RECTIFIER DIODE

Double-diffused glass-passivated rectifier diode in hermetically sealed axial-leaded glass envelope, intended for use in general industrial applications where a high repetitive peak reverse voltage is required.

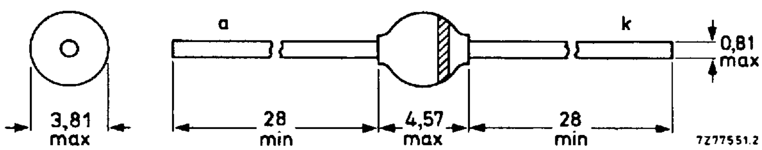
QUICK REFERENCE DATA

Crest working reverse voltage	V_{RWM}	max.	800	V
Repetitive peak reverse voltage	V_{RRM}	max.	1600	V
Average forward current	$I_{F(AV)}$	max.	1,2	A
Non-repetitive peak forward current	I_{FSM}	max.	25	A
Junction temperature	T_j	max.	175	°C

MECHANICAL DATA

Dimensions in mm

Fig. 1 SOD-57.



The marking band indicates the cathode.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Crest working reverse voltage	V_{RWM}	max.	800	V
Repetitive peak reverse voltage ($\delta \leq 1\%$)	V_{RRM}	max.	1600	V
Average forward current (averaged over any 20 ms period); T_{tp} = 50 °C; lead length 10 mm	$I_{F(AV)}$	max.	1,2	A
T_{amb} = 60 °C; see Fig. 2	$I_{F(AV)}$	max.	0,6	A
Repetitive peak forward current	I_{FRM}	max.	5	A
Non-repetitive peak forward current t = 10 ms, half-sine wave; $T_j = T_{jmax}$ prior to surge; $V_R = V_{RWMmax}$	I_{FSM}	max.	25	A
Storage temperature	T_{stg}		−65 to +175	°C
Junction temperature	T_j	max.	175	°C

THERMAL RESISTANCE

Influence of mounting method

1. Thermal resistance from junction to tie-point at a lead length of 10 mm	$R_{th\ j\text{-}tp}$	=	46	K/W
2. Thermal resistance from junction to ambient; device mounted on an 1,5 mm thick epoxy-glass printed-circuit board; Cu-thickness $\geq$ 40 μm; Fig. 2 (See „Thermal model")	$R_{th\ j\text{-}a}$	=	100	K/W

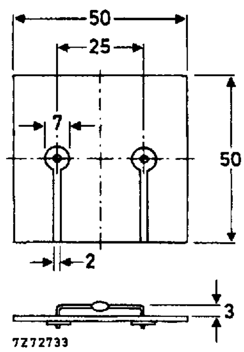


Fig. 2 Device mounted on a printed-circuit board.

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Forward voltage *			
I_F = 2 A	V_F	<	1,5 V
Reverse current			
$V_R = V_{RWMmax}$	I_R	<	1 μA
$V_R = V_{RWMmax}$; T_j = 150 °C	I_R	<	200 μA

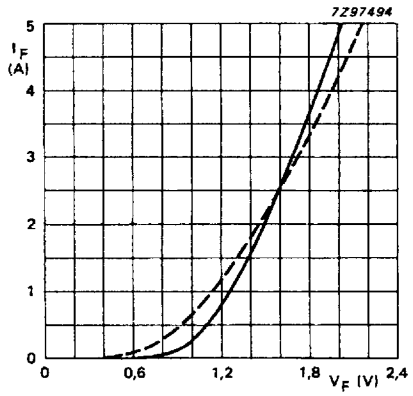


Fig. 3 Maximum forward voltage at
—— T_j = 25 °C; ----- T_j = 175 °C.

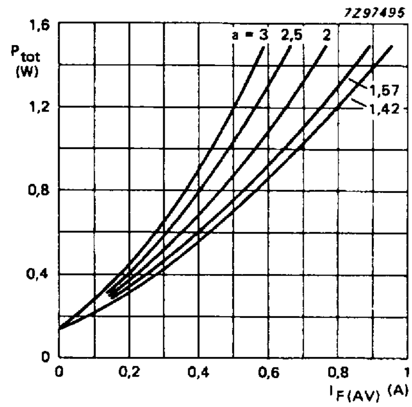


Fig. 4 Maximum steady state power dissipation (forward plus leakage current) versus average forward current.

a $= I_{F(RMS)}/I_{F(AV)}$;
$V_R = V_{RWMmax}$, δ = 0,5.

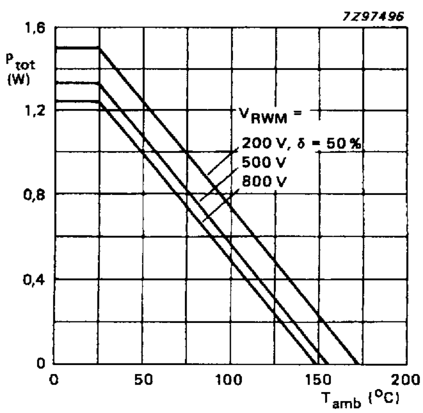


Fig. 5 Maximum steady state power dissipation (forward plus leakage current) versus ambient temperature.

a $= I_{F(RMS)}/I_{F(AV)}$;
$V_R = V_{RWMmax}$, δ = 0,5.

* Measured under pulse conditions to avoid excessive dissipation.

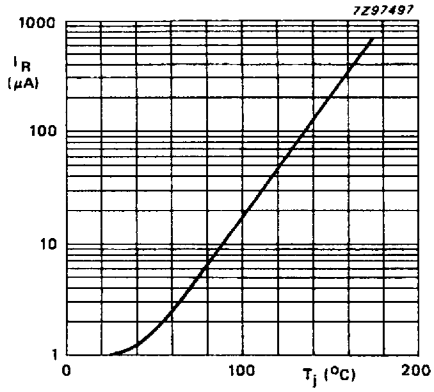


Fig. 6 Maximum reverse current versus junction temperature; $V_R = V_{RWMmax}$.

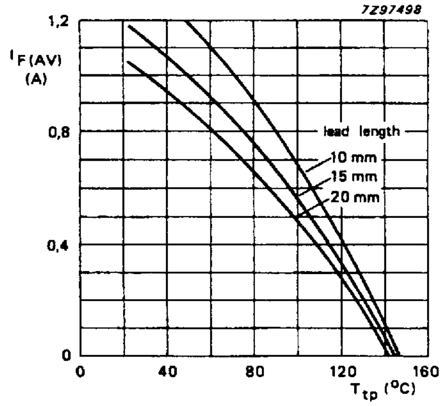


Fig. 7 Maximum average forward current vs. tie-point temperature; the curves include losses due to reverse leakage.
$V_R = V_{RWMmax}$; a = 1,57.