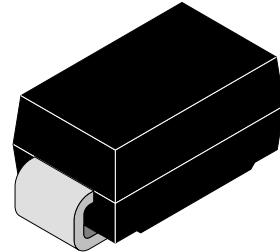




# 1.0A Surface Mount Ultra-Fast Rectifier

## Features

- Glass passivated die construction
- Diffused junction
- Ultra-fast recovery time for high efficiency
- Low forward voltage drop, high current capability, and low power loss
- Surge overload rating to 30A peak
- Ideally suited for automated assembly
- Plastic material – UL Recognition flammability classification 94V-0



14 415

## Absolute Maximum Ratings

T<sub>j</sub> = 25°C

Parameter	Test Conditions	Type	Symbol	Value	Unit
Repetitive peak reverse voltage =Working peak reverse voltage =DC Blocking voltage		US1A	V <sub>RRM</sub> =V <sub>RWM</sub> =V <sub>R</sub>	50	V
		US1B		100	V
		US1D		200	V
		US1G		400	V
		US1J		600	V
		US1K		800	V
		US1M		1000	V
Peak forward surge current			I <sub>FSM</sub>	30	A
Average forward current	T <sub>T</sub> =75°C		I <sub>FAV</sub>	1	A
Junction and storage temperature range			T <sub>j</sub> =T <sub>stg</sub>	-65...+150	°C

## Electrical Characteristics

T<sub>j</sub> = 25°C

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I <sub>F</sub> =1A	US1A–US1D	V <sub>F</sub>			1.0	V
		US1G	V <sub>F</sub>			1.3	V
		US1J–US1M	V <sub>F</sub>			1.7	V
Reverse current	T <sub>A</sub> =25°C		I <sub>R</sub>			5.0	µA
	T <sub>A</sub> =100°C		I <sub>R</sub>			100	µA
Reverse recovery time	I <sub>F</sub> =1A, I <sub>R</sub> =0.5A, I <sub>rr</sub> =0.25A	US1A–US1G	t <sub>rr</sub>			50	ns
		US1J–US1M	t <sub>rr</sub>			75	ns
Diode capacitance	V <sub>R</sub> =4V, f=1MHz	US1A–US1G	C <sub>D</sub>		20		pF
		US1J–US1M	C <sub>D</sub>		10		pF
Thermal resistance junction to terminal	on PC board with 5.0mm <sup>2</sup>		R <sub>thJT</sub>		75		K/W



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

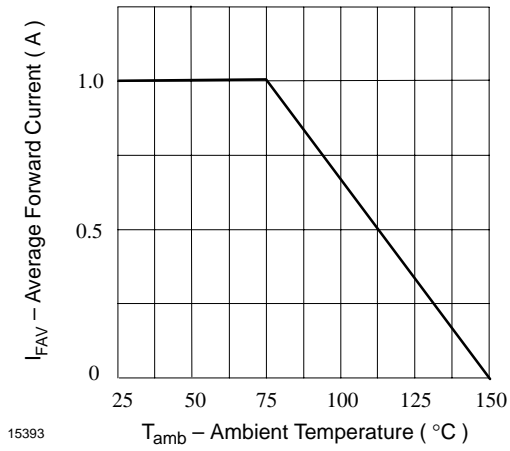


Figure 1. Max. Average Forward Current vs. Ambient Temperature

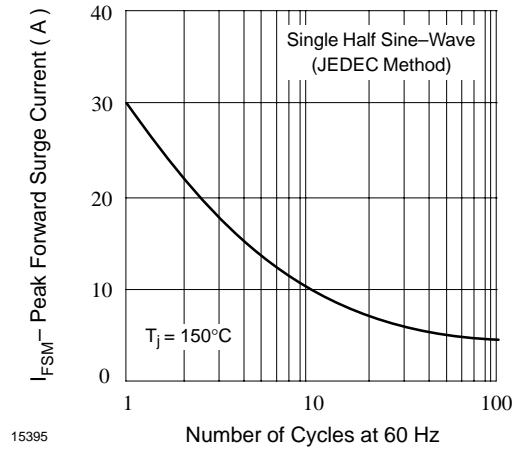


Figure 3. Max. Peak Forward Surge Current vs. Number of Cycles

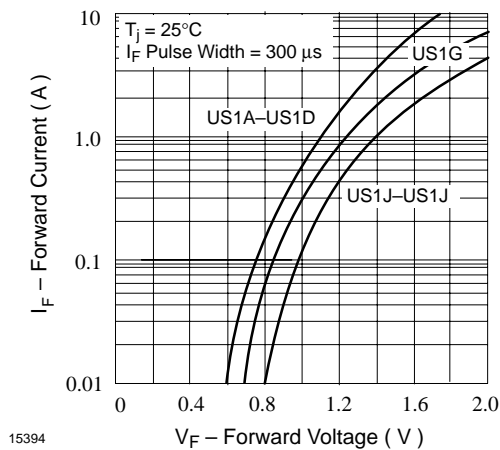


Figure 2. Typ. Forward Current vs. Forward Voltage

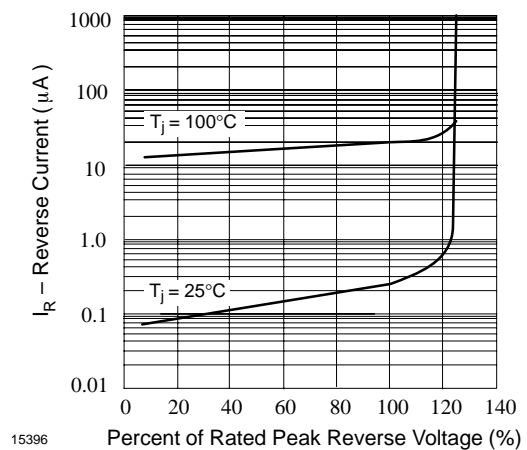


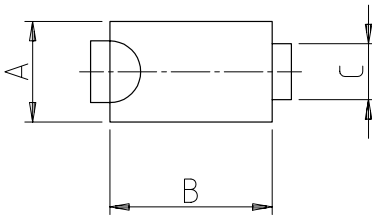
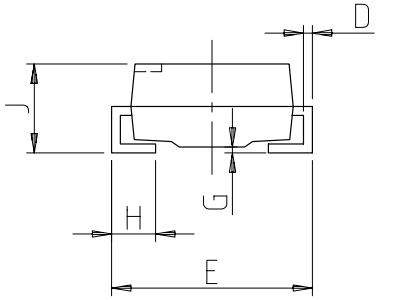
Figure 4. Typ. Reverse Current vs. Percent of Rated Peak Reverse Voltage



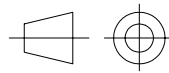
# US1A-US1M

## Vishay Lite-On Power Semiconductor

### Dimensions in mm



SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.10	0.20
H	0.76	1.52
J	2.01	2.62
All Dimensions in mm		



technical drawings  
according to DIN  
specifications

14458

Case: molded plastic  
Polarity: cathode band or cathode notch  
Approx. weight: 0.064 grams  
Mounting position: any  
Marking: type number



### 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-Telefunken products for any unintended or unauthorized application, the buyer shall indemnify Vishay-Telefunken 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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