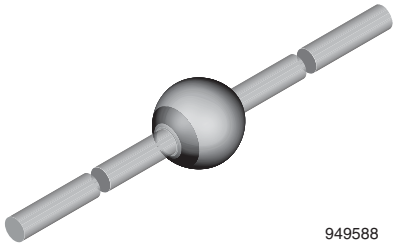
Standard Avalanche Sinterglass Diode



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DESIGN SUPPORT TOOLS

click logo to get started

3D Models Available

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
- Controlled avalanche characteristics
- Low reverse current
- High surge current loading
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb
e2
RoHS COMPLIANT
HALOGEN FREE

APPLCIATIONS

- Rectification, general purpose

ORDERING INFORMATION (Example)

DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
BYW82 or BYW83 or BYW84 and **BYW86**	BYW86-TR	2500 per 10" tape and reel	12 500
BYW82 or BYW84 and **BYW85**	BYW85-TAP	2500 per ammopack	12 500
BYW85	BYW85TR	2500 per 10" tape and reel	12 500
BYW83 or **BYW86**	BYW86TAP	2500 per ammopack	12 500

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BYW82	V_R = 200 V, $I_{F(AV)}$ = 3 A	SOD-64
BYW83	V_R = 400 V, $I_{F(AV)}$ = 3 A	SOD-64
BYW84	V_R = 600 V, $I_{F(AV)}$ = 3 A	SOD-64
BYW85	V_R = 800 V, $I_{F(AV)}$ = 3 A	SOD-64
BYW86	V_R = 1000 V, $I_{F(AV)}$ = 3 A	SOD-64

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYW82	$V_R = V_{RRM}$	200	V
		BYW83	$V_R = V_{RRM}$	400	V
		BYW84	$V_R = V_{RRM}$	600	V
		BYW85	$V_R = V_{RRM}$	800	V
		BYW86	$V_R = V_{RRM}$	1000	V
Peak forward surge current	t_p = 10 ms, half sine wave		I_{FSM}	100	A
Repetitive peak forward current			I_{FRM}	18	A
Average forward current			$I_{F(AV)}$	3	A
Pulse avalanche peak power	t_p = 20 µs, half sine wave, T_j = 175 °C		P_R	1000	W
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}$ = 1 A, T_j = 175 °C		E_R	20	mJ
i^2t-rating			i^2t	40	A2s
Junction and storage temperature range			$T_j = T_{stg}$	-55 to +175	°C

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MAXIMUM THERMAL RESISTANCE (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Junction ambient	Lead length l = 10 mm, T_L = constant	R_{thJA}	25	K/W
	On PC board with spacing 25 mm	R_{thJA}	70	K/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 3 A	V_F	-	-	1	V
Reverse current	$V_R = V_{RRM}$	I_R	-	0.1	1	µA
	$V_R = V_{RRM}$, T_j = 100 °C	I_R	-	5	10	µA
Breakdown voltage	I_R = 100 µA, tp/T = 0.01, tp = 0.3 ms	$V_{(BR)}$	-	-	1600	V
Diode capacitance	V_R = 4 V, f = 1 MHz	C_D	-	40	60	pF
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A	t_{rr}	-	3.5	5	µs
	I_F = 1 A, dI/dt = 5 A/µs, V_R = 50 V	t_{rr}	-	4.5	7.5	µs
Reverse recovery charge	I_F = 1 A, dI/dt = 5 A/µs	Q_{rr}	-	8	12	µC

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

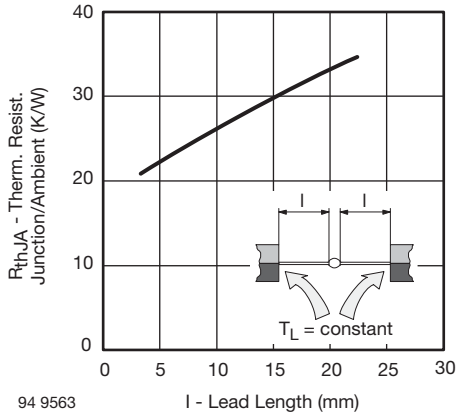

Fig. 1 - Max. Thermal Resistance vs. Lead Length

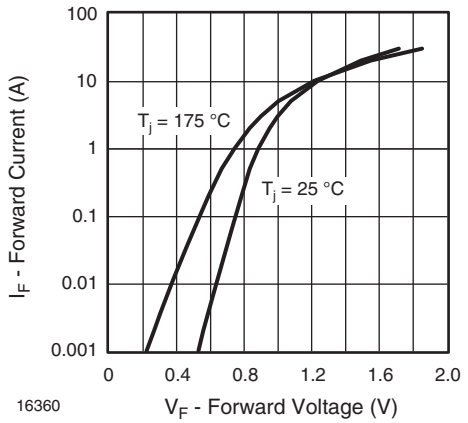

Fig. 3 - Forward Current vs. Forward Voltage

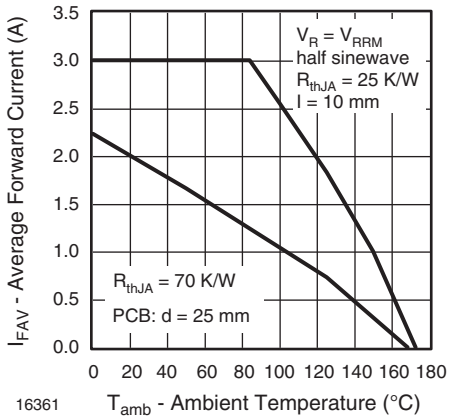

Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

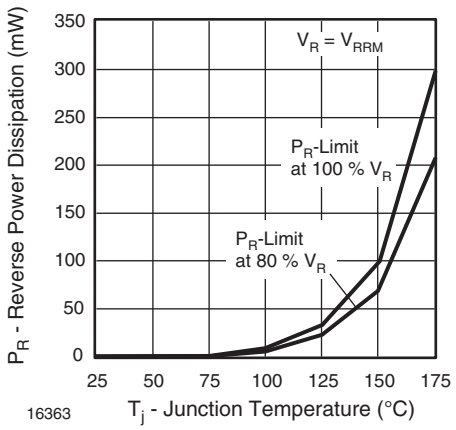

Fig. 4 - Max. Reverse Power Dissipation vs. Junction Temperature

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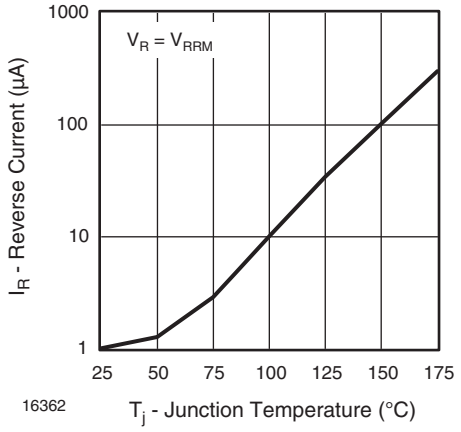


Fig. 5 - Reverse Current vs. Junction Temperature

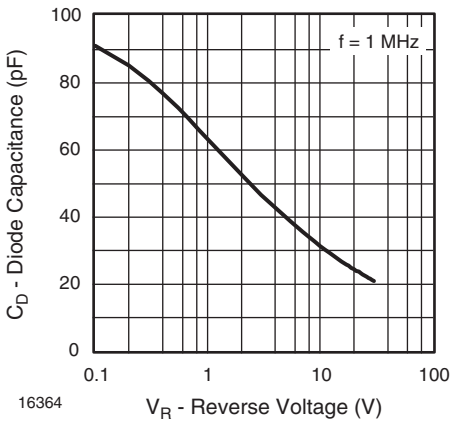


Fig. 6 - Diode Capacitance vs. Reverse Voltage

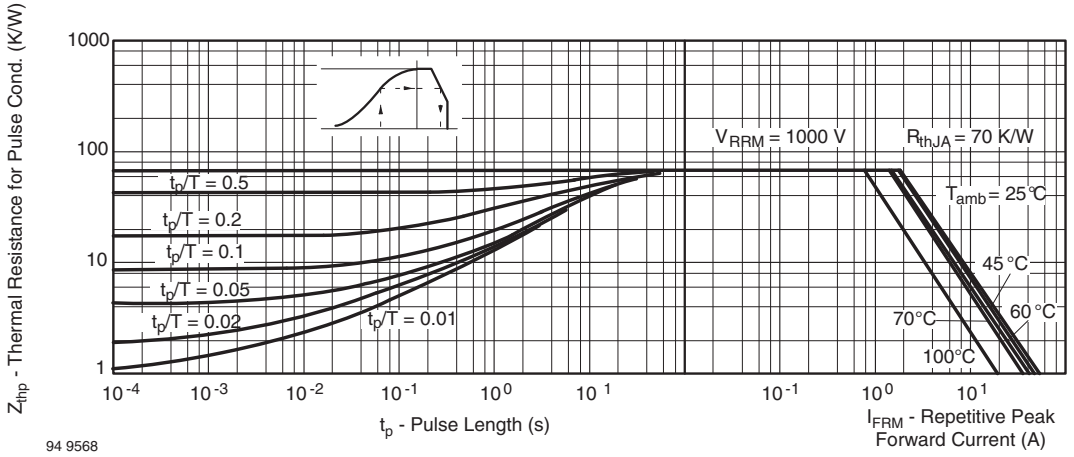
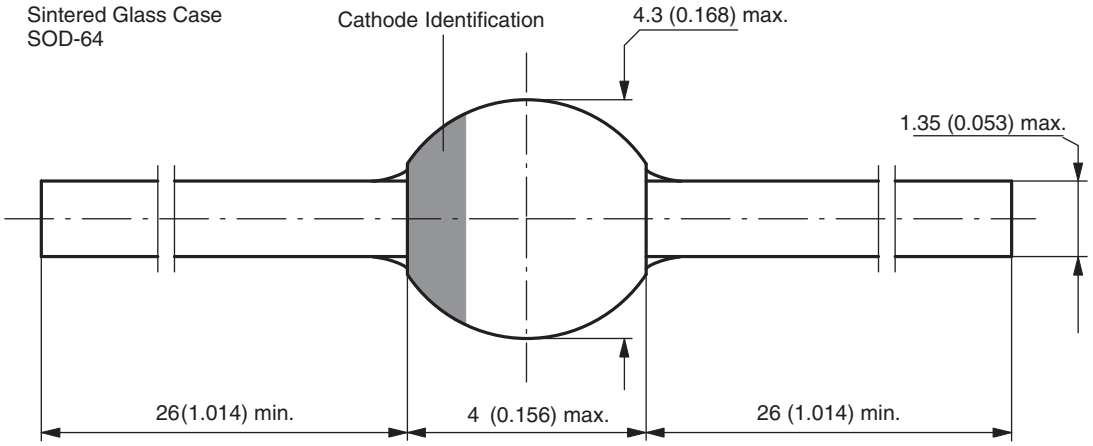


Fig. 7 - Thermal Response

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



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