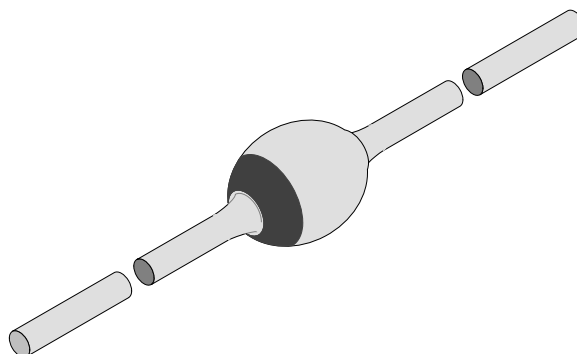


Silicon Mesa Rectifiers

Features

- Controlled avalanche characteristics
- Glass passivated
- Low reverse current
- High surge current loading
- Hermetically sealed axial–leaded glass envelope



94 9539

Applications

Rectifier, general purpose

Absolute Maximum Ratings

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

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage =Repetitive peak reverse voltage		1N5059	V_R $=V_{RRM}$	200	V
		1N5060		400	V
		1N5061		600	V
		1N5062		800	V
Peak forward surge current	$t_p=10\text{ms}$, half-sinewave		I_{FSM}	50	A
Average forward current	$R_{thJA}=45\text{K/W}$, $T_{amb}=50^{\circ}\text{C}$		I_{FAV}	2	A
	$R_{thJA}=100\text{K/W}$, $T_{amb}=75^{\circ}\text{C}$		I_{FAV}	0.8	A
Junction and storage temperature range			$T_j=T_{stg}$	$-55...+175$	$^{\circ}\text{C}$
Max. pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}=1\text{A}$, inductive load		E_R	20	mJ

Maximum Thermal Resistance

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

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	lead length $l = 10\text{mm}$, $T_L = \text{constant}$	R_{thJA}	45	K/W
	on PC board with spacing 25 mm	R_{thJA}	100	K/W

Electrical Characteristics

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

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=1\text{A}$		V_F			1	V
	$I_F=2.5\text{A}$		V_F			1.15	V
Reverse current	$V_R=V_{RRM}$		I_R			1	μA
	$V_R=V_{RRM}, T_j=100^\circ\text{C}$		I_R			10	μA
	$V_R=V_{RRM}, T_j=150^\circ\text{C}$		I_R			100	μA
Reverse breakdown voltage	$I_R=100\mu\text{A}$	1N5059	$V_{(BR)R}$	225		1600	V
		1N5060	$V_{(BR)R}$	450		1600	V
		1N5061	$V_{(BR)R}$	650		1600	V
		1N5062	$V_{(BR)R}$	900		1600	V
Reverse recovery time	$I_F=0.5\text{A}, I_R=1\text{A}, i_R=0.25\text{A}$		t_{rr}			4	μs
Diode capacitance	$V_R=0\text{V}, f=1\text{MHz}$		C_D		50		pF

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

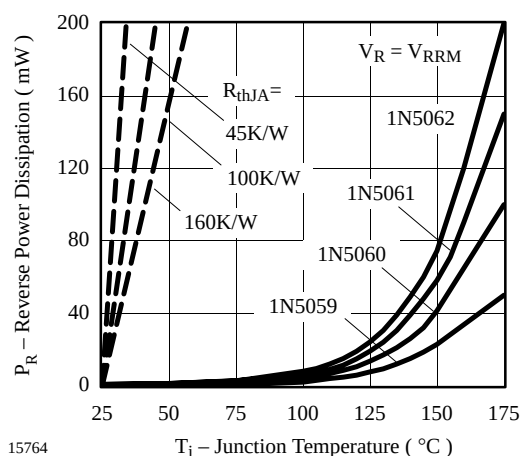


Figure 1. Max. Reverse Power Dissipation vs. Junction Temperature

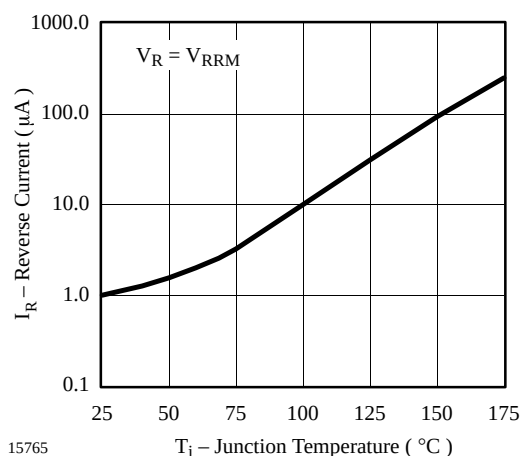


Figure 2. Max. Reverse Current vs. Junction Temperature

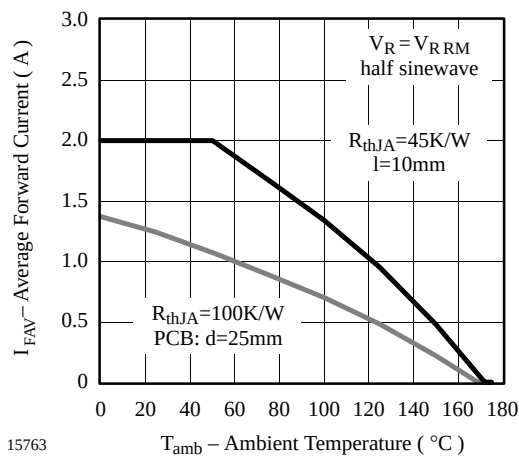


Figure 3. Max. Average Forward Current vs. Ambient Temperature

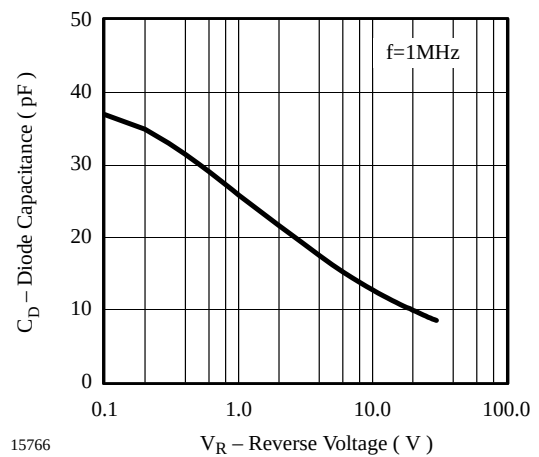


Figure 5. Typ. Diode Capacitance vs. Reverse Voltage

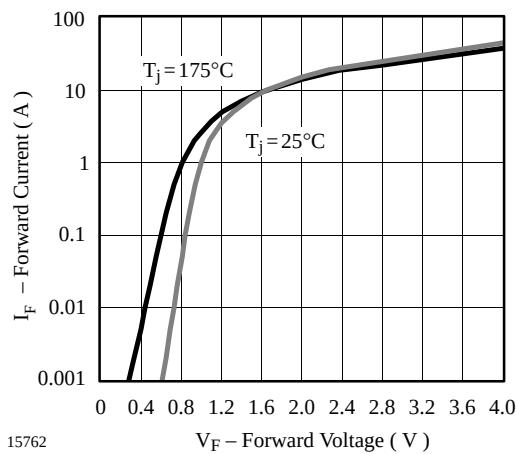
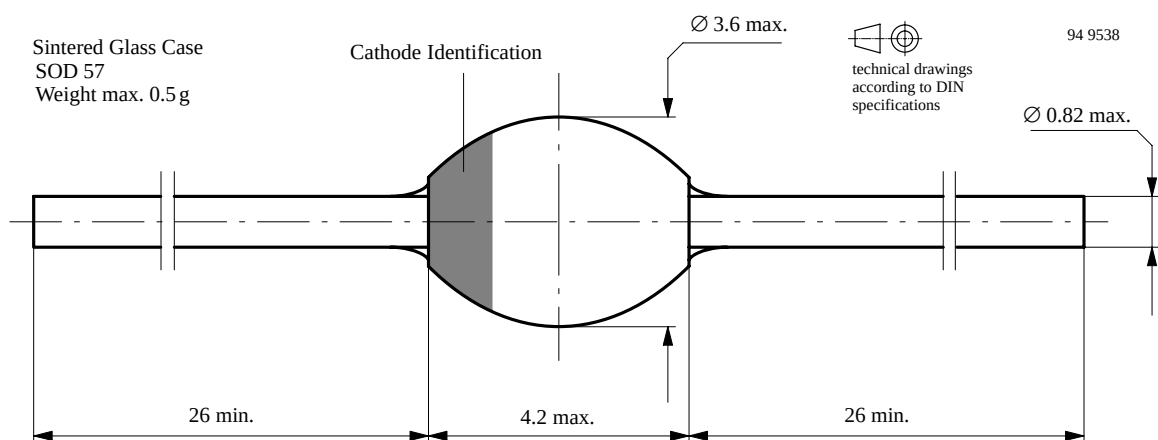


Figure 4. Max. Forward Current vs. Forward Voltage

Dimensions in mm



Polarity: Cathode indicated by a band



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.

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