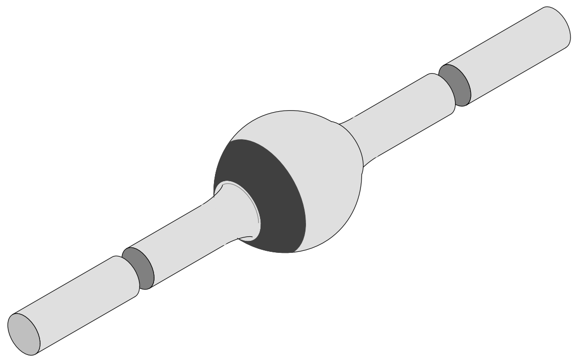
TEMIC
Semiconductors

SF5400...SF5408

Super Fast Soft Recovery Rectifier

Features

- Glass passivated
- Hermetically sealed axial leaded glass envelope
- Low reverse current
- High reverse voltage



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Applications

Switched mode power supplies
High–frequency inverter circuits

Absolute Maximum Ratings

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Value	Unit
Repetitive peak reverse voltage		SF5400	V_{RRM}	50	V
		SF5401	V_{RRM}	100	V
		SF5402	V_{RRM}	200	V
		SF5403	V_{RRM}	300	V
		SF5404	V_{RRM}	400	V
		SF5405	V_{RRM}	500	V
		SF5406	V_{RRM}	600	V
		SF5407	V_{RRM}	800	V
		SF5408	V_{RRM}	1000	V
Reverse voltage		SF5400	V_R	50	V
		SF5401	V_R	100	V
		SF5402	V_R	200	V
		SF5403	V_R	300	V
		SF5404	V_R	400	V
		SF5405	V_R	500	V
		SF5406	V_R	600	V
		SF5407	V_R	800	V
		SF5408	V_R	1000	V
Peak forward surge current	t_p = 10 ms, half sinewave		I_{FSM}	150	A
Average forward current			I_{FAV}	3	A
Junction temperature			T_j	175	˚C
Storage temperature range			T_{stg}	–55...+175	˚C

Maximum Thermal Resistance

T_j = 25°C

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	Lead length l = 10 mm, T_L = constant	R_{thJA}	25	K/W

Characteristics

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F = 3 A	SF5400	V_F			1.1	V
		SF5401	V_F			1.1	V
		SF5402	V_F			1.1	V
		SF5403	V_F			1.1	V
		SF5404	V_F			1.1	V
		SF5405	V_F			1.7	V
		SF5406	V_F			1.7	V
		SF5407	V_F			1.7	V
		SF5408	V_F			1.7	V
Reverse current	V_R=V_{RRM}		I_R			5	μA
	V_R=V_{RRM}, T_j=125°C		I_R			50	μA
Reverse breakdown voltage	I_R=100μA	SF5400	$V_{(BR)R}$	60			V
		SF5401	$V_{(BR)R}$	110			V
		SF5402	$V_{(BR)R}$	220			V
		SF5403	$V_{(BR)R}$	330			V
		SF5404	$V_{(BR)R}$	440			V
		SF5405	$V_{(BR)R}$	550			V
		SF5406	$V_{(BR)R}$	660			V
		SF5407	$V_{(BR)R}$	880			V
		SF5408	$V_{(BR)R}$	1100			V
Reverse recovery time	I_F=0.5A, I_R=1A, i_R=0.25A	SF5400	t_{rr}			50	ns
		SF5401	t_{rr}			50	ns
		SF5402	t_{rr}			50	ns
		SF5403	t_{rr}			50	ns
		SF5404	t_{rr}			50	ns
		SF5405	t_{rr}			75	ns
		SF5406	t_{rr}			75	ns
		SF5407	t_{rr}			75	ns
		SF5408	t_{rr}			75	ns

Typical Characteristics (T_j = 25°C unless otherwise specified)

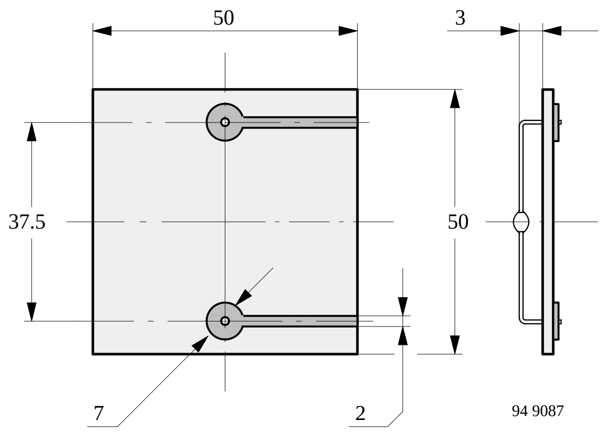


Figure 1. Epoxy glass hard tissue, board thickness 1.5 mm, $R_{thJA} \leqq 70$ K/W

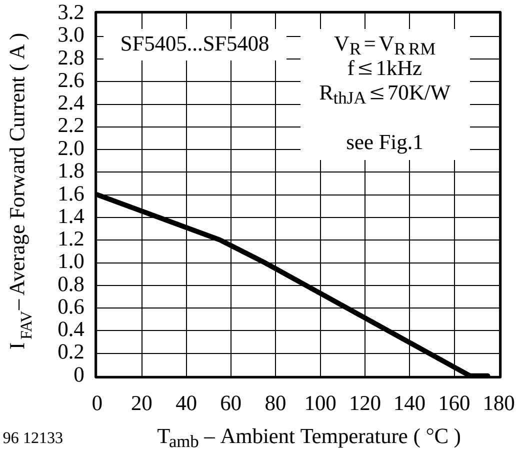


Figure 4. Average Forward Current vs. Ambient Temperature

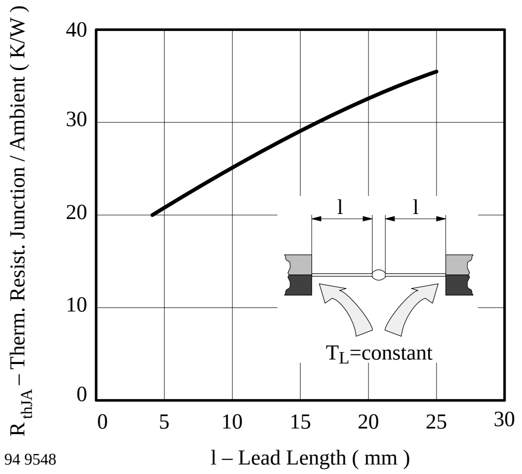


Figure 2. Thermal Resistance vs. Lead Length

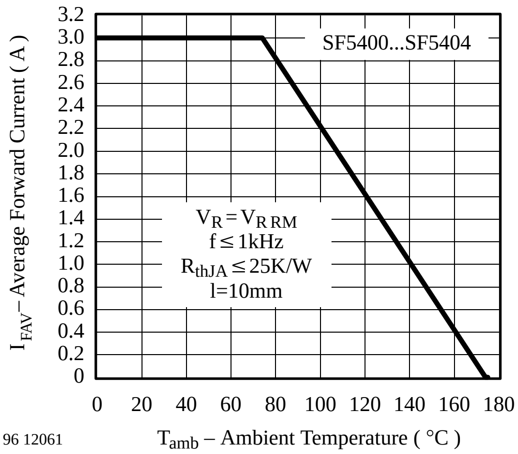


Figure 5. Average Forward Current vs. Ambient Temperature

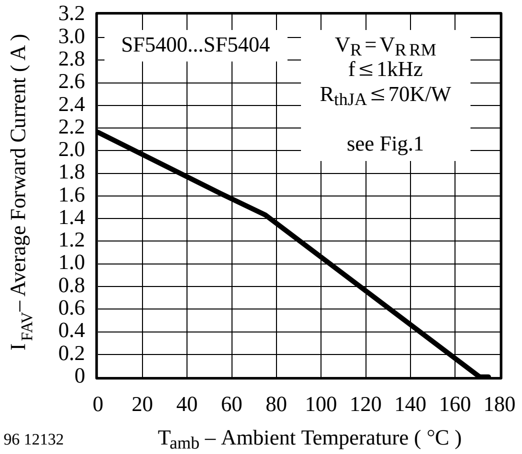


Figure 3. Average Forward Current vs. Ambient Temperature

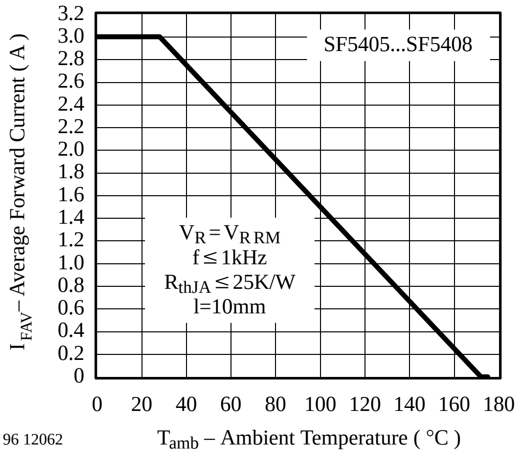


Figure 6. Average Forward Current vs. Ambient Temperature

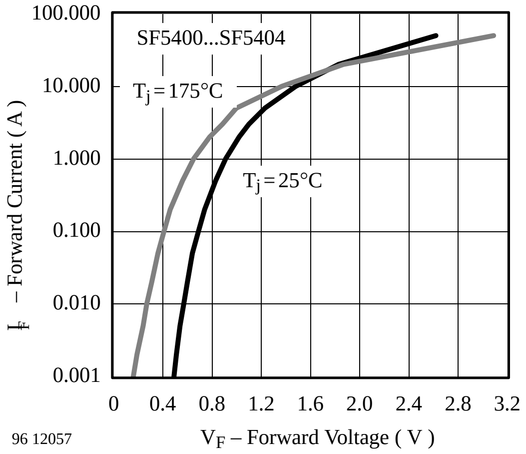


Figure 7. Forward Current vs. Forward Voltage

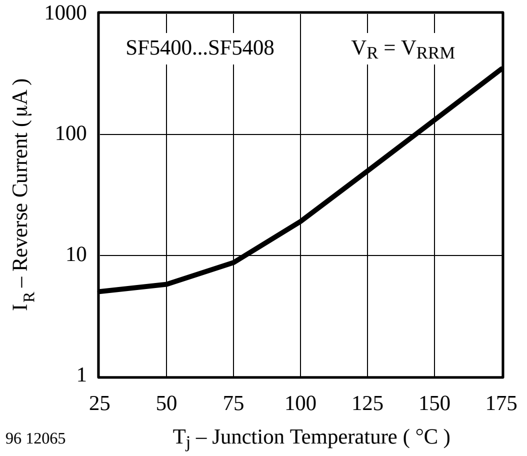


Figure 9. Reverse Current vs. Junction Temperature

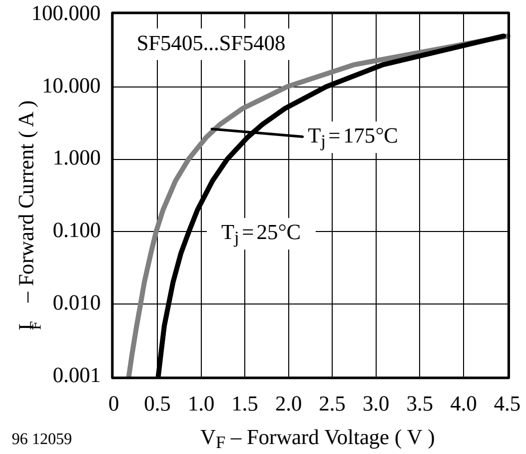
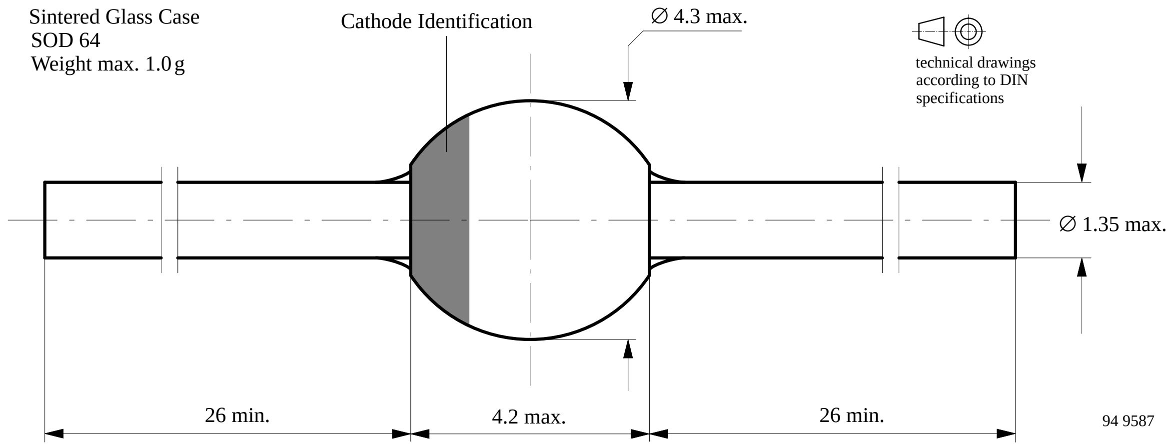


Figure 8. Forward Current vs. Forward Voltage

Dimensions in mm



Ozone Depleting Substances Policy Statement

It is the policy of **TEMIC TELEFUNKEN microelectronic 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.

TEMIC TELEFUNKEN microelectronic GmbH semiconductor division 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.

TEMIC can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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