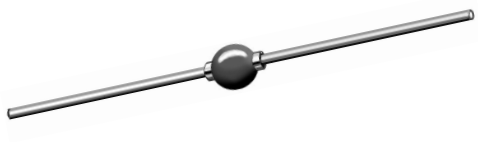
Ultrafast Sinterglass Rectifier

Features

- High temperature metallurgically bonded construction
- Glass passivated cavity-free junction
- Superfast recovery time for high efficiency
- Ultrafast recovery time for high efficiency
- Low forward voltage, high current capability
- Capable of meeting environmental standards of MIL-S-19500
- Hermetically sealed package
- High surge capability
- High temperature soldering guaranteed: 250 °C/

  10 seconds, 0.375 " (9.5 mm) lead length, 5 lbs. (2.3 kg) tension



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Parts Table

Part	Type differentiation
GI1101	V_{RRM} = 50 V
GI1102	V_{RRM} = 100 V
GI1103	V_{RRM} = 150 V
GI1104	V_{RRM} = 200 V

Mechanical Data

Case: JEDEC DO-204AP solid glass body

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

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: 560 mg

Absolute Maximum Ratings

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

Parameter	Test condition	Sub type	Symbol	Value	Unit
Maximum repetitive peak reverse voltage		GI1101	V_{RRM}	50	V
		GI1102	V_{RRM}	100	V
		GI1103	V_{RRM}	150	V
		GI1104	V_{RRM}	200	V
Maximum RMS voltage		GI1101	V_{RMS}	35	V
		GI1102	V_{RMS}	70	V
		GI1103	V_{RMS}	105	V
		GI1104	V_{RMS}	140	V
Maximum DC blocking voltage		GI1101	V_{DC}	50	V
		GI1102	V_{DC}	100	V
		GI1103	V_{DC}	150	V
		GI1104	V_{DC}	200	V
Maximum average forward rectified current	0.375 " (9.5 mm) lead length (see figure 1)	GI1101	$I_{F(AV)}$	2.5	A
	0.375 " (9.5 mm) lead length (see figure 1)	GI1102	$I_{F(AV)}$	2.5	A
	0.375 " (9.5 mm) lead length (see figure 1)	GI1103	$I_{F(AV)}$	2.5	A
	0.375 " (9.5 mm) lead length (see figure 1)	GI1104	$I_{F(AV)}$	2.0	A
Peak forward surge current	8.3 ms single half sine-wave superimposed on rated load (JEDEC Method), at rated T_L		I_{FSM}	50	A

Maximum Thermal Resistance

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

Parameter	Test condition	Sub type	Symbol	Value	Unit
Typical thermal resistance [1), 2)] - junction to ambient			$R_{\theta JA}$	65	°C/W
Typical thermal resistance [1), 2)] - junction to lead			$R_{\theta JL}$	20	°C/W
Operating junction and storage temperature range		GI1101	T_J, T_{STG}	- 65 to + 175	°C
		GI1102	T_J, T_{STG}	- 65 to + 175	°C
		GI1103	T_J, T_{STG}	- 65 to + 175	°C
		GI1104	T_J, T_{STG}	- 65 to + 150	°C

1) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length and mounted on P.C.B. with 0.5 x 0.5" (12 x 12 mm) copper pads

2)Thermal resistance from junction to lead at 0.375" (9.5mm) lead length with both leads attached to heatsinks

Electrical Characteristics

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

Parameter	Test condition	Sub type	Symbol	Min	Typ.	Max	Unit
Maximum instantaneous forward voltage	I_F = 2.0 A	GI1101	V_F			0.95	V
	I_F = 2.0 A	GI1102	V_F			0.95	V
	I_F = 2.0 A	GI1103	V_F			0.95	V
	I_F = 2.0 A	GI1104	V_F			1.25[1)]	V
Maximum reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	GI1101	t_{rr}			25	ns
	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	GI1102	t_{rr}			25	ns
	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	GI1103	t_{rr}			25	ns
	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	GI1104	t_{rr}			50	ns
Typical junction capacitance	V_R = 4 V, f = 1 MHz		C_J		45		pF
Maximum DC reverse current	at rated DC blocking voltage, T_{amb} = 25 °C	GI1101	I_R			2.0	µA
	at rated DC blocking voltage, T_{amb} = 25 °C	GI1102	I_R			2.0	µA
	at rated DC blocking voltage, T_{amb} = 25 °C	GI1103	I_R			2.0	µA
	at rated DC blocking voltage, T_{amb} = 25 °C	GI1104	I_R			10	µA
	at rated DC blocking voltage, T_{amb} = 100 °C	GI1101	I_R			50	µA
	at rated DC blocking voltage, T_{amb} = 100 °C	GI1102	I_R			50	µA
	at rated DC blocking voltage, T_{amb} = 100 °C	GI1103	I_R			50	µA
	at rated DC blocking voltage, T_{amb} = 100 °C	GI1104	I_R			200	µA

1) Tested at I_F = 1.0 A

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

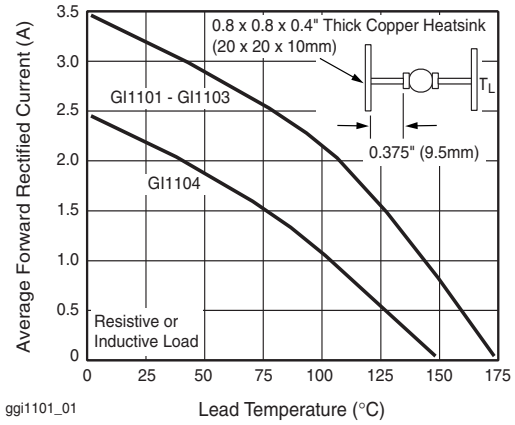


Figure 1. Maximum Forward Current Derating Curve

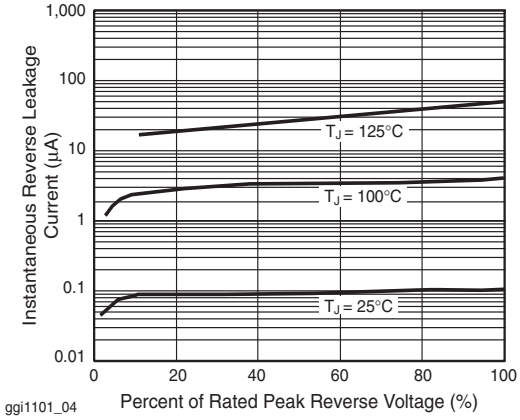


Figure 4. Typical Reverse Leakage Characteristics

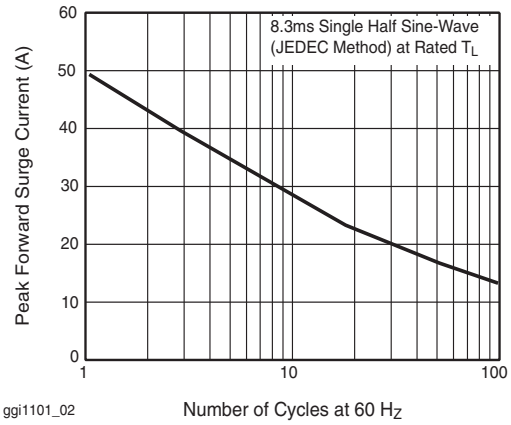


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

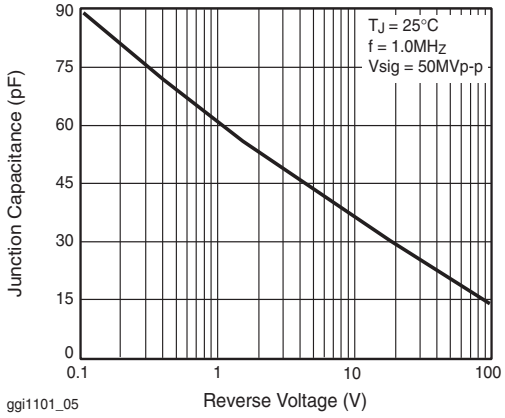


Figure 5. Typical Junction Capacitance

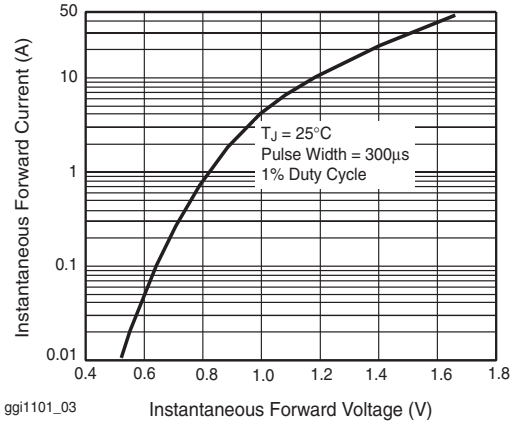
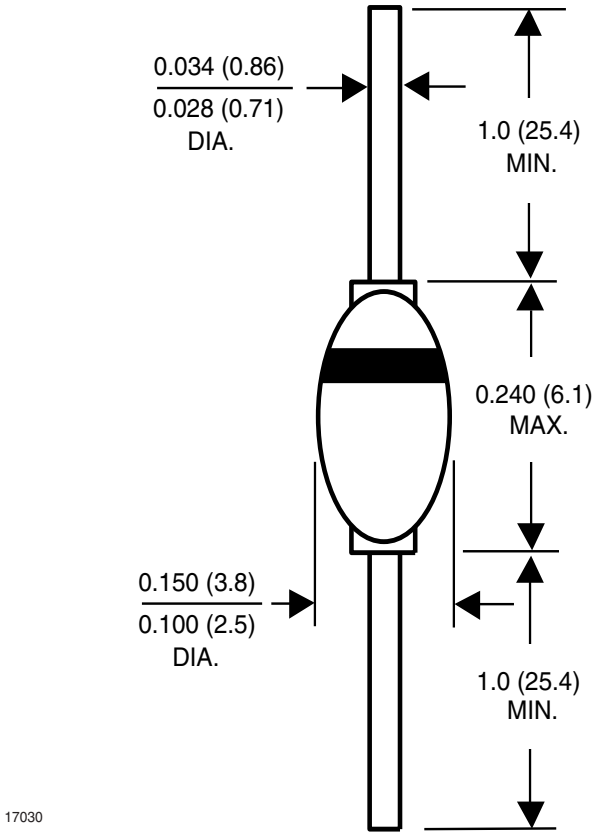


Figure 3. Typical Instantaneous Forward Characteristics

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.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany
Telephone: 49 (0)7131 67 2831, Fax number: 49 (0)7131 67 2423

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