

Silicon Diode

**BYW29E-200**

200V/8A

**DATASHEET**

OEM – Philips

Source: Philips Databook 1999

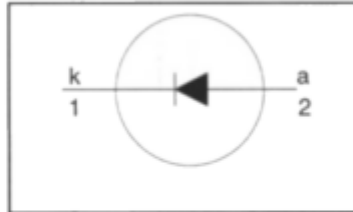
## Rectifier diodes ultrafast, rugged

## BYW29E series

### FEATURES

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

### SYMBOL



### QUICK REFERENCE DATA

$$V_R = 150 \text{ V} / 200 \text{ V}$$

$$V_F \leq 0.895 \text{ V}$$

$$I_{F(AV)} = 8 \text{ A}$$

$$I_{RRM} \leq 0.2 \text{ A}$$

$$t_r \leq 25 \text{ ns}$$

### GENERAL DESCRIPTION

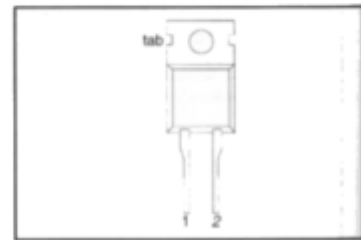
Ultra-fast, epitaxial rectifier diodes intended for use as output rectifiers in high frequency switched mode power supplies.

The BYW29E 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 in accordance with the Absolute Maximum System (IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				BYW29E		
$V_{RRM}$	Peak repetitive reverse voltage		-	-150	-200	V
$V_{RWM}$	Working peak reverse voltage		-	150	200	V
$V_R$	Continuous reverse voltage		-	150	200	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 128 \text{ }^\circ\text{C}$	-	8		A
$I_{FRM}$	Repetitive peak forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 128 \text{ }^\circ\text{C}$	-	16		A
$I_{FSM}$	Non-repetitive peak forward current	$t = 10 \text{ ms}$	-	80		A
		$t = 8.3 \text{ ms}$	-	88		A
$I_{RRM}$	Peak repetitive reverse surge current	sinusoidal; with reapplied $V_{RRM(max)}$ $t_p = 2 \text{ } \mu\text{s}$ ; $\delta = 0.001$	-	0.2		A
$I_{RSM}$	Peak non-repetitive reverse surge current	$t_p = 100 \text{ } \mu\text{s}$	-	0.2		A
$T_j$	Operating junction temperature		-	150		$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40	150		$^\circ\text{C}$

### ESD LIMITING VALUE

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_C$	Electrostatic discharge capacitor voltage	Human body model; $C = 250 \text{ pF}$ ; $R = 1.5 \text{ k}\Omega$	-	8	kV

Rectifier diodes  
ultrafast, rugged

BYW29E series

#### THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{thj-mb}$	Thermal resistance junction to mounting base		-	-	2.7	K/W
$R_{thj-a}$	Thermal resistance junction to ambient	in free air	-	60	-	K/W

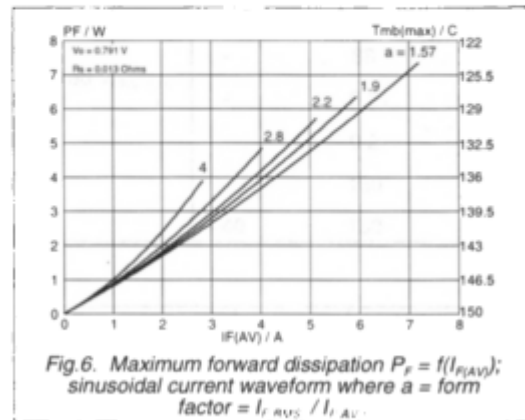
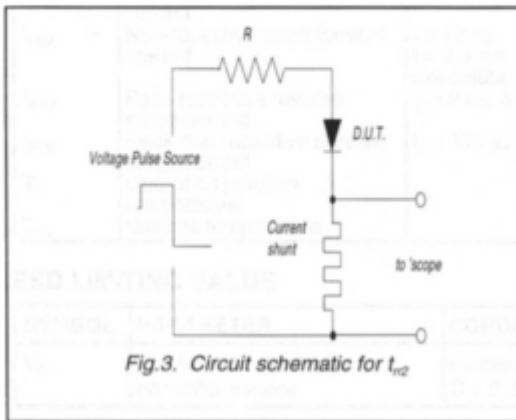
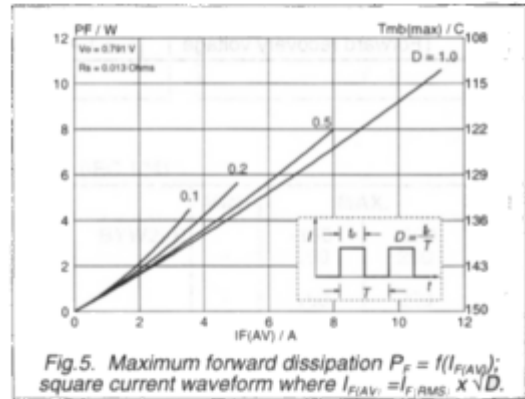
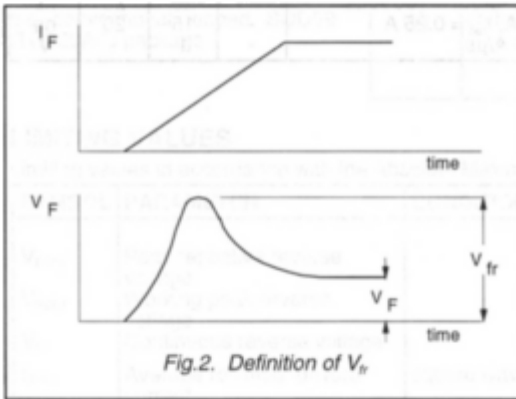
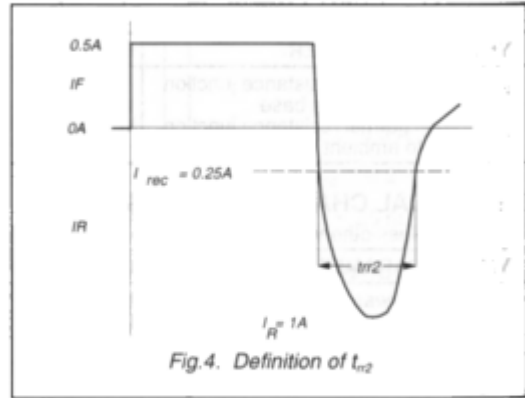
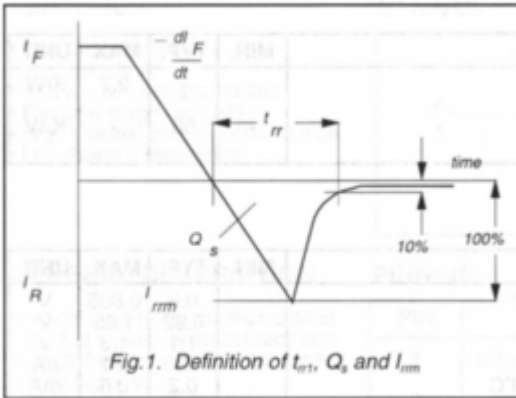
#### ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 8\text{ A}$ ; $T_j = 150\text{ }^\circ\text{C}$	-	0.8	0.895	V
		$I_F = 8\text{ A}$	-	0.92	1.05	V
		$I_F = 20\text{ A}$	-	1.1	1.3	V
$I_R$	Reverse current	$V_R = V_{RWM}$	-	2	10	$\mu\text{A}$
		$V_R = V_{RWM}$ ; $T_j = 100\text{ }^\circ\text{C}$	-	0.2	0.6	$\text{mA}$
$Q_r$	Reverse recovered charge	$I_F = 2\text{ A}$ ; $V_R \geq 30\text{ V}$ ; $-di_F/dt = 20\text{ A}/\mu\text{s}$	-	4	11	nC
$t_{r1}$	Reverse recovery time	$I_F = 1\text{ A}$ ; $V_R \geq 30\text{ V}$ ; $-di_F/dt = 100\text{ A}/\mu\text{s}$	-	20	25	ns
$t_{r2}$	Reverse recovery time	$I_F = 0.5\text{ A}$ to $I_R = 1\text{ A}$ ; $I_{rec} = 0.25\text{ A}$	-	15	20	ns
$V_r$	Forward recovery voltage	$I_F = 1\text{ A}$ ; $di_F/dt = 10\text{ A}/\mu\text{s}$	-	1	-	V

Rectifier diodes  
ultrafast, rugged

BYW29E series



Rectifier diodes  
ultrafast, rugged

BYW29E series

