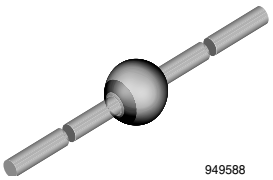
Standard Avalanche Sinterglass Diode

Features

- Glass passivated junction
- Hermetically sealed package
- Controlled avalanche characteristics
- Low reverse current
- High surge current loading
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Applications

Rectification, general purpose

Mechanical Data

Case: SOD-64 Sintered glass case

Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: approx. 858 mg

Parts Table

Part	Type differentiation	Package
BYW82	V_R = 200 V; I_{FAV} = 3 A	SOD-64
BYW83	V_R = 400 V; I_{FAV} = 3 A	SOD-64
BYW84	V_R = 600 V; I_{FAV} = 3 A	SOD-64
BYW85	V_R = 800 V; I_{FAV} = 3 A	SOD-64
BYW86	V_R = 1000 V; I_{FAV} = 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 sinewave		I_{FSM}	100	A
Repetitive peak forward current			I_{FRM}	18	A
Average forward current			I_{FAV}	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^2*t-rating			i^2*t	40	A^2*s
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to +175	°C

Maximum Thermal Resistance

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction ambient	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			1.0	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, t_p/T = 0.01, t_p = 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}		2	4	µs
	I_F = 1 A, d_i/d_t = 5 A/µs, V_R = 50 V	t_{rr}		3	6	µs
Reverse recovery charge	I_F = 1 A, d_i/d_t = 5 A/µs	Q_{rr}		6	10	µC

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

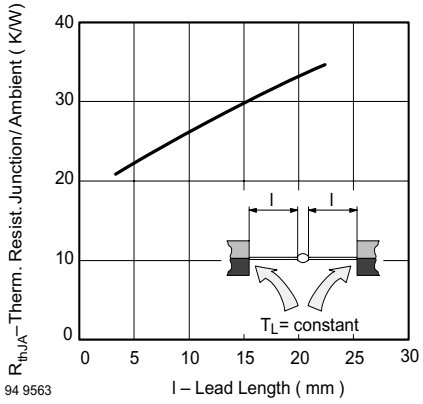


Figure 1. Max. Thermal Resistance vs. Lead Length

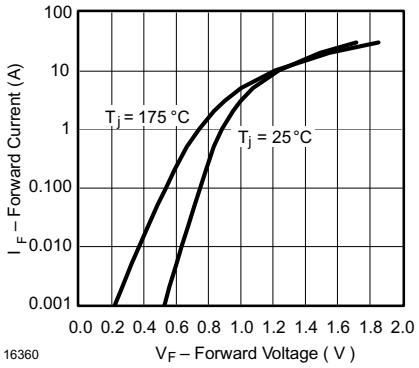


Figure 2. Forward Current vs. Forward Voltage

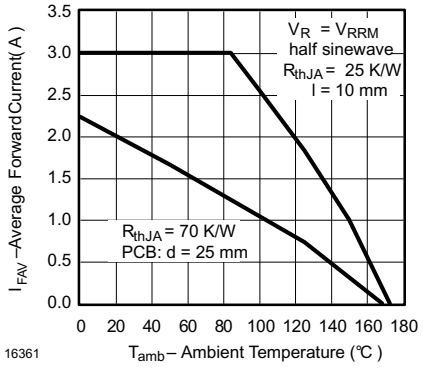


Figure 3. Max. Average Forward Current vs. Ambient Temperature

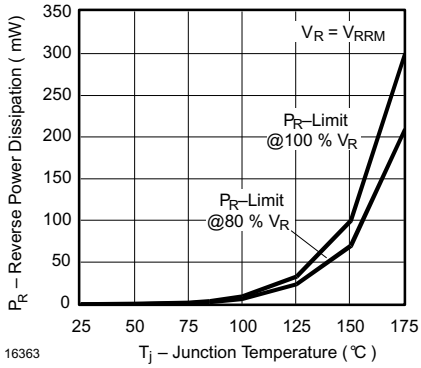


Figure 5. Max. Reverse Power Dissipation vs. Junction Temperature

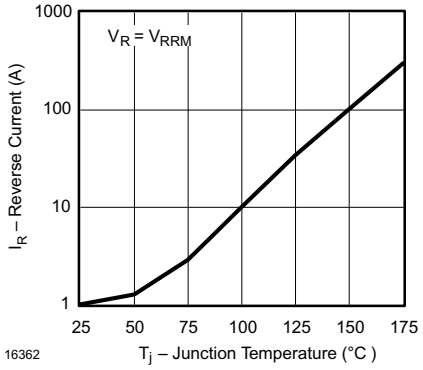


Figure 4. Reverse Current vs. Junction Temperature

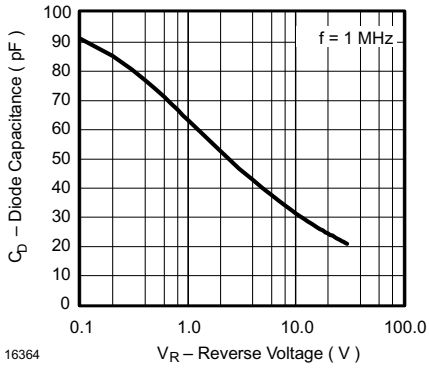


Figure 6. Diode Capacitance vs. Reverse Voltage

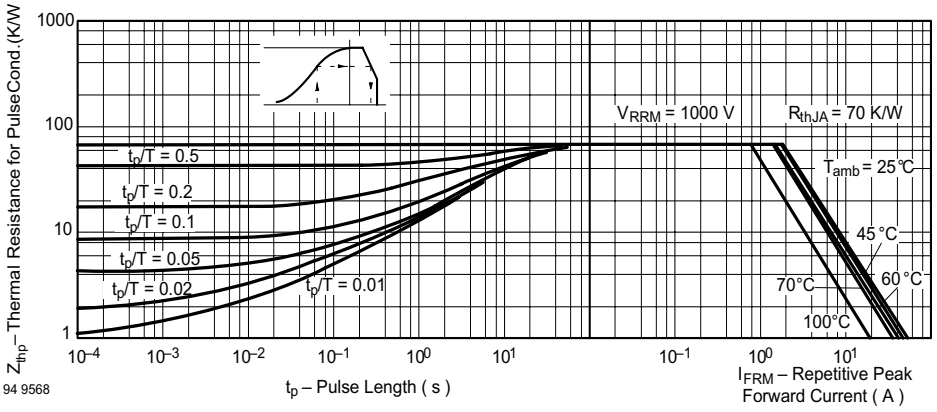
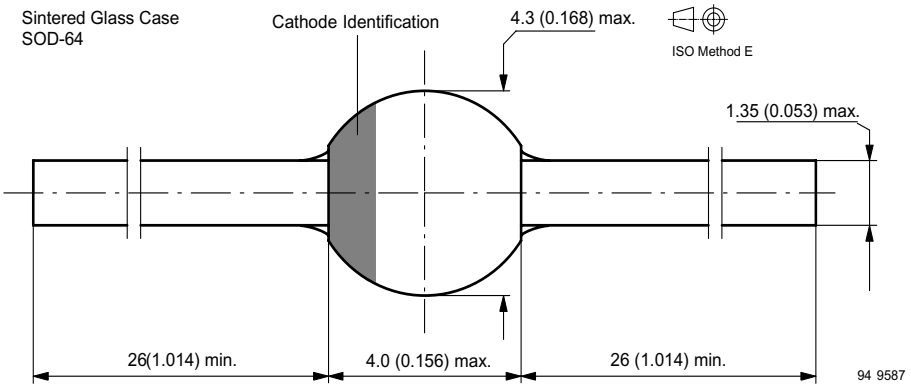


Figure 7. Thermal Response

Package Dimensions in mm (Inches)



Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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