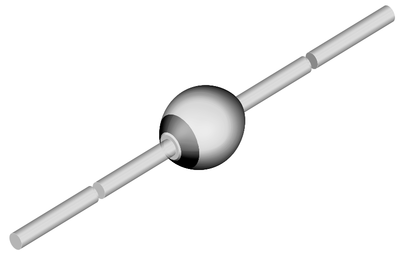
Standard Avalanche Sinterglass Diode

Features
- Controlled avalanche characteristics
- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- High surge current capability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Applications
General purpose

Mechanical Data
Case: Sintered glass case, SOD 57

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

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: 370 mg, (max. 500 mg)

Parts Table

Part	Type differentiation	Package
BY527	V_R = 800 V; I_{FAV} = 2 A	SOD57

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

Parameter	Test condition	Sub type	Symbol	Value	Unit
Peak reverse voltage, non repetitive	I_R = 100 μA		V_{RSM}	1250	V
Reverse voltage	see electrical characteristics		V_R	800	V
Peak forward surge current	t_p = 10 ms, half sinewave		I_{FSM}	50	A
Repetitive peak forward current			I_{FRM}	12	A
Average forward current	φ = 180 °		I_{FAV}	2	A
Pulse avalanche peak power	T_j = 175 °C, t_p = 20 μs, half sinus wave		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	8	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	Sub type	Symbol	Value	Unit
Junction ambient	l = 10 mm, T_L = constant		R_{thJA}	45	K/W
	on PC board with spacing 25 mm		R_{thJA}	100	K/W

Electrical Characteristics

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

Parameter	Test condition	Sub type	Symbol	Min	Typ.	Max	Unit
Forward voltage	I_F = 1 A		V_F		0.9	1.0	V
	I_F = 10 A		V_F			1.65	V
Reverse current	V_R = 800 V		I_R		0.1	1	μA
	V_R = 800 V, 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		$V_{(BR)}$	1250			V
Diode capacitance	V_R = 4 V, f = 1 MHz		C_D		16		pF
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A		t_{rr}			4	μs
	I_F = 1 A, d_i/d_t = 5 A/μs, V_R = 50 V		t_{rr}			4	μs
Reverse recovery charge	I_F = 1 A, d_i/d_t = 5 A/μs		Q_{rr}			3	μC

Typical Characteristics (T_{amb} = 25 °C unless otherwise specified)

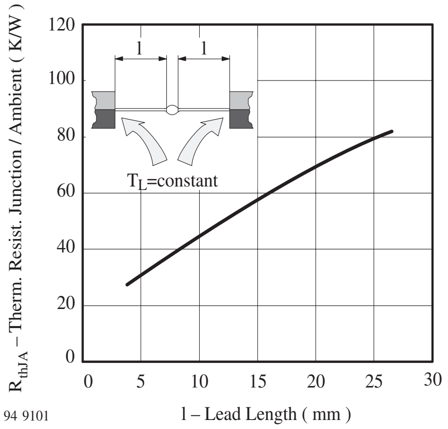


Figure 1. Typ. Thermal Resistance vs. Lead Length

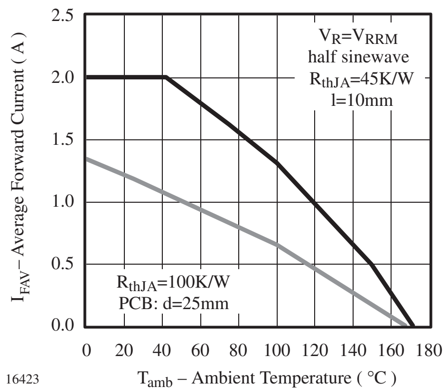


Figure 3. Max. Average Forward Current vs. Ambient Temperature

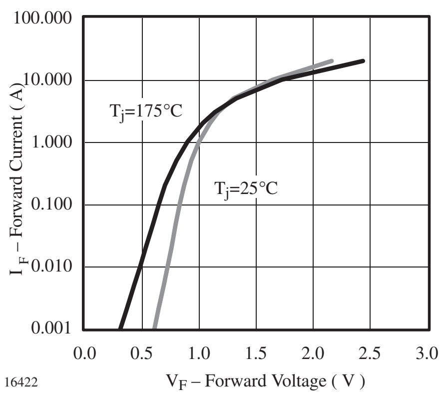


Figure 2. Forward Current vs. Forward Voltage

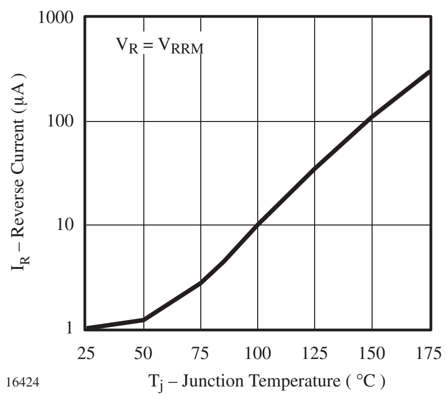


Figure 4. Reverse Current vs. Junction Temperature

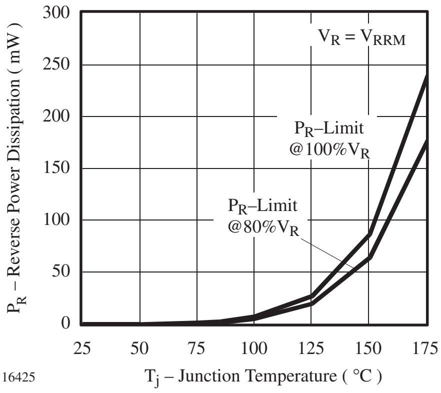


Figure 5. Max. Reverse Power Dissipation vs. Junction Temperature

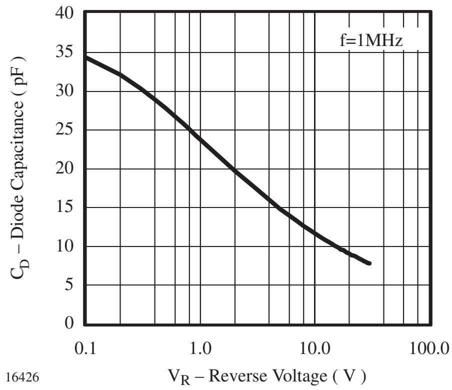


Figure 6. Diode Capacitance vs. Reverse Voltage

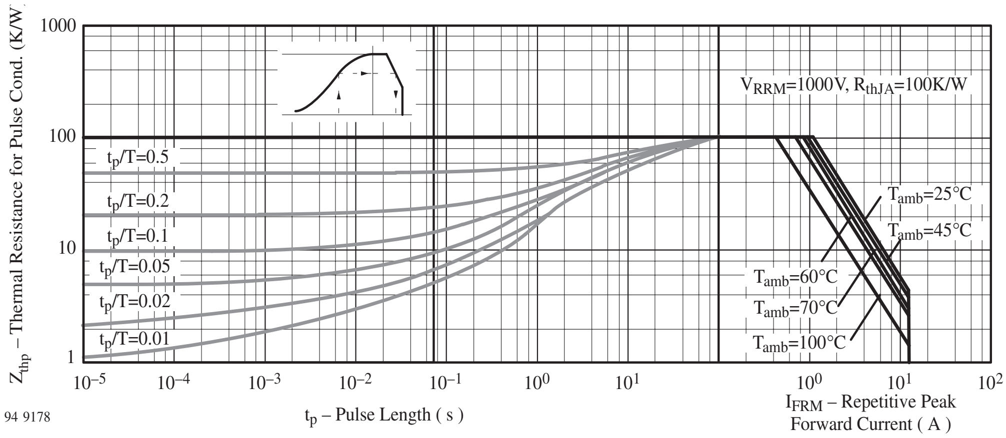
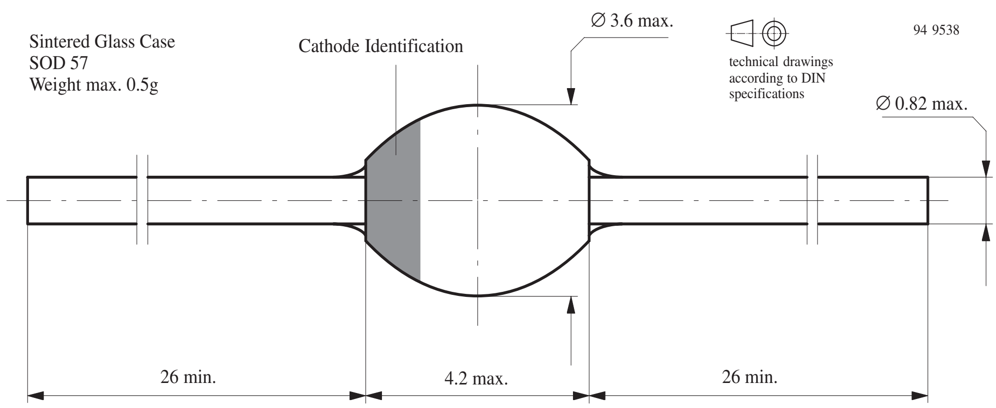


Figure 7. Thermal Response

Package Dimensions in mm



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 operatingsystems 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.

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