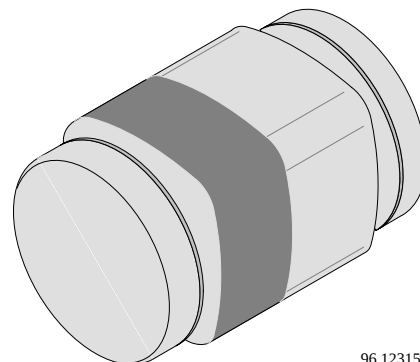




Schottky Barrier Diodes

Features

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop



96 12315

Applications

HF–Detector
Protection circuit
Small battery charger
AC–DC / DC–DC converters

Absolute Maximum Ratings

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

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage		MCL103A	V_R	40	V
		MCL103B	V_R	30	V
		MCL103C	V_R	20	V
Peak forward surge current	$t_p=300\mu\text{s}$, square pulse		I_{FSM}	15	A
Power dissipation	$l=4\text{mm}$, $T_L=\text{constant}$		P_{tot}	400	mW
Junction temperature			T_j	125	$^\circ\text{C}$
Storage temperature range			T_{stg}	$-65\dots+150$	$^\circ\text{C}$

Maximum Thermal Resistance

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

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$l=4\text{mm}$, $T_L=\text{constant}$	R_{thJA}	250	K/W

Electrical Characteristics

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

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$I_R = 10\mu\text{A}$	MCL103A	$V_{(BR)R}$	40			V
		MCL103B	$V_{(BR)R}$	30			V
		MCL103C	$V_{(BR)R}$	20			V
Leakage current	$V_R = 30\text{V}$	MCL103A	I_R			5	μA
	$V_R = 20\text{V}$	MCL103B	I_R			5	μA
	$V_R = 10\text{V}$	MCL103C	I_R			5	μA
Forward voltage drop	$I_F = 20\text{mA}$		V_F			0.37	V
	$I_F = 200\text{mA}$					0.6	V
Junction capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		C_D		50		pF
Reverse recovery time	$I_F = I_R = 50$ to 200mA , recover to $0.1 I_R$		t_{rr}		10		ns

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

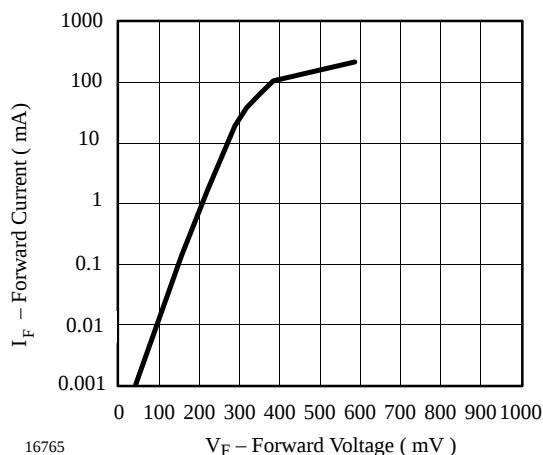


Figure 1. Forward Current vs. Forward Voltage

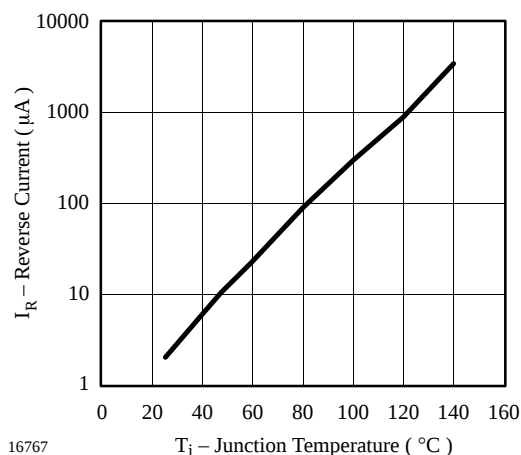


Figure 3. Reverse Current vs. Junction Temperature

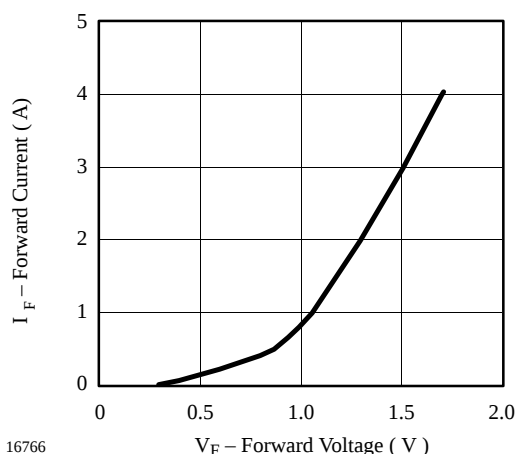


Figure 2. Forward Current vs. Forward Voltage

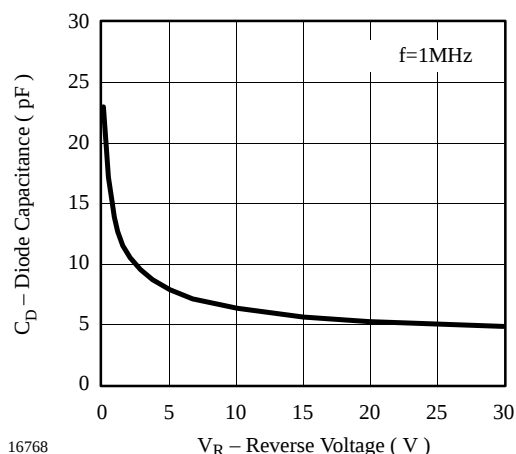


Figure 4. Diode Capacitance vs. Reverse Voltage

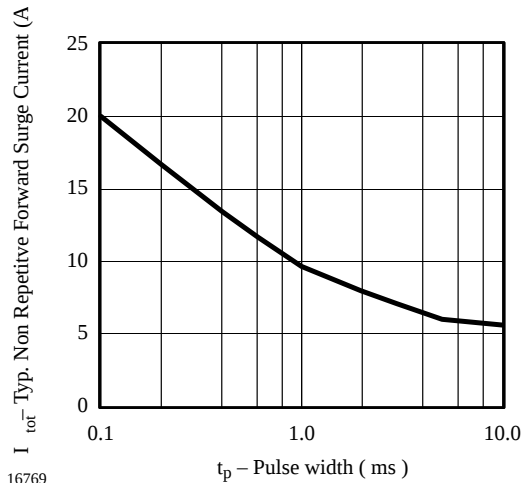
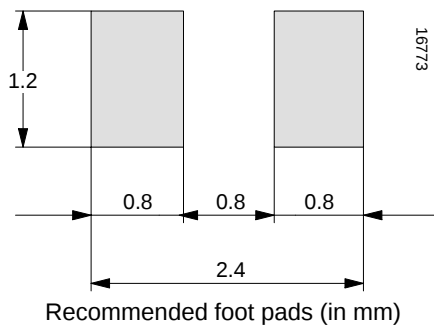
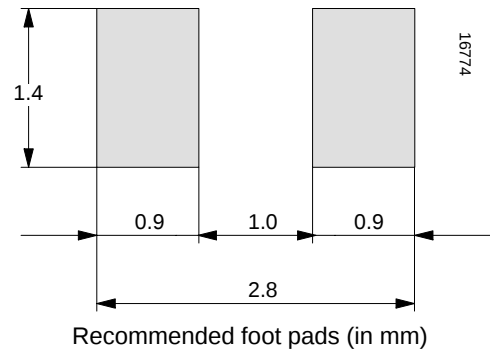


Figure 5. Typ. Non Repetitive Forward Surge Current vs. Pulse width

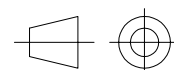
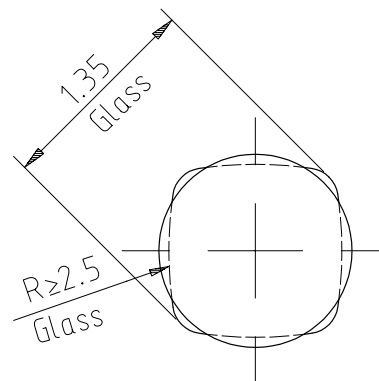
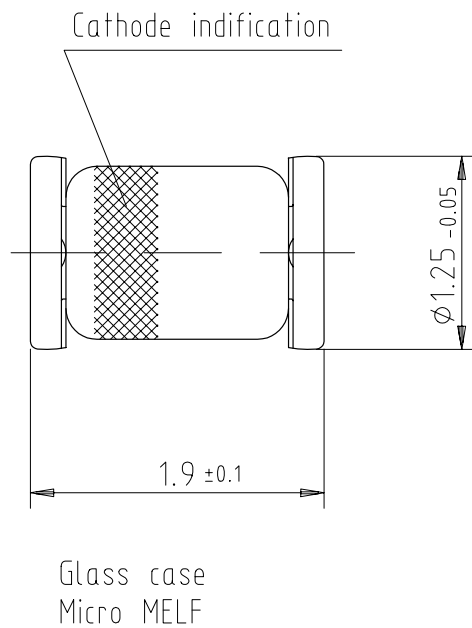
Reflow Soldering



Wave Soldering



Dimensions in mm



96 12072

technical drawings
according to DIN
specifications

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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