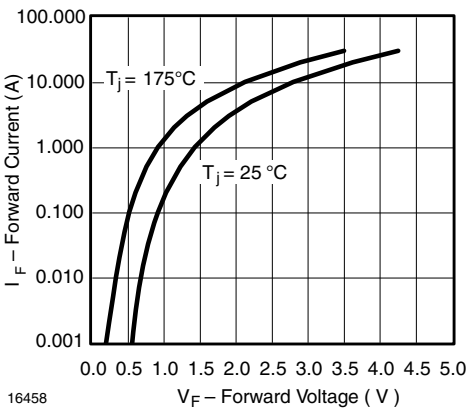


Fig. 3 - Forward Current vs. Forward Voltage

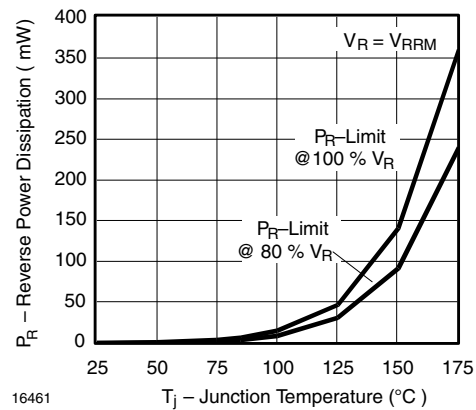


Fig. 6 - Max Reverse Power Dissipation vs. Junction Temperature

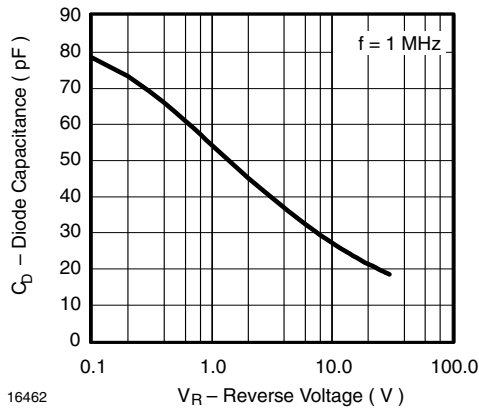


Fig. 7 - Diode Capacitance vs. Reverse Voltage

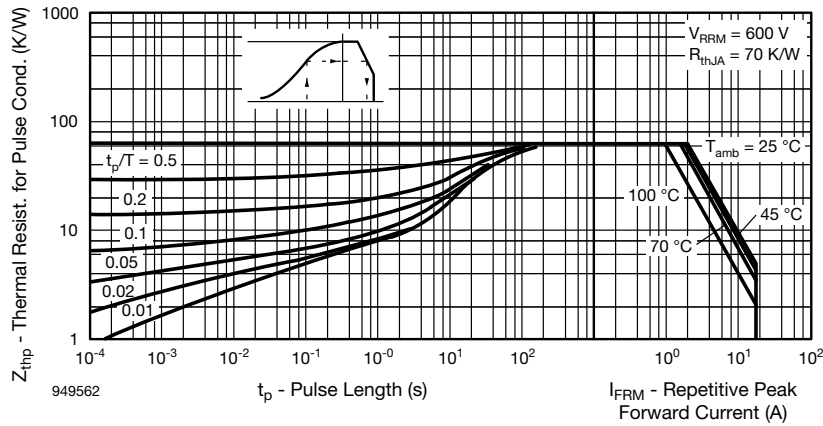
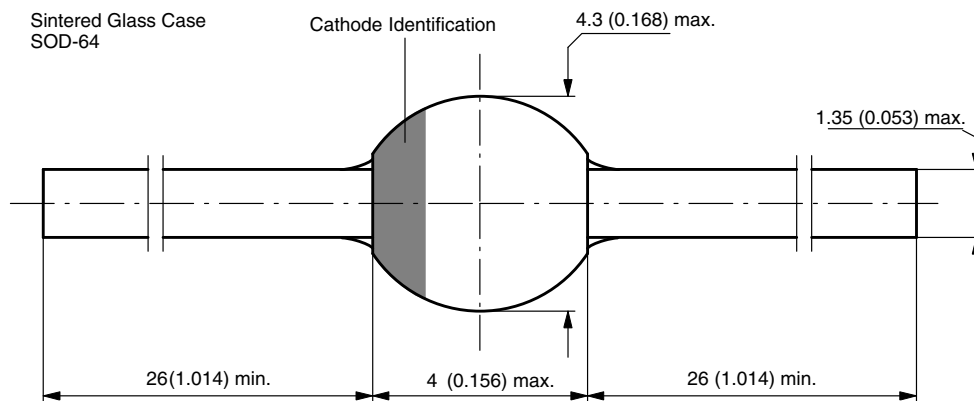


Fig. 8 - Thermal Response

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


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