

**Ultra fast low-loss
controlled avalanche rectifiers**

BYD73 series

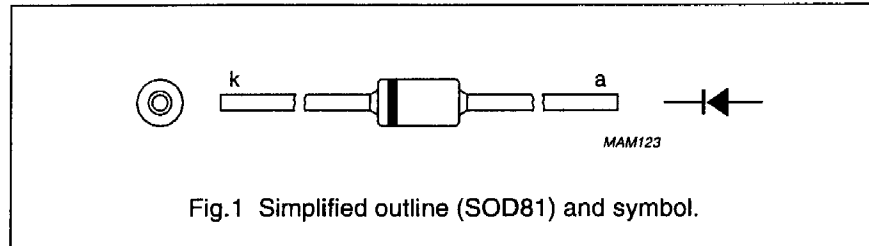
FEATURES

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

DESCRIPTION

Cavity free cylindrical glass SOD81 package through Implotec™(1) technology. This package is

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



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage				
	BYD73A		-	50	V
	BYD73B		-	100	V
	BYD73C		-	150	V
	BYD73D		-	200	V
	BYD73E		-	250	V
	BYD73F		-	300	V
	BYD73G		-	400	V
V _R	continuous reverse voltage				
	BYD73A		-	50	V
	BYD73B		-	100	V
	BYD73C		-	150	V
	BYD73D		-	200	V
	BYD73E		-	250	V
	BYD73F		-	300	V
	BYD73G		-	400	V
I _{F(AV)}	average forward current	T _{tp} = 55 °C; lead length = 10 mm; see Figs 2 and 3; averaged over any 20 ms period; see also Figs 10 and 11			
	BYD73A to D		-	1.75	A
	BYD73E to G		-	1.70	A
I _{F(AV)}	average forward current	T _{amb} = 60 °C; PCB mounting (see Fig.16); see Figs 4 and 5; averaged over any 20 ms period; see also Figs 10 and 11			
	BYD73A to D		-	1.00	A
	BYD73E to G		-	0.95	A

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SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I _{FRM}	repetitive peak forward current	T _{tp} = 55 °C; see Figs 6 and 7	-	14	A
	BYD73A to D			15	A
I _{FRM}	repetitive peak forward current	T _{amb} = 60 °C; see Figs 8 and 9	-	8.5	A
	BYD73A to D			9.5	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}	-	25	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		-65	+175	°C

ELECTRICAL CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT				
V _F	forward voltage	I _F = 1 A; T _j = T _{j max} ; see Figs 12 and 13	-	-	0.75	V				
	BYD73A to D				0.83	V				
V _F	forward voltage	I _F = 1 A; see Figs 12 and 13	-	-	0.98	V				
	BYD73A to D				1.05	V				
V _{(BR)R}	reverse avalanche breakdown voltage	I _R = 0.1 mA								
	BYD73A						55	-	-	V
	BYD73B						110	-	-	V
	BYD73C						165	-	-	V
	BYD73D						220	-	-	V
	BYD73E						275	-	-	V
	BYD73F						330	-	-	V
I _R	reverse current	V _R = V _{RRMmax} ; see Fig.14	-	-	1	μA				
		V _R = V _{RRMmax} ; T _j = 165 °C; see Fig.14	-	-	100	μA				
t _{rr}	reverse recovery time	when switched from I _F = 0.5 A to I _R = 1 A; measured at I _R = 0.25 A; see Fig.18	-	-	25	ns				
	BYD73A to D				50	ns				
	BYD73E to G									

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SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
C _d	diode capacitance	f = 1 MHz; V _R = 0 V; see Fig.15	-	50	-	pF
	BYD73A to D					
	BYD73E to G		-	40	-	pF
$\left \frac{dI_R}{dt} \right $	maximum slope of reverse recovery current	when switched from I _F = 1 A to V _R ≥ 30 V and dI _F /dt = -1 A/μs; see Fig.17	-	-	4	A/μs
	BYD73A to D					
	BYD73E to G		-	-	5	A/μs

THERMAL CHARACTERISTICS

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