

DATA SHEET

BYW29E series
Rectifier diodes
ultrafast, rugged

Product specification



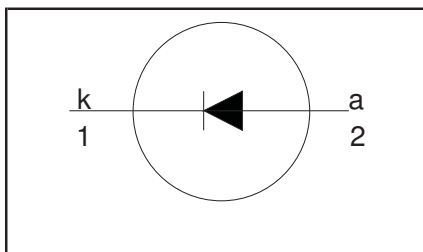
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FEATURES

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

SYMBOL



QUICK REFERENCE DATA

$$V_R = 100V / 150V / 200V$$

$$V_F \leq 0.895V$$

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

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

$$t_{rr} \leq 25ns$$

GENERAL DESCRIPTION

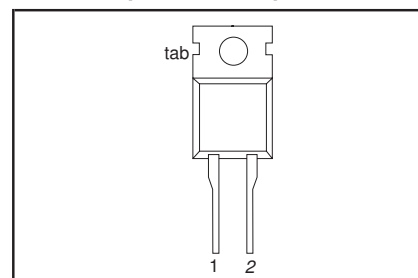
Ultra-fast, epitaxial rectifier diodes intended for use as output rectifiers in high frequency switched mode power supplies.

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

ESD LIMITING VALUE

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

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THERMAL RESISTANCES

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

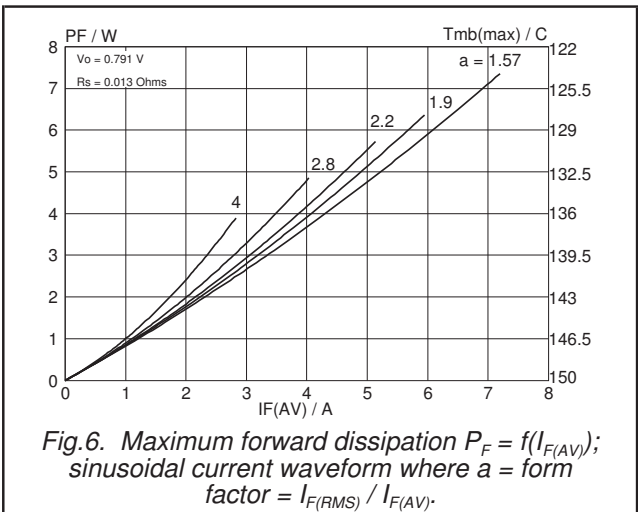
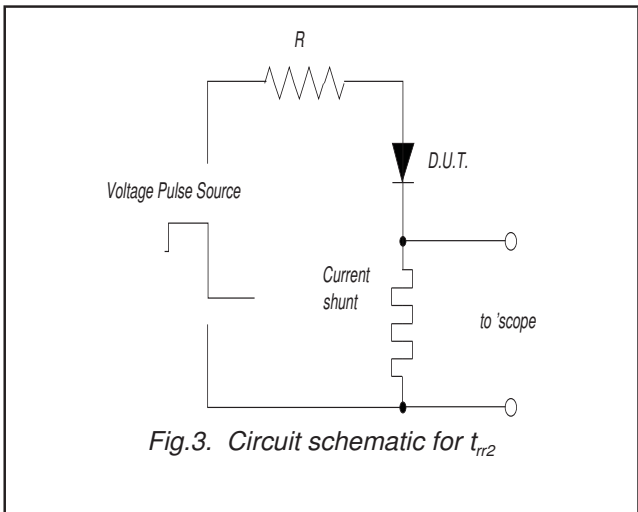
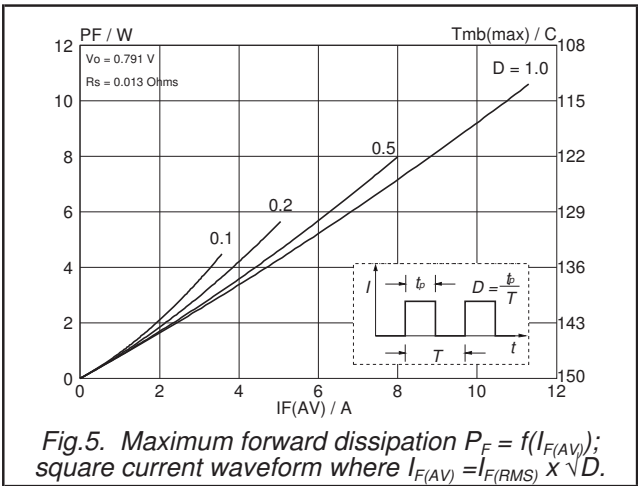
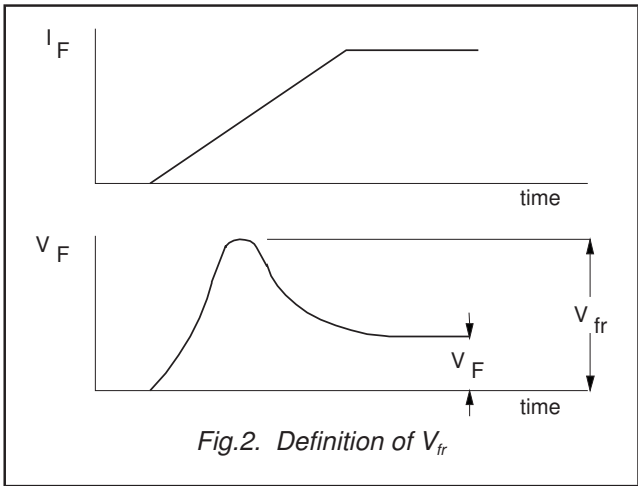
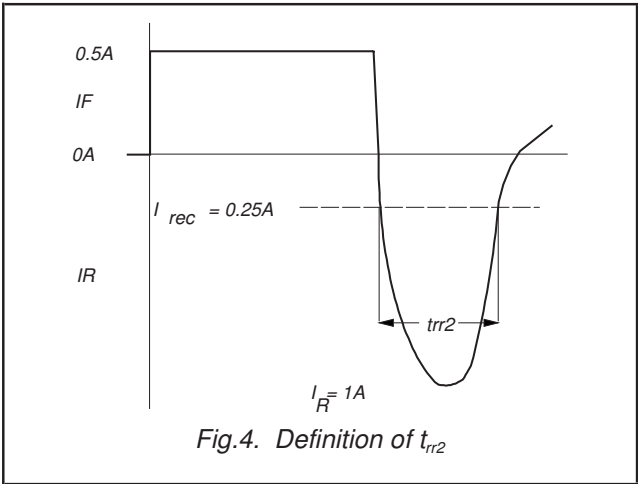
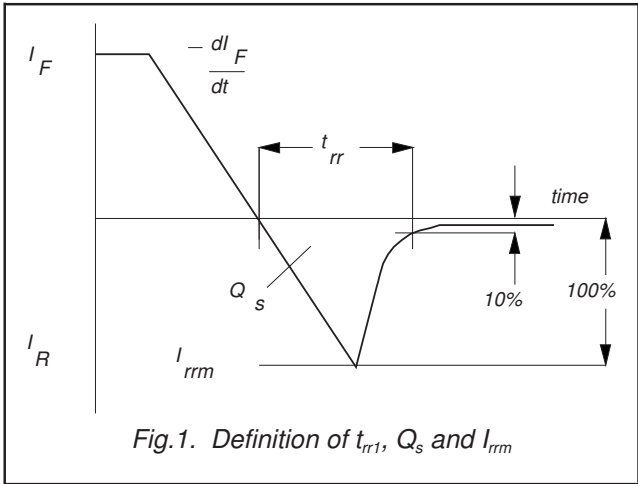
ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	Forward voltage	$I_F = 8\ \text{A}$; $T_j = 150\ ^\circ\text{C}$	-	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	μA
		$V_R = V_{RWM}$; $T_j = 100\ ^\circ\text{C}$	-	0.2	0.6	mA
Q_{rr}	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_{rr1}	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_{rr2}	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_{fr}	Forward recovery voltage	$I_F = 1\ \text{A}$; $di_F/dt = 10\ \text{A}/\mu\text{s}$	-	1	-	V

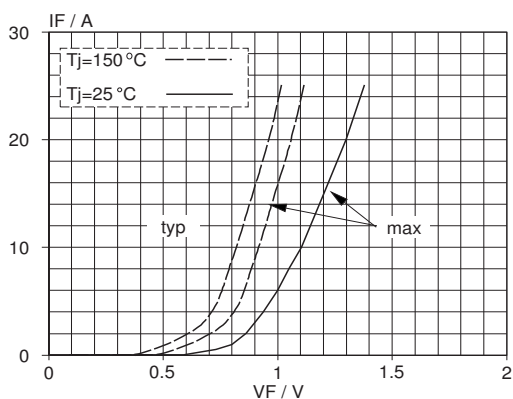
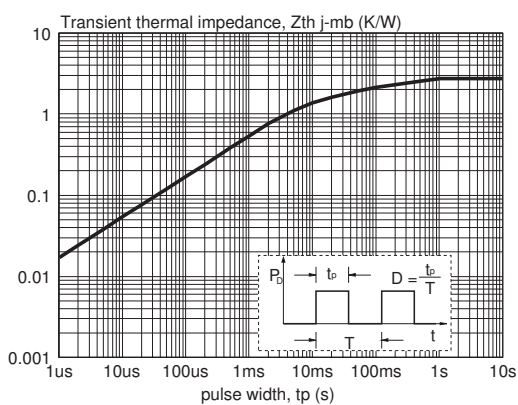
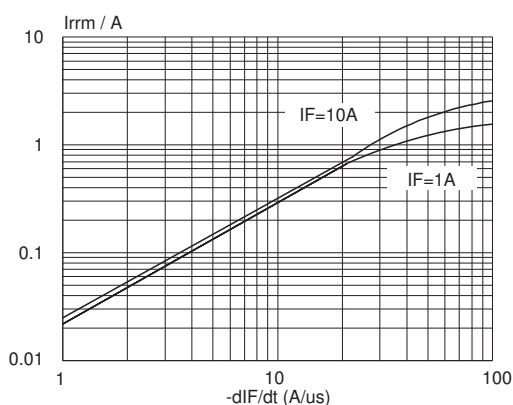
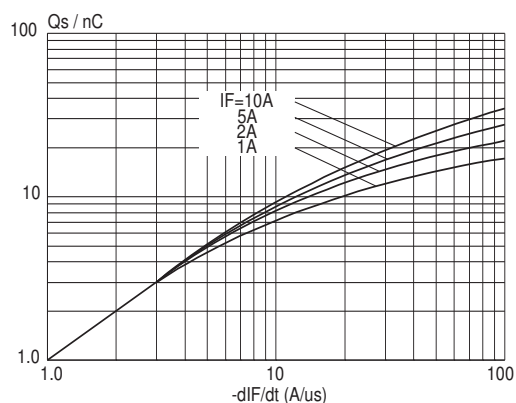
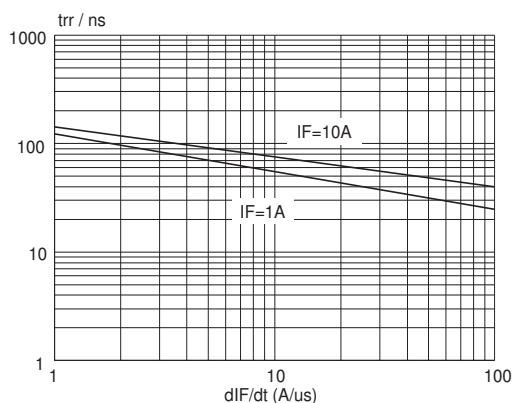
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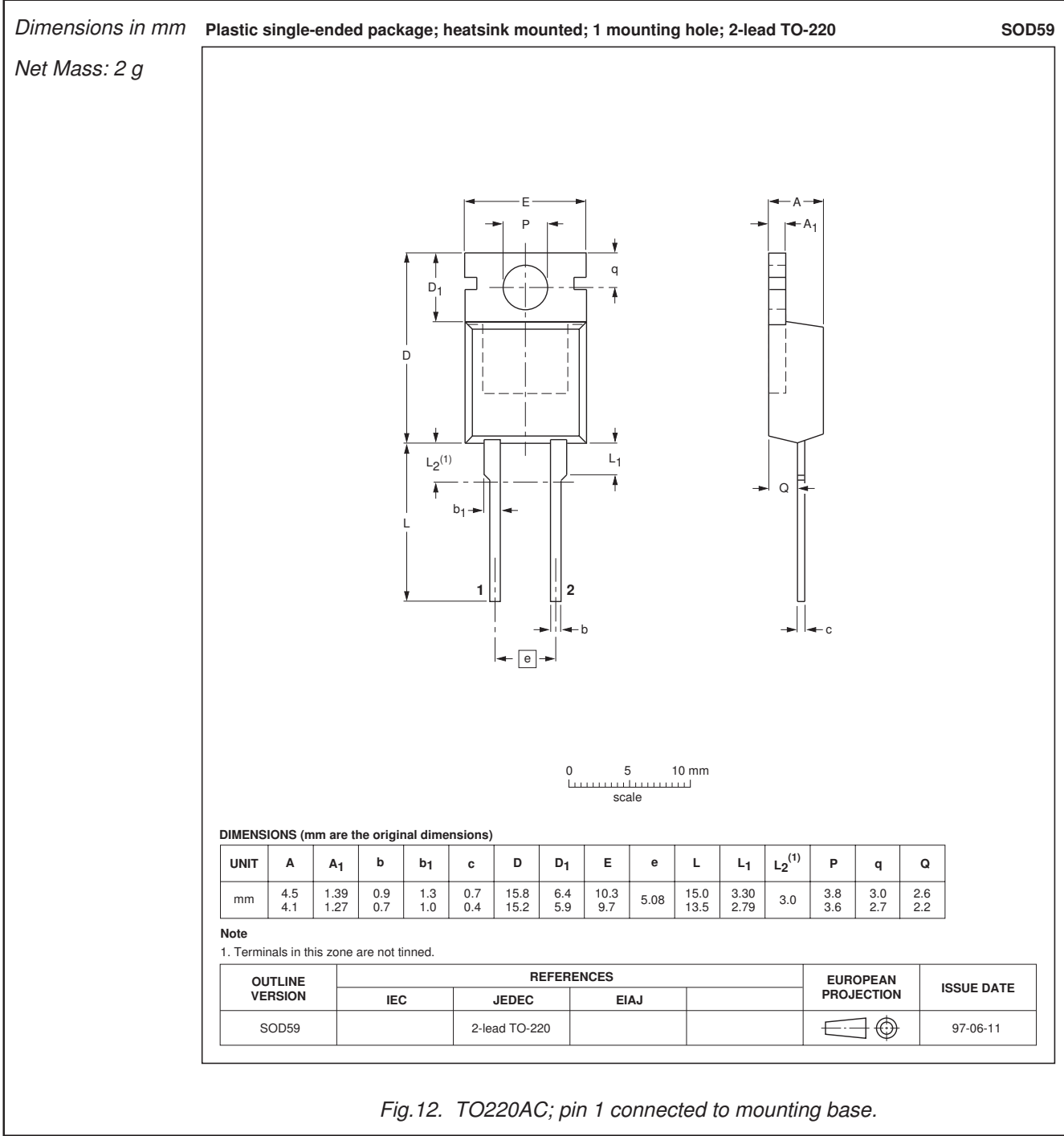


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MECHANICAL DATA



Notes
1. Refer to mounting instructions for TO220 envelopes.
2. Epoxy meets UL94 V0 at 1/8".