

# Silicon Diode

## **BY329-1500**

1500V/6A

# DATASHEET

OEM – Philips

Source: Philips Databook 1999

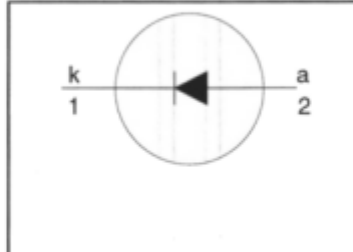
## Damper diode fast, high-voltage

**BY329-1500, BY329-1500S**

### FEATURES

- Low forward volt drop
- Fast switching
- Soft recovery characteristic
- High thermal cycling performance
- Low thermal resistance

### SYMBOL



### QUICK REFERENCE DATA

$V_R = 1500\text{ V}$
$V_F \leq 1.35\text{ V} / 1.5\text{ V}$
$I_{F(\text{peak})} = 6\text{ A}$ (f = 16 kHz)
$I_{F(\text{peak})} = 6\text{ A}$ (f = 70 kHz)
$I_{FSM} \leq 75\text{ A}$
$t_{tr} \leq 230\text{ ns} / 160\text{ ns}$

### GENERAL DESCRIPTION

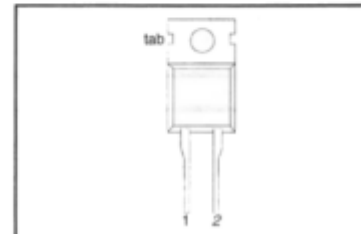
Glass-passivated double diffused rectifier diode featuring low forward voltage drop, fast reverse recovery and soft recovery characteristic. The device is intended for use in TV receivers and PC monitors.

The BY329 series is supplied in the conventional leaded SOD59 (TO220AC) package.

### PINNING

PIN	DESCRIPTION
1	cathode
2	anode
tab	cathode

### SOD59 (TO220AC)



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{RSM}$	Peak non-repetitive peak reverse voltage		-	1500	V
$V_{RRM}$	Peak repetitive reverse voltage		-	1500	V
$V_{RWM}$	Crest working reverse voltage		-	1300	V
$I_{F(\text{peak})}$	Peak working forward current	f = 16 kHz	-	-1500	A
		f = 70 kHz	-	-	A
$I_{FRM}$	Peak repetitive forward current	t = 25 $\mu$ s; $\delta$ = 0.5; $T_{mb} \leq 123\text{ }^\circ\text{C}$	-	14	A
$I_{F(\text{RMS})}$	RMS forward current		-	11	A
$I_{FSM}$	Peak non-repetitive forward current	t = 10 ms sinusoidal; $T_j = 150\text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RWM(\text{max})}$	-	75	A
$T_{stg}$	Storage temperature		-40	150	$^\circ\text{C}$
$T_j$	Operating junction temperature		-	150	$^\circ\text{C}$

### THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th(j-mb)}$	Thermal resistance junction to mounting base		-	-	2.0	K/W
$R_{th(j-a)}$	Thermal resistance junction to ambient	in free air	-	60	-	K/W

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### STATIC CHARACTERISTICS

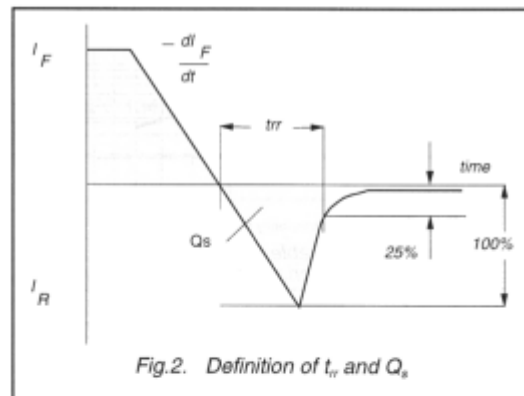
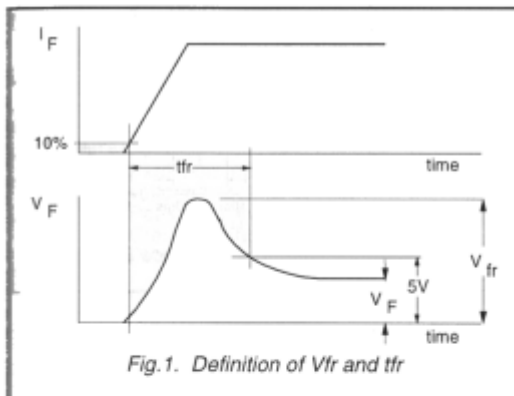
T = 25 °C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	TYP.		MAX.		UNIT
			1500	1500S	1500	1500S	
$V_F$	Forward voltage	$I_F = 6.5 \text{ A}$ $I_F = 6.5 \text{ A}; T_J = 125 \text{ °C}$	1.1	1.3	1.45	1.6	V
$I_R$	Reverse current	$V_R = 1300 \text{ V}$ $V_R = 1300 \text{ V}; T_J = 125 \text{ °C}$	-	250	-	250	$\mu\text{A}$
			-	1	-	1	mA

### DYNAMIC CHARACTERISTICS

T = 25 °C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	TYP.		MAX.		UNIT
			1500	1500S	1500	1500S	
$t_r$	Reverse recovery time	$I_F = 1 \text{ A}; V_R \geq 30 \text{ V};$ $di_F/dt = 50 \text{ A}/\mu\text{s}$	0.18	0.13	0.23	0.16	$\mu\text{s}$
$Q_s$	Reverse recovery charge	$I_F = 2 \text{ A}; -di_F/dt = 20 \text{ A}/\mu\text{s}$	1.6	0.7	2.0	0.95	$\mu\text{C}$
$V_{FR}$	Peak forward recovery voltage	$I_F = 6.5 \text{ A}; di_F/dt = 50 \text{ A}/\mu\text{s}$	17	23	30	40	V
$t_f$	Forward recovery time	$I_F = 6.5 \text{ A}; di_F/dt = 50 \text{ A}/\mu\text{s}$	210	220	300	320	ns



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