

Fast soft-recovery controlled avalanche rectifiers

BYV96 series

FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Guaranteed avalanche energy absorption capability
- Available in ammo-pack.

DESCRIPTION

Rugged glass package, using a high temperature alloyed construction. This package is hermetically sealed and fatigue free as coefficients of expansion of all used parts are matched.

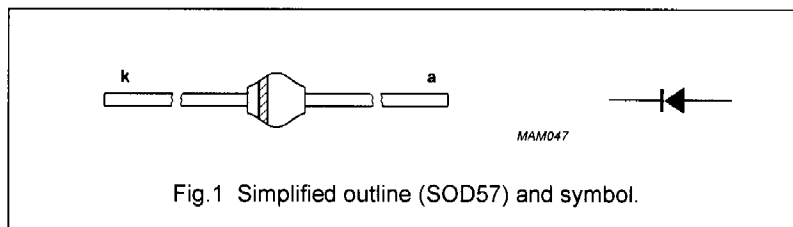
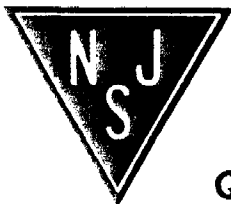


Fig. 1 Simplified outline (SOD57) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage BYV96D BYV96E		–	800	V
			–	1000	V
V _R	continuous reverse voltage BYV96D BYV96E		–	800	V
			–	1000	V
I _{F(AV)}	average forward current	T _{tp} = 55 °C; lead length = 10 mm see Fig 2; averaged over any 20 ms period; see also Fig 6	–	1.5	A
		T _{amb} = 55 °C; PCB mounting (see Fig. 11); see Fig 3; averaged over any 20 ms period; see also Fig 6	–	0.8	A
I _{FRM}	repetitive peak forward current	T _{tp} = 55 °C; see Fig 4	–	17	A
		T _{amb} = 55 °C; see Fig 5	–	9	A
I _{FSM}	non-repetitive peak forward current	t = 10 ms half sine wave; T _j = T _{j max} prior to surge; V _R = V _{RRMmax}	–	35	A
E _{RSM}	non-repetitive peak reverse avalanche energy	L = 120 mH; T _j = T _{j max} prior to surge; inductive load switched off	–	10	mJ
T _{stg}	storage temperature		–65	+175	°C
T _j	junction temperature	see Fig 7	–65	+175	°C



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ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	forward voltage	$I_F = 3\text{ A}; T_j = T_{j\text{max}}; \text{ see Fig 8}$	–	–	1.35	V
		$I_F = 3\text{ A}; \text{ see Fig 8}$	–	–	1.60	V
$V_{(BR)R}$	reverse avalanche breakdown voltage BYV96D BYV96E	$I_R = 0.1\text{ mA}$	900	–	–	V
			1100	–	–	V
I_R	reverse current	$V_R = V_{RRM\text{max}}; \text{ see Fig 9}$	–	–	1	μA
		$V_R = V_{RRM\text{max}}; T_j = 165\text{ }^\circ\text{C}; \text{ see Fig 9}$	–	–	150	μA
t_{rr}	reverse recovery time	when switched from $I_F = 0.5\text{ A}$ to $I_R = 1\text{ A}$; measured at $I_R = 0.25\text{ A}$; see Fig 12	–	–	300	ns
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0\text{ V}; \text{ see Fig 10}$	–	40	–	pF
$\left \frac{dI_R}{dt} \right $	maximum slope of reverse recovery current	when switched from $I_F = 1\text{ A}$ to $V_R \geq 30\text{ V}$ and $dI_F/dt = -1\text{ A}/\mu\text{s}$; see Fig. 13	–	–	6	$\text{A}/\mu\text{s}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-tp}}$	thermal resistance from junction to tie-point	lead length = 10 mm	46	K/W
$R_{th\ j\text{-a}}$	thermal resistance from junction to ambient	note 1	100	K/W

GRAPHICAL DATA

