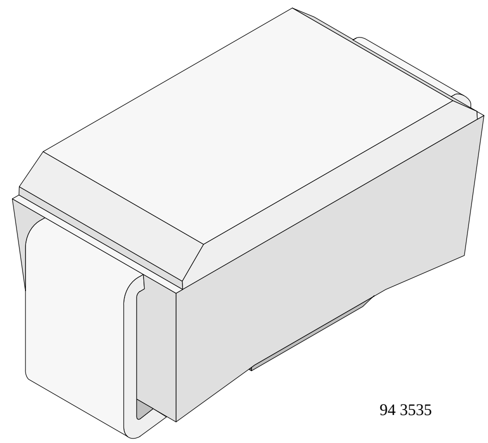
Silicon Mesa SMD Rectifier

Features

- Controlled avalanche characteristics
- Glass passivated junction
- Low reverse current
- High surge current capability
- Wave and reflow solderable



Applications

Surface mounting
General purpose rectifier

Absolute Maximum Ratings

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage, repetitive peak reverse voltage		BYG10D	$V_R=V_{RRM}$	200	V
		BYG10G	$V_R=V_{RRM}$	400	V
		BYG10J	$V_R=V_{RRM}$	600	V
		BYG10K	$V_R=V_{RRM}$	800	V
		BYG10M	$V_R=V_{RRM}$	1000	V
Peak forward surge current	t_p=10ms		I_{FSM}	30	A
Average forward current			I_{FAV}	1.5	A
Junction temperature			T_j	150	˚C
Storage temperature range			T_{stg}	–55...+150	˚C
Max. pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}$=1A, T_j=25˚C		E_R	20	mWs

Maximum Thermal Resistance

T_j = 25°C

Parameter	Test Conditions	Symbol	Value	Unit
Junction case		R_{thJC}	25	K/W
Junction ambient	mounted on epoxy–glass hard issue, Fig. 1a	R_{thJA}	150	K/W
	mounted on epoxy–glass hard issue, Fig. 1b	R_{thJA}	125	K/W
	mounted on Al–oxid–ceramic (Al_2O_3), Fig. 1b	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			1.1	V
	I_F=1.5A		V_F			1.15	V
Reverse current	V_R=V_{RRM}		I_R			1	μA
	V_R=V_{RRM}, T_j=100°C		I_R			10	μA
Reverse recovery time	I_F=0.5A, I_R=1A, i_R=0.25A		t_{rr}			5	μs

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

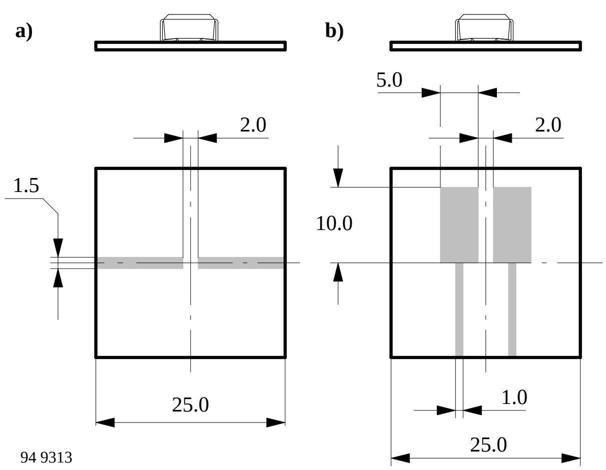


Figure 1 : Boards for R_{thJA} definition (copper overlay 35μ)

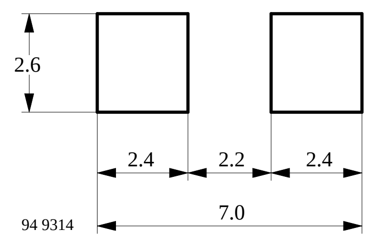


Figure 2 : Recommended foot pads

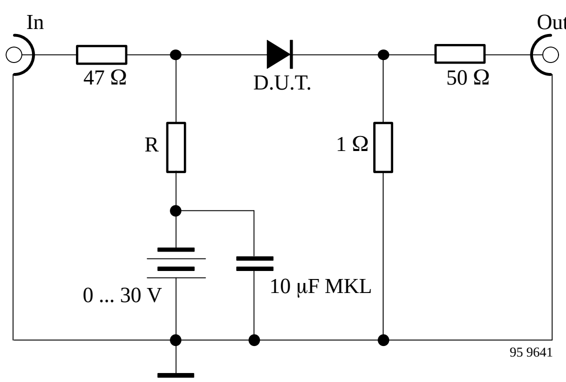


Figure 3 : Turn off switching test circuit

In: Pulse generator
RG = 50 Ω
tr = < 15 ns

Out: Osc.
Ri = 1 MΩ
Ci = 16 pF
tr = < 3.5 ns

Circuit 1: R = 24 Ω
Circuit 2: R = 50 Ω

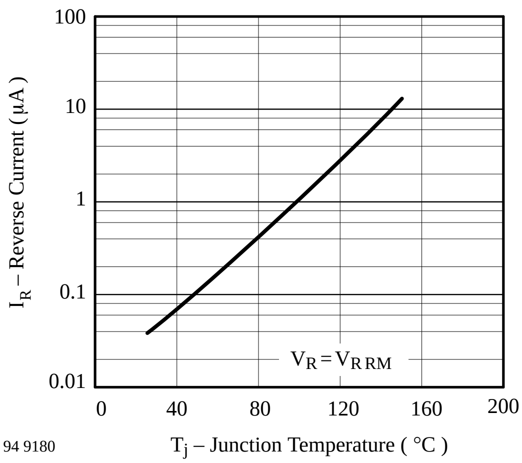


Figure 4 : Reverse Current vs. Junction Temperature

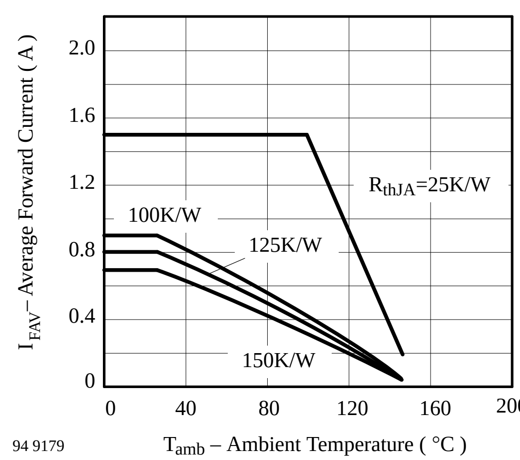


Figure 5 : Average Forward Current vs. Ambient Temperature

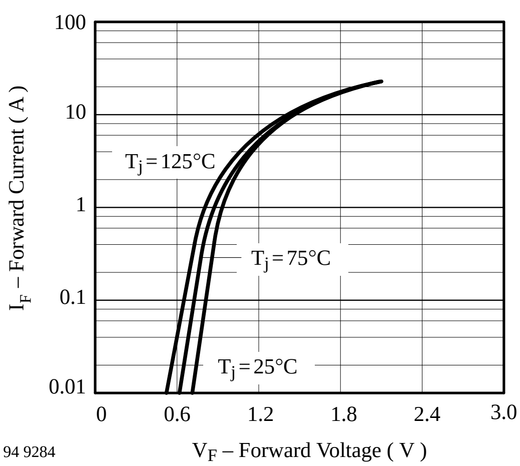


Figure 6 : Forward Current vs. Forward Voltage

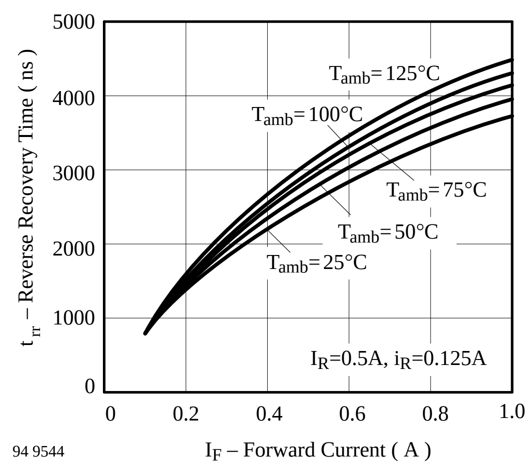


Figure 7 : Reverse Recovery Time vs. Forward Current

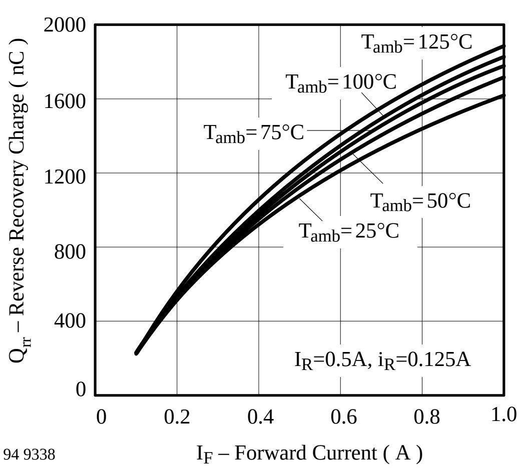


Figure 8 : Reverse Recovery Charge vs. Forward Current

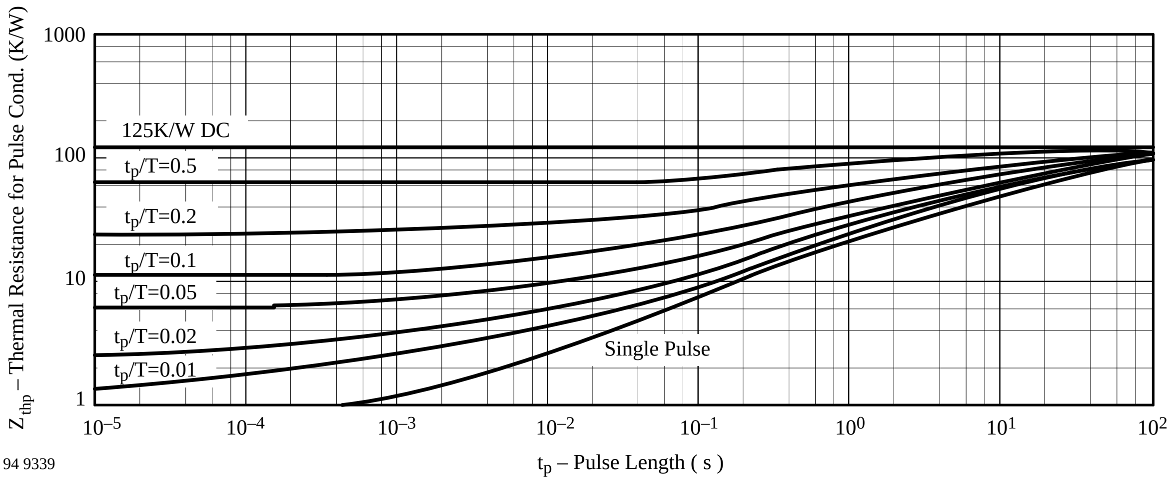
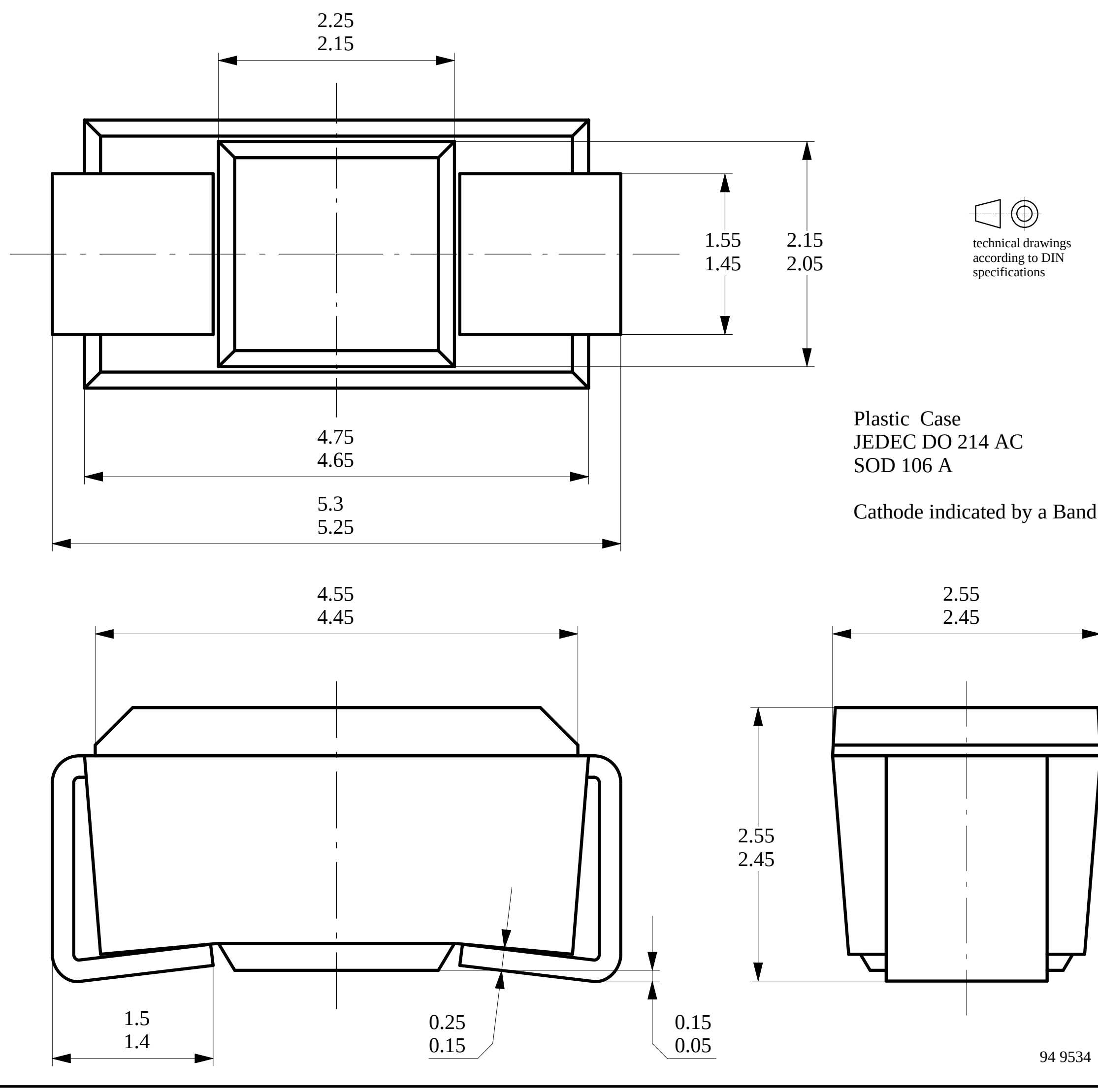


Figure 9 : Thermal Response

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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