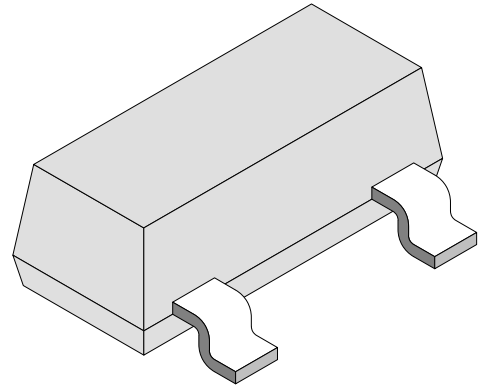


# Surface Mount Switching Diode

## Features

- Silicon planar epitaxial high speed diode
- For switching and general purpose applications



94 8550

## Absolute Maximum Ratings

 $T_j = 25^\circ\text{C}$ 

Parameter	Test Conditions	Type	Symbol	Value	Unit
Working peak reverse voltage =DC Blocking voltage		BAS19	$V_{RWM}$ $=V_R$	100	V
		BAS20		150	V
		BAS21		200	V
Repetitive peak reverse voltage		BAS19	$V_{RRM}$	120	V
		BAS20	$V_{RRM}$	200	V
		BAS21	$V_{RRM}$	250	V
Peak forward surge current	$t=1\mu\text{s}$		$I_{FSM}$	2.5	A
	$t=1\text{s}$		$I_{FSM}$	0.5	A
Repetitive peak forward current			$I_{FRM}$	625	mA
Average forward current	$t_p < 0.3\text{ms}$		$I_{FAV}$	200	mA
Forward current	$T_{Case}=T_L$ (8mm from Case) $=T_{amb}$		$I_F$	400	mA
Power dissipation	$T_{Case}=T_L$ (8mm from Case) $=T_{amb}$		$P_{tot}$	250	mW
Junction and storage temperature range			$T_j=T_{stg}$	-55...+150	$^\circ\text{C}$

## Maximum Thermal Resistance

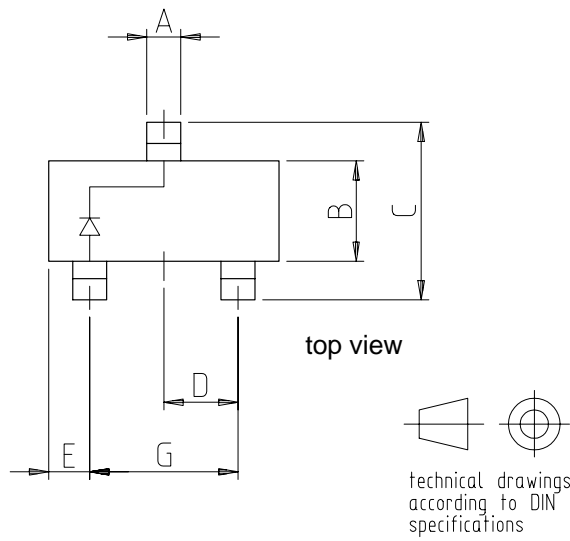
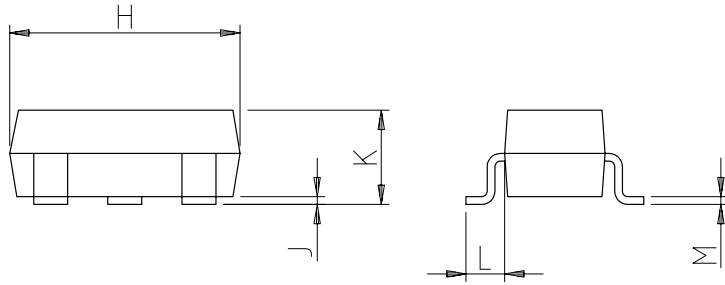
 $T_j = 25^\circ\text{C}$ 

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient		$R_{thJA}$	500	K/W

**Electrical Characteristics** $T_j = 25^\circ\text{C}$ 

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=100\text{mA}$		$V_F$			1.0	V
	$I_F=200\text{mA}$		$V_F$			1.25	V
Reverse current	$V_R=V_{R\text{max}}$		$I_R$			100	nA
	$V_R=V_{R\text{max}}, T_j=150^\circ\text{C}$		$I_R$			100	$\mu\text{A}$
Reverse breakdown voltage	$I_R=100\mu\text{A}, t_p<0.3\text{ms}$	BAS19	$V_{(\text{BR})R}$	120			V
	$I_R=100\mu\text{A}$	BAS20	$V_{(\text{BR})R}$	200			V
	$I_R=100\mu\text{A}, V_R<275\text{V}$	BAS21	$V_{(\text{BR})R}$	250			V
Reverse recovery time	$I_F=I_R=10\text{mA}, R_L=100\Omega,$ $V_R=6\text{V to } I_R=1\text{mA}, R_L=100\Omega$		$t_{rr}$			50	ns
Diode capacitance	$V_R=0, f=1\text{MHz}$		$C_D$			5	pF
Dynamic forward resistance	$I_F=10\text{mA}$		$r_f$		5		$\Omega$

## Dimensions in mm



SOT-23		
Dim	Min	Max
A	0.37	0.50
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.79	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.130
All Dimensions in mm		

14370

Case: SOT-23, plastic  
 Terminals: Solderable per MIL-STD-202, Method 208  
 Approx. weight: 0.008 grams  
 Marking: BAS19 K80,  
           BAS20 K81,  
           BAS21 K82



### 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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