Rectifiers | 1N4001ID to 1N4007ID

FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Available in ammo-pack.

DESCRIPTION

Cavity free cylindrical glass package through Implotec™(1) technology.

This package is hermetically sealed and fatigue free as coefficients of expansion of all used parts are matched.

(1) Implotec is a trademark of Philips.

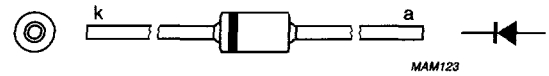


Fig.1 Simplified outline (SOD81) and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage				
	1N4001ID		–	50	V
	1N4002ID		–	100	V
	1N4003ID		–	200	V
	1N4004ID		–	400	V
	1N4005ID		–	600	V
	1N4006ID		–	800	V
	1N4007ID		–	1000	V
V_R	continuous reverse voltage				
	1N4001ID		–	50	V
	1N4002ID		–	100	V
	1N4003ID		–	200	V
	1N4004ID		–	400	V
	1N4005ID		–	600	V
	1N4006ID		–	800	V
	1N4007ID		–	1000	V
$I_{F(AV)}$	average forward current	averaged over any 20 ms period; T_{amb} = 75 °C; see Fig.2	–	1.00	A
		averaged over any 20 ms period; T_{amb} = 100 °C; see Fig.2	–	0.75	A
I_{FRM}	repetitive peak forward current		–	10	A
I_{FSM}	non-repetitive peak forward current	half sinewave; 60 Hz	–	20	A
T_{stg}	storage temperature		–65	+175	°C
T_j	junction temperature		–65	+175	°C

ELECTRICAL CHARACTERISTICS

T_j = 25 °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	I_F = 1 A; see see Fig.3	1.1	V
$V_{F(AV)}$	full-cycle average forward voltage	$I_{F(AV)}$ = 1 A	0.8	V
I_R	*reverse current*	$V_R = V_{Rmax}$	10	μA
		$V_R = V_{Rmax}$; T_{amb} = 100 °C	50	μA
$I_{R(AV)}$	full-cycle average reverse current	$V_R = V_{RRMmax}$; T_{amb} = 75 °C	30	μA

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}tp}$	thermal resistance from junction to tie-point	lead length = 10 mm	60	K/W
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	120	K/W

Note

1. Device mounted on epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper ≥40 μm, see Fig.4. For more information please refer to the *"General Part of Handbook SC01"*.

GRAPHICAL DATA

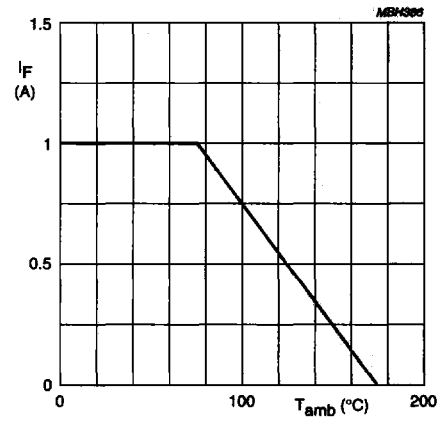
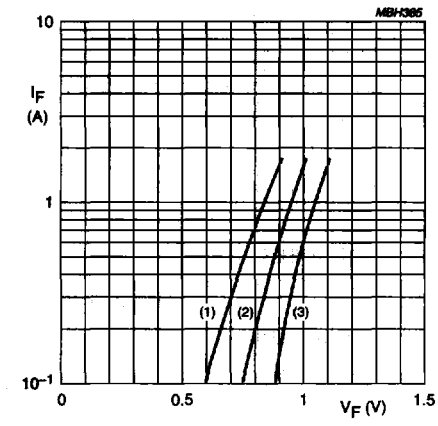
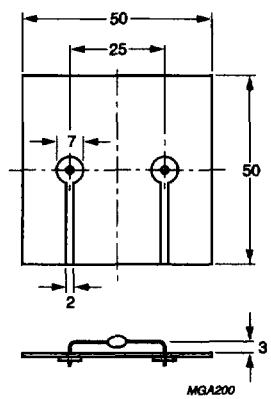


Fig.2 Maximum forward current as a function of ambient temperature.



(1) T_{amb} = 100 °C.
(2) T_{amb} = 20 °C.
(3) T_{amb} = −50 °C.

Fig.3 Forward current as a function of forward voltage; typical values.



Dimensions in mm.

Fig.4 Device mounted on a printed-circuit board.