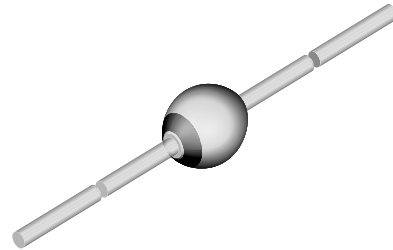


Fast Avalanche Sinterglass Diode

Features

- Glass passivated junction
- Hermetically sealed package
- Soft recovery characteristic
- Low reverse current
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



949539

Applications

Fast rectification and switching diode for example for TV-line output circuits and switch mode power supply

Mechanical Data

Case: SOD-57 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. 369 mg

Parts Table

Part	Type differentiation	Package
BYV12	$V_R = 100 \text{ V}; I_{FAV} = 1.5 \text{ A}$	SOD-57
BYV13	$V_R = 400 \text{ V}; I_{FAV} = 1.5 \text{ A}$	SOD-57
BYV14	$V_R = 600 \text{ V}; I_{FAV} = 1.5 \text{ A}$	SOD-57
BYV15	$V_R = 800 \text{ V}; I_{FAV} = 1.5 \text{ A}$	SOD-57
BYV16	$V_R = 1000 \text{ V}; I_{FAV} = 1.5 \text{ A}$	SOD-57

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	BYV12	$V_R = V_{RRM}$	100	V
		BYV13	$V_R = V_{RRM}$	400	V
		BYV14	$V_R = V_{RRM}$	600	V
		BYV15	$V_R = V_{RRM}$	800	V
		BYV16	$V_R = V_{RRM}$	1000	V
Peak forward surge current	$t_p = 10 \text{ ms}$, half sinewave		I_{FSM}	40	A
Repetitive peak forward current			I_{FRM}	9	A

Parameter	Test condition	Part	Symbol	Value	Unit
Average forward current	$\varphi = 180^\circ, T_{amb} = 25^\circ\text{C}$		I_{FAV}	1.5	A
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	$^\circ\text{C}$
Non repetitive reverse avalanche energy	$I_{(BR)R} = 0.4\text{ A}$		E_R	10	mJ

Maximum Thermal Resistance

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

Parameter	Test condition	Symbol	Value	Unit
Junction ambient	$l = 10\text{ mm}, T_L = \text{constant}$	R_{thJA}	45	K/W
	on PC board with spacing 25 mm	R_{thJA}	100	K/W

Electrical Characteristics

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

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Forward voltage	$I_F = 1\text{ A}$	V_F			1.5	V
Reverse current	$V_R = V_{RRM}$	I_R		1	5	μA
	$V_R = V_{RRM}, T_j = 150^\circ\text{C}$	I_R		60	150	μA
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$	t_{rr}			300	ns
Reverse recovery charge	$I_F = 1\text{ A}, di/dt = 5\text{ A}/\mu\text{s}$	Q_{rr}			200	nC

Typical Characteristics ($T_{amb} = 25^\circ\text{C}$ unless otherwise specified)

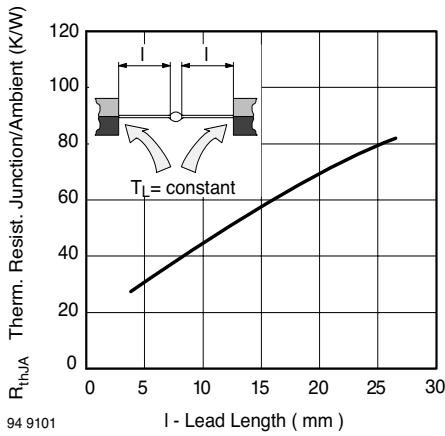


Figure 1. Typ. Thermal Resistance vs. Lead Length

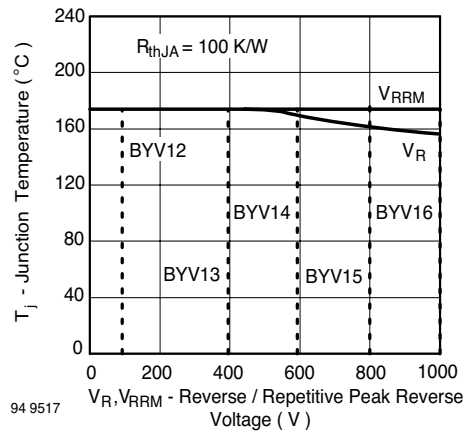


Figure 2. Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

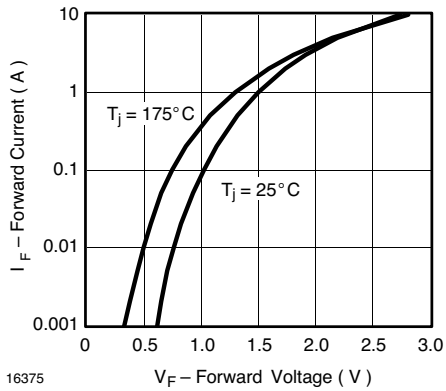


Figure 3. Forward Current vs. Forward Voltage

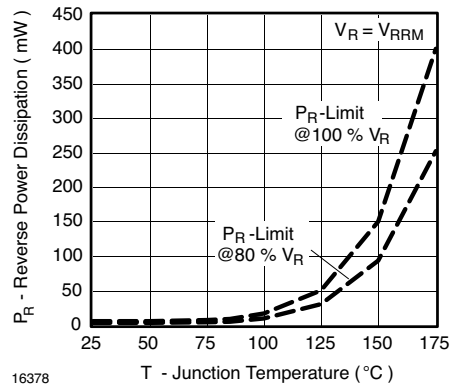


Figure 6. Max. Reverse Power Dissipation vs. Junction Temperature

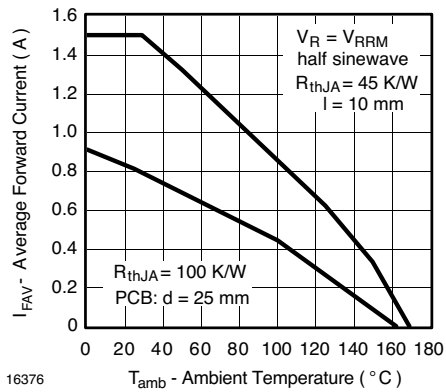


Figure 4. Max. Average Forward Current vs. Ambient Temperature

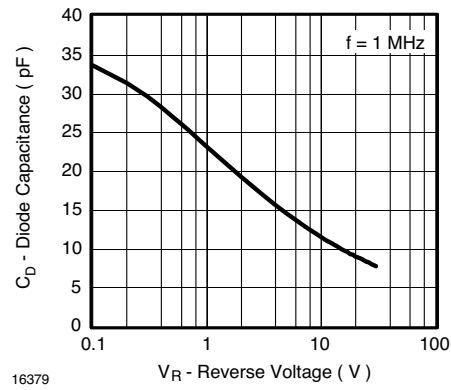


Figure 7. Diode Capacitance vs. Reverse Voltage

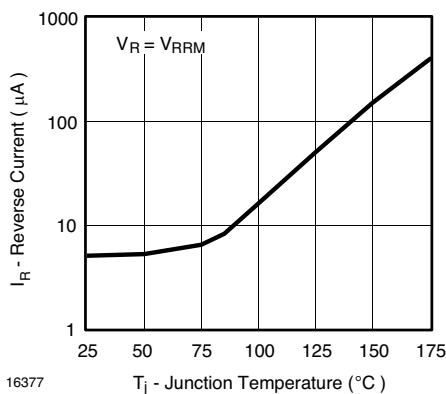


Figure 5. Reverse Current vs. Junction Temperature

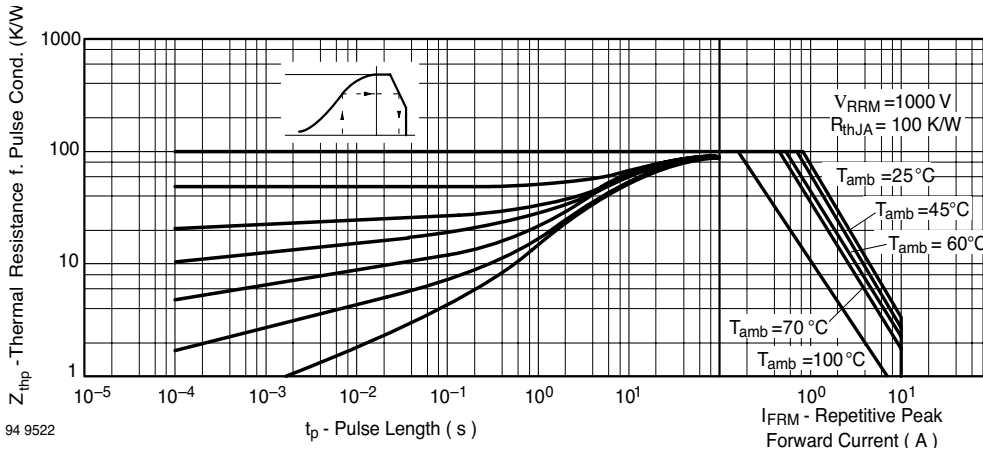
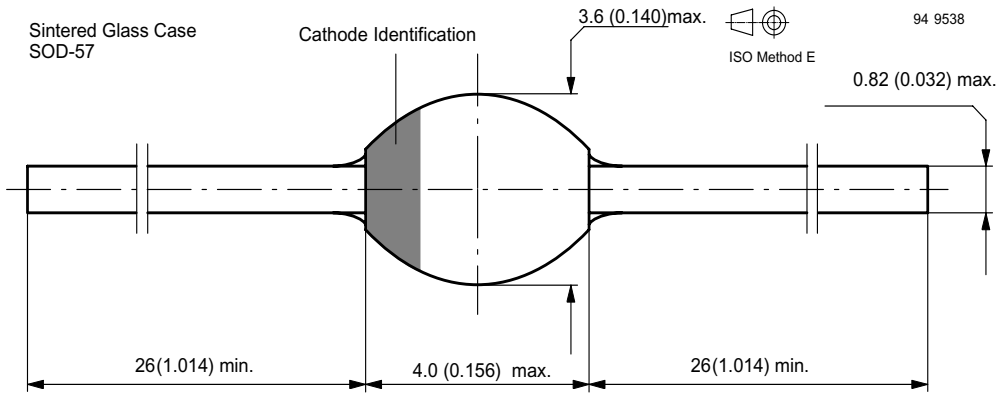


Figure 8. Thermal Response

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.

We reserve the right to make changes to improve technical design and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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



Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.