

Controlled avalanche rectifiers

BYW54 to BYW56

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.

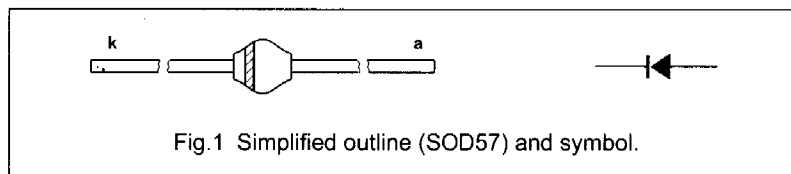


Fig. 1 Simplified outline (SOD57) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage				
	BYW54		–	600	V
	BYW55		–	800	V
V _{RWM}	crest working reverse voltage				
	BYW54		–	600	V
	BYW55		–	800	V
V _R	continuous reverse voltage				
	BYW54		–	600	V
	BYW55		–	800	V
I _{F(AV)}	average forward current	T _{tp} = 45 °C; lead length = 10 mm; averaged over any 20 ms period; see Figs 2 and 4	–	2.0	A
		T _{amb} = 80 °C; PCB mounting (see Fig.9); averaged over any 20 ms period; see Figs 3 and 4	–	0.8	A
I _{FSM}	non-repetitive peak forward current	t = 10 ms half sinewave	–	50	A
E _{RSM}	non-repetitive peak reverse avalanche energy	L = 120 mH; T _j = T _{j max} prior to surge; inductive load switched off	–	20	mJ
T _{stg}	storage temperature		–65	+175	°C
T _j	junction temperature	see Fig.5	–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	$I_F = 1\text{ A}$; $T_j = T_{j\text{max}}$; see Fig.6	–	–	0.8	V
		$I_F = 1\text{ A}$; see Fig.6	–	–	1.0	V
$V_{(BR)R}$	reverse avalanche breakdown voltage	$I_R = 0.1\text{ mA}$	650	–	–	V
			900	–	–	V
			1100	–	–	V
I_R	reverse current	$V_R = V_{RRM\text{max}}$; see Fig.7	–	–	1	μA
		$V_R = V_{RRM\text{max}}$; $T_j = 165\text{ }^\circ\text{C}$; see Fig.7	–	–	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.10	–	3	–	μs
C_d	diode capacitance	$V_R = 0\text{ V}$; $f = 1\text{ MHz}$; see Fig.8	–	50	–	pF

THERMAL CHARACTERISTICS

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