

## Sinterglass Medium-Switching Junction Rectifier

### Features

- High temperature metallurgically bonded constructed rectifiers
- 1.0 ampere operation at  $T_{amb} = 55\text{ }^{\circ}\text{C}$  with no thermal runaway
- Typical  $I_R$  less than  $0.1\text{ }\mu\text{A}$
- Hermetically sealed package
- Capable of meeting environmental standards of MIL-S-19500
- High temperature soldering guaranteed:  $350\text{ }^{\circ}\text{C}/10\text{ seconds}$ ,  $0.375\text{ }''$  ( $9.5\text{ mm}$ ) lead length,  $5\text{ lbs.}$  ( $2.3\text{ kg}$ ) tension



17031

### Mechanical Data

**Case:** JEDEC DO-204AP Solid glass body

**Terminals:** Solder plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 560 mg

### Parts Table

Part	Type differentiation
1N4245	$V_{RRM} = 200\text{ V}$
1N4246	$V_{RRM} = 400\text{ V}$
1N4247	$V_{RRM} = 600\text{ V}$
1N4248	$V_{RRM} = 800\text{ V}$
1N4249	$V_{RRM} = 1000\text{ V}$

### Absolute Maximum Ratings

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

Parameter	Test condition	Sub type	Symbol	Value	Unit
Maximum repetitive peak reverse voltage		1N4245	$V_{RRM}$	200	V
		1N4246	$V_{RRM}$	400	V
		1N4247	$V_{RRM}$	600	V
		1N4248	$V_{RRM}$	800	V
		1N4249	$V_{RRM}$	1000	V
Maximum RMS voltage		1N4245	$V_{RMS}$	140	V
		1N4246	$V_{RMS}$	280	V
		1N4247	$V_{RMS}$	420	V
		1N4248	$V_{RMS}$	560	V
		1N4249	$V_{RMS}$	700	V
Maximum DC blocking voltage		1N4245	$V_{DC}$	200	V
		1N4246	$V_{DC}$	400	V
		1N4247	$V_{DC}$	600	V
		1N4248	$V_{DC}$	800	V
		1N4249	$V_{DC}$	1000	V
Maximum average forward rectified current	$0.375\text{ }''$ ( $9.5\text{ mm}$ ) lead length at $T_{amb} = 55\text{ }^{\circ}\text{C}$		$I_{F(AV)}$	1.0	A
Peak forward surge current	8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)		$I_{FSM}$	50	A

### Maximum Thermal Resistance

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

Parameter	Test condition	Sub type	Symbol	Value	Unit
Typical thermal resistance <sup>1)</sup>			$R_{\theta JA}$	55	$^{\circ}\text{C}/\text{W}$
Operating junction temperature range			$T_J$	- 65 to + 175	$^{\circ}\text{C}$
Storage temperature range			$T_{STG}$	- 65 to + 200	$^{\circ}\text{C}$
Maximum full load reverse current	full cycle average 0.375 " (9.5 mm) lead length at $T_{amb} = 55\text{ }^{\circ}\text{C}$		$I_{R(AV)}$	50	$\mu\text{A}$

<sup>1)</sup> Thermal resistance from junction to ambient and from junction to lead at 0.375 " (9.5mm) lead length, with both leads mounted between heat sinks.

### Electrical Characteristics

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

Parameter	Test condition	Sub type	Symbol	Min	Typ.	Max	Unit
Maximum instantaneous forward voltage	$I_F = 1.0\text{ A}$		$V_F$			1.2	V
Maximum DC reverse current	at rated DC blocking voltage $T_{amb} = 25\text{ }^{\circ}\text{C}$		$I_R$			1.5	$\mu\text{A}$
	at rated DC blocking voltage $T_{amb} = 125\text{ }^{\circ}\text{C}$		$I_R$			25	$\mu\text{A}$
Typical junction capacitance	$V_R = 4\text{ V}$ , $f = 1\text{ MHz}$		$C_J$		15		pF

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

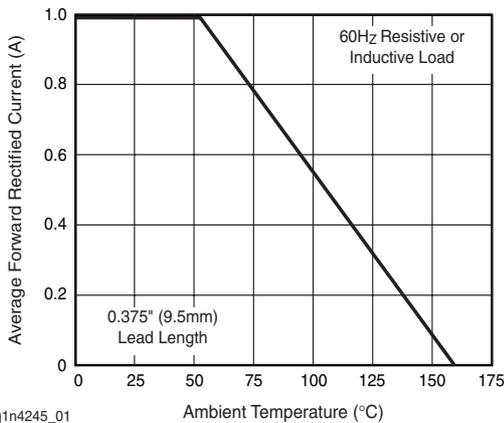


Figure 1. Forward Current Derating Curve

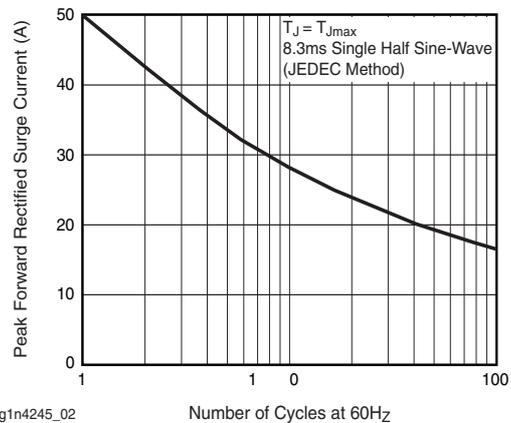


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

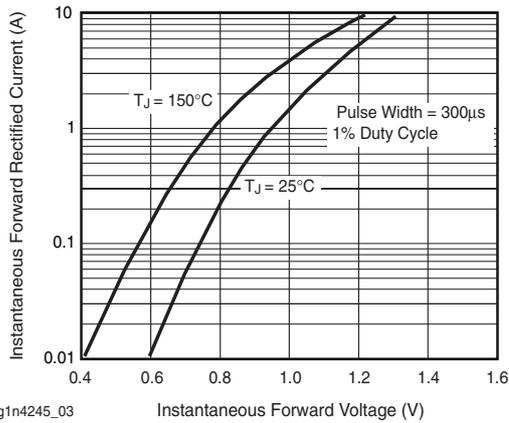


Figure 3. Typical Instantaneous Forward Characteristics

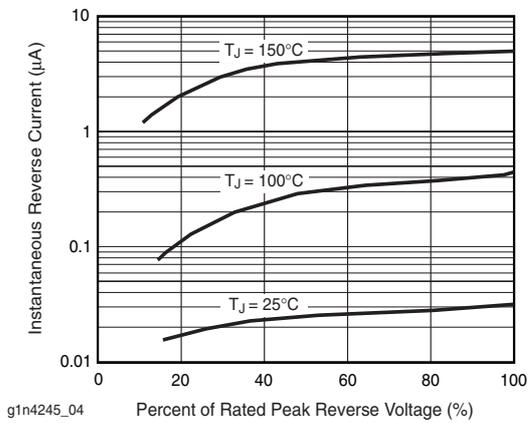


Figure 4. Typical Reverse Characteristics

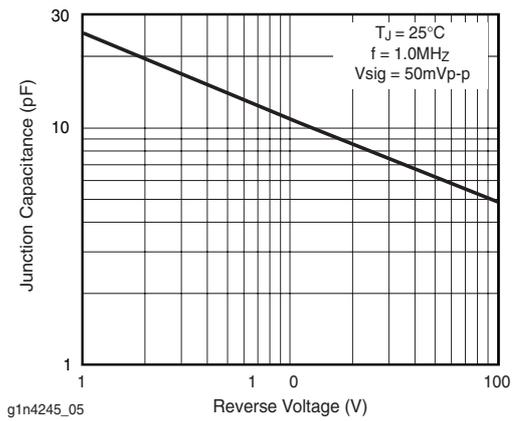


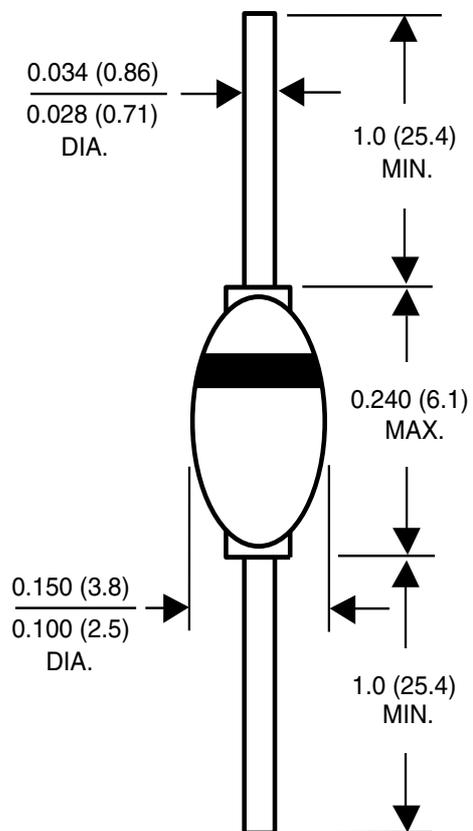
Figure 5. Typical Junction Capacitance

# 1N4245 to 1N4249

Vishay Semiconductors



## Package Dimensions in mm



17030



## 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.**

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