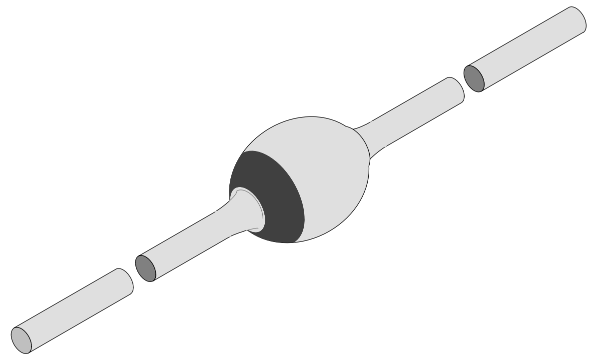
Silicon Mesa Rectifier

Features

- Controlled avalanche characteristics
- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- High surge current capability



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Applications

General purpose

Absolute Maximum Ratings

$T_j = 25°C$

Parameter	Test Conditions	Type	Symbol	Value	Unit
Peak reverse voltage, non repetitive			V_{RSM}	1250	V
Reverse voltage			V_R	800	V
Peak forward surge current	t_p=10ms		I_{FSM}	50	A
Repetitive peak forward current			I_{FRM}	12	A
Average forward current	φ=180˚		I_{FAV}	2	A
Pulse avalanche peak power	T_j=175˚C, t_p=20µs, half sinus wave		P_R	1000	W
Max. pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}$=1A, T_j=175˚C		E_R	20	mWs
	i^2xt–rating		i^2xt	8	A^2xs
Junction temperature			T_j	175	˚C
Storage temperature range			T_{stg}	–55...+150	˚C

Maximum Thermal Resistance

$T_j = 25°C$

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

Characteristics

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F=1A		V_F		0.9	1.0	V
	I_F=10A		V_F			1.65	V
Reverse current	V_R=800V		I_R		0.1	1	μA
	V_R=800V, T_j=100˚C		I_R		5	10	μA
Breakdown voltage	I_R=100μA, t_p/T=0.01, t_p=0.3ms		$V_{(BR)}$	1250			V
Diode capacitance	V_R=0, f=0.47MHz		C_D		50		pF
Reverse recovery time	I_F=0.5A, I_R=1A, i_R=0.25A		t_{rr}			4	μs
	I_F=1A, d_i/d_t=5A/μs, V_R=50V		t_{rr}			4	μs
Reverse recovery charge	I_F=1A, d_i/d_t=5A/μs		Q_{rr}			3	μC

Typical Characteristics (T$_j$ = 25°C unless otherwise specified)

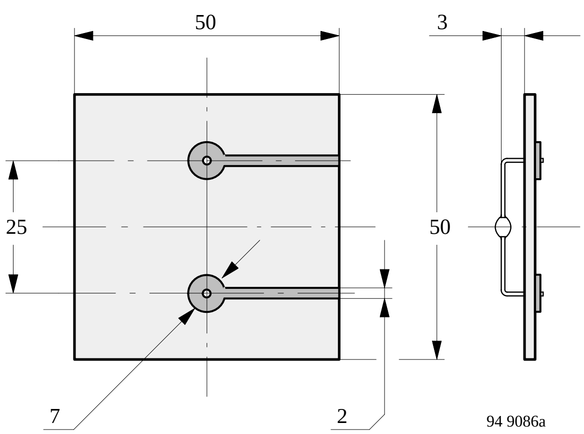


Figure 1 : Epoxy glass hard tissue, board thickness 1.5 mm, R_{thJA} ≦ 100 K/W

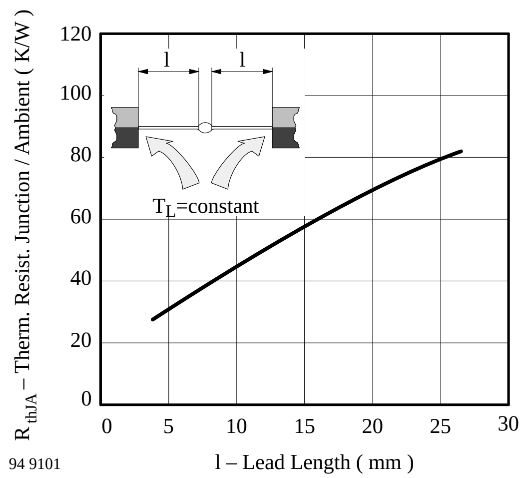


Figure 2 : Thermal Resistance vs. Lead Length

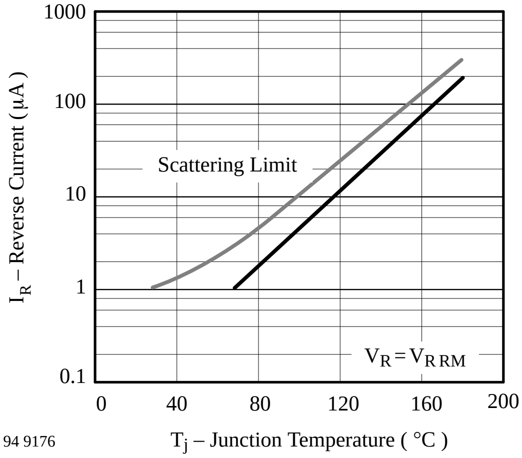


Figure 3 : Reverse Current vs. Junction Temperature

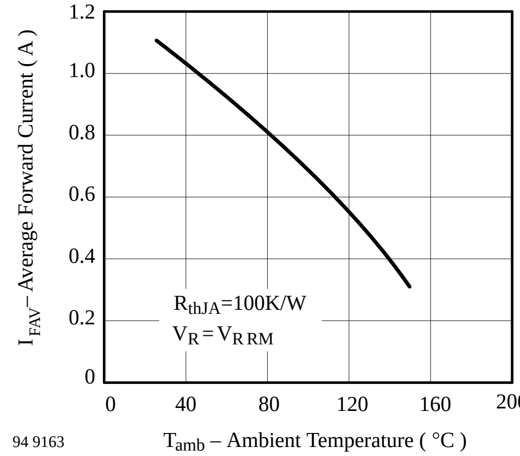


Figure 4 : Average Forward Current vs. Ambient Temperature

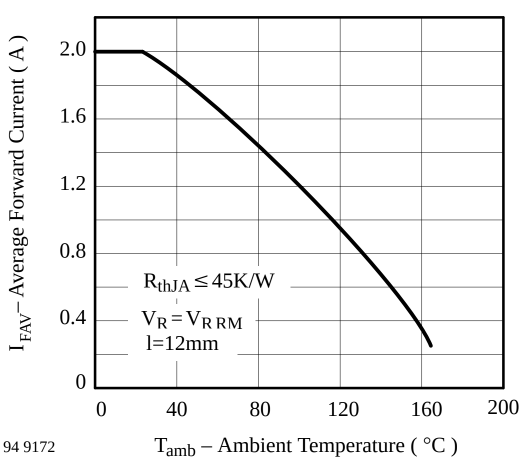


Figure 5 : Average Forward Current vs. Ambient Temperature

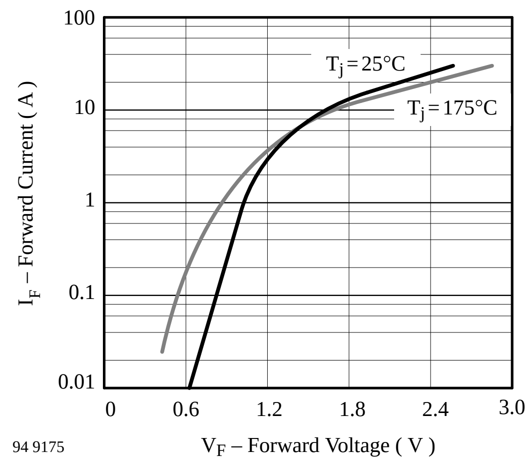


Figure 6 : Forward Current vs. Forward Voltage

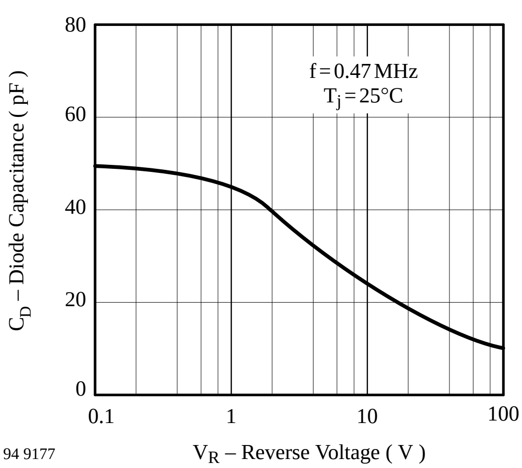


Figure 7 : Diode Capacitance vs. Reverse Voltage

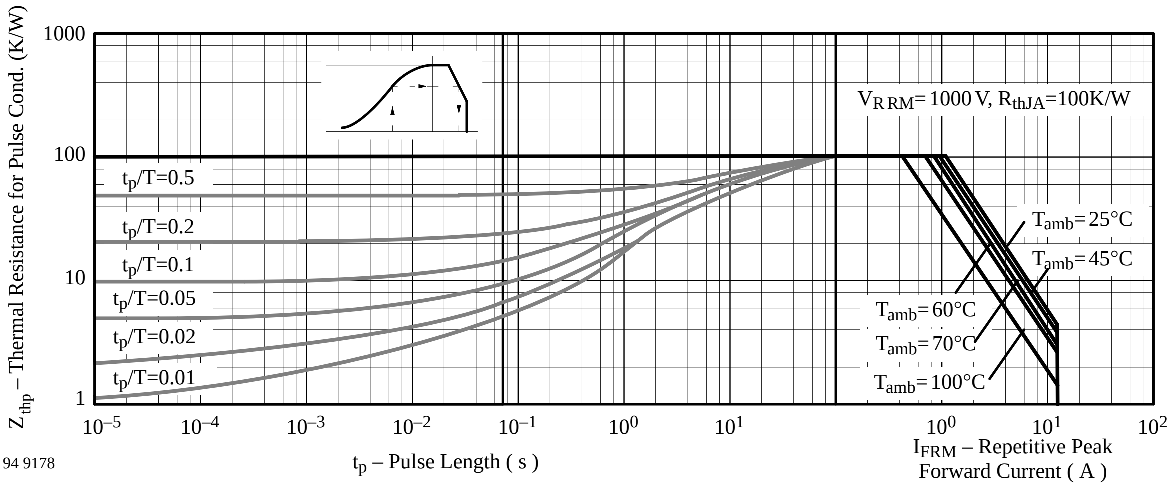
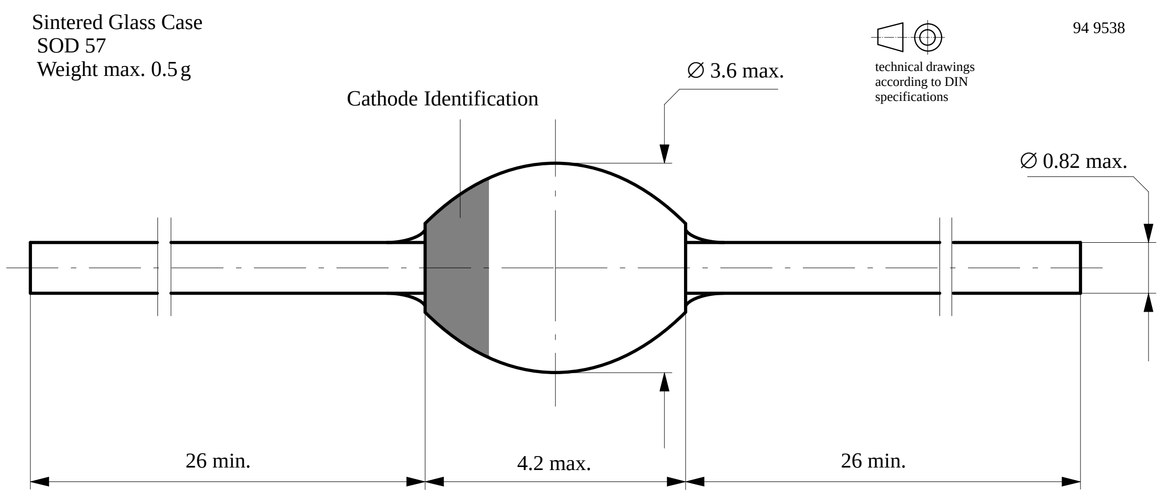


Figure 9 : Thermal Response

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 and
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.

Of particular concern is the control or elimination of releases into the atmosphere of those substances which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) will soon 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 any 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 and
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 and do not contain ozone depleting substances.

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