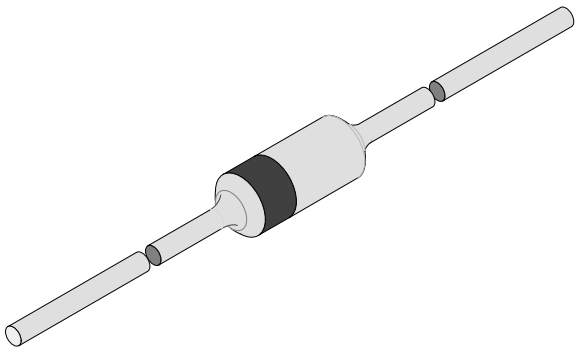
Silicon Epitaxial Planar Diodes

Features

- Electrically equivalent diodes:
  1N4148 – 1N914
  1N4448 – 1N914B

Applications

Extreme fast switches



94 9367

Absolute Maximum Ratings

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Value	Unit
Repetitive peak reverse voltage			V_{RRM}	100	V
Reverse voltage			V_R	75	V
Peak forward surge current	t_p=1µs		I_{FSM}	2	A
Repetitive peak forward current			I_{FRM}	500	mA
Forward current			I_F	300	mA
Average forward current	V_R=0		I_{FAV}	150	mA
Power dissipation	l=4mm, T_L=45˚C		P_V	440	mW
	l=4mm, T_L≦25˚C		P_V	500	mW
Junction temperature			T_j	200	˚C
Storage temperature range			T_{stg}	–65...+200	˚C

Maximum Thermal Resistance

T_j = 25°C

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	l=4mm, T_L=constant	R_{thJA}	350	K/W

Characteristics

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F=5mA	1N4448	V_F	0.62		0.72	V
	I_F=10mA	1N4148	V_F			1	V
	I_F=100mA	1N4448	V_F			1	V
Reverse current	V_R=20 V		I_R			25	nA
	V_R=20 V, T_j=150 ˚C		I_R			50	µA
	V_R=75 V		I_R			5	µA
Breakdown voltage	I_R=100µA, t_p/T=0.01, t_p=0.3ms		$V_{(BR)}$	100			V
Diode capacitance	V_R=0, f=1MHz, V_{HF}=50mV		C_D			4	pF
Rectification efficiency	V_{HF}=2V, f=100MHz		η_r	45			%
Reverse recovery time	I_F=I_R=10mA, i_R=1mA		t_{rr}			8	ns
	I_F=10mA, V_R=6V, i_R=0.1xI_R, R_L=100Ω		t_{rr}			4	ns

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

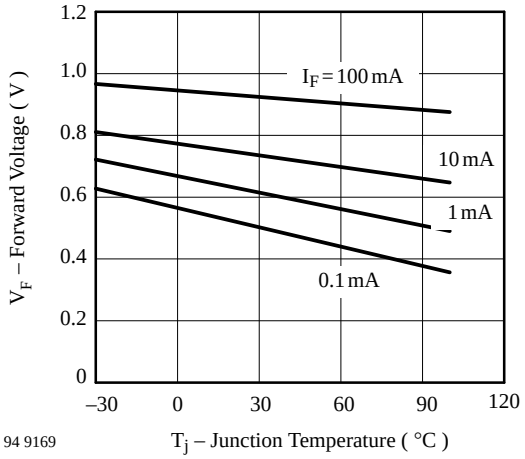


Figure 1. Forward Voltage vs. Junction Temperature

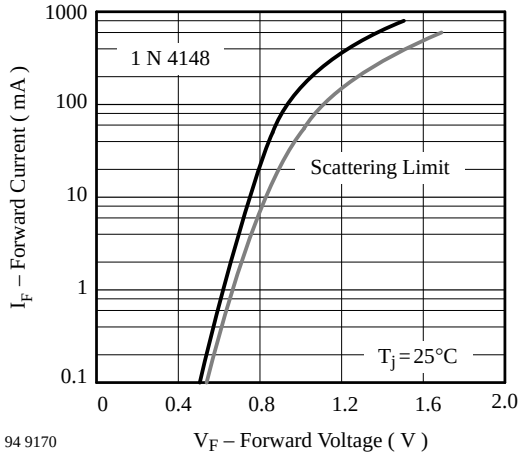


Figure 2. Forward Current vs. Forward Voltage

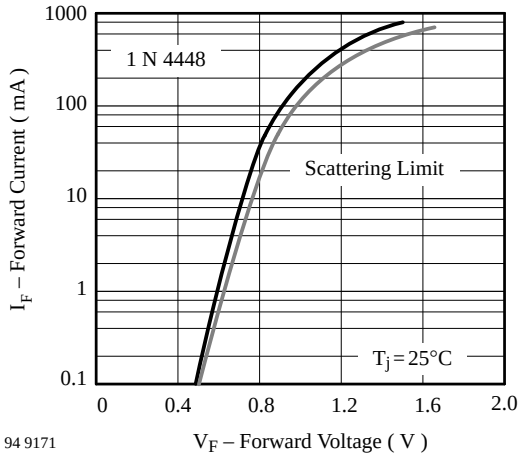


Figure 3. Forward Current vs. Forward Voltage

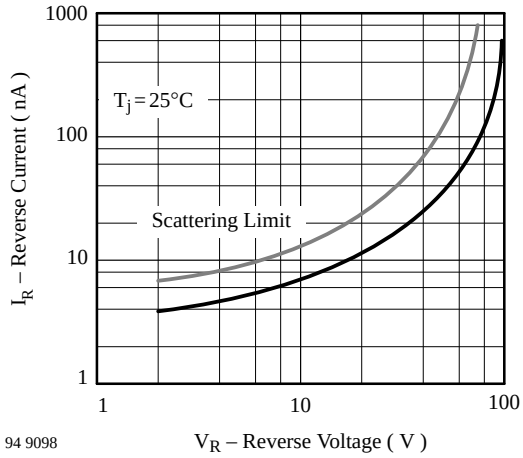
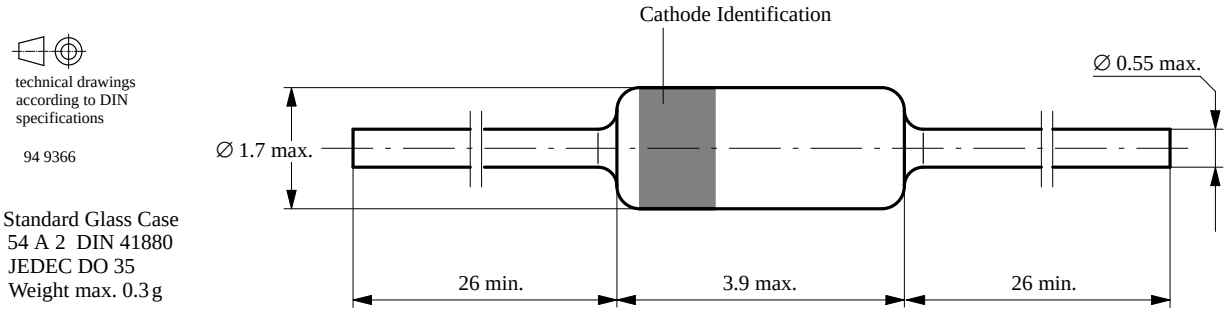


Figure 4. Reverse Current vs. Reverse Voltage

Dimensions in mm



Standard Glass Case
54 A 2 DIN 41880
JEDEC DO 35
Weight max. 0.3 g

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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