



**THE DATASHEET OF  
BYV79E-200,127**



# DATA SHEET

**BYV79E series**  
Rectifier diodes  
ultrafast, rugged

Product specification

September 2018



**WeEn**  
WeEn Semiconductors

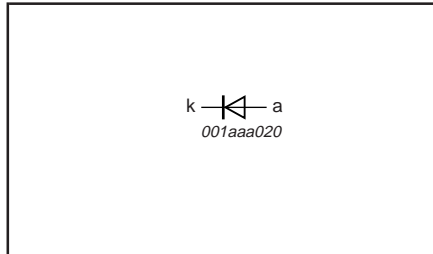
**Rectifier diodes  
ultrafast, rugged**

**BYV79E 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**

$V_R = 150 \text{ V} / 200 \text{ V}$
$V_F \leq 0.9 \text{ V}$
$I_{F(AV)} = 14 \text{ A}$
$I_{RRM} \leq 0.2 \text{ A}$
$t_r \leq 30 \text{ ns}$

**GENERAL DESCRIPTION**

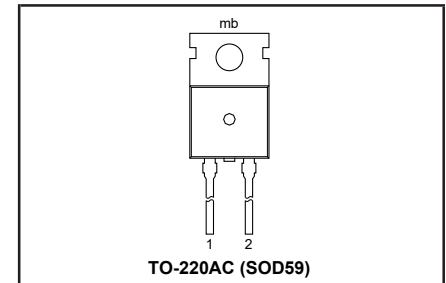
Ultra-fast, epitaxial rectifier diodes intended for use as output rectifiers in high frequency switched mode power supplies.

The BYV79E 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	<b>BYV79E</b> $T_{mb} \leq 145^\circ\text{C}$	-	<b>-150</b>	<b>-200</b>	V
$V_{RWM}$	Crest working reverse voltage		-	150	200	V
$V_R$	Continuous reverse voltage		-	150	200	V
$I_{F(AV)}$	Average forward current <sup>1</sup>	square wave $\delta = 0.5; T_{mb} \leq 120^\circ\text{C}$	-	14		A
$I_{FRM}$	Repetitive peak forward current	$t = 25 \mu\text{s}; \delta = 0.5;$ $T_{mb} \leq 120^\circ\text{C}$	-	28		A
$I_{FSM}$	Non-repetitive peak forward current	$t = 10 \text{ ms}$	-	150		A
		$t = 8.3 \text{ ms}$ sinusoidal; with reapplied $V_{RWM(max)}$	-	160		A
$I_{RRM}$	Repetitive peak reverse current	$t_p = 2 \mu\text{s}; \delta = 0.001$	-	0.2		A
$I_{RSM}$	Non-repetitive peak reverse current	$t_p = 100 \mu\text{s}$	-	0.2		A
$T_{stg}$	Storage temperature		-40	150		$^\circ\text{C}$
$T_j$	Operating junction temperature		-	150		$^\circ\text{C}$

1. Neglecting switching and reverse current losses.

**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

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## BYV79E series

**THERMAL RESISTANCES**

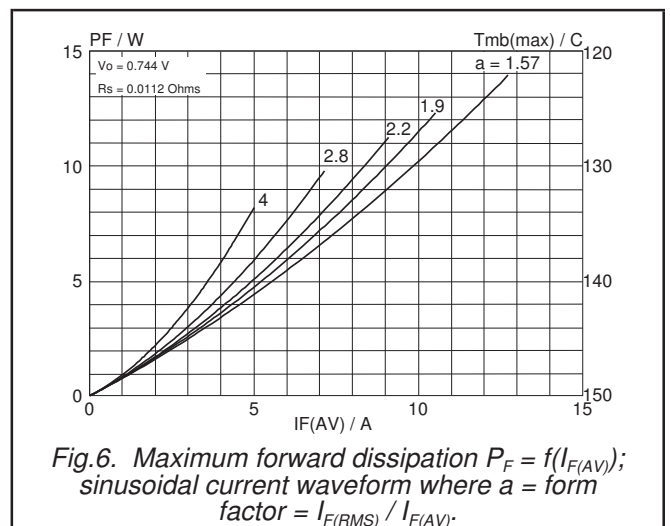
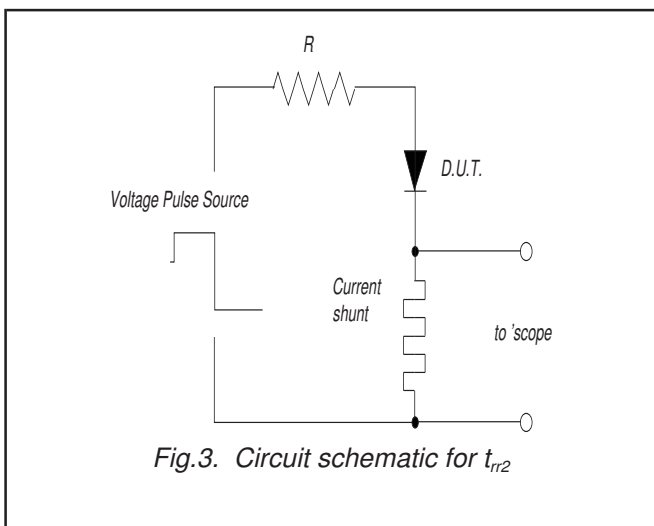
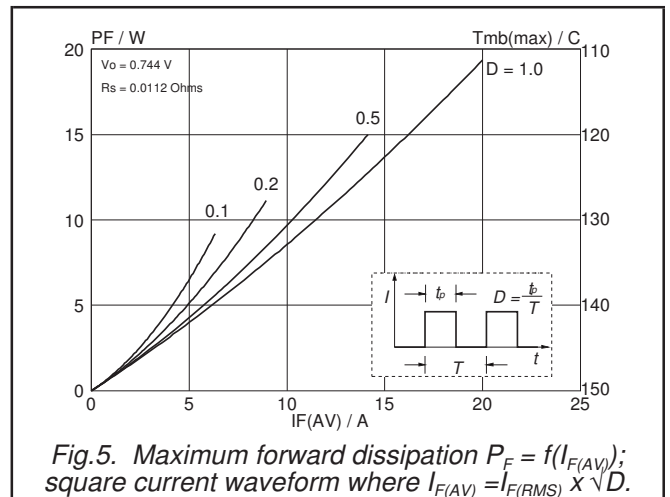
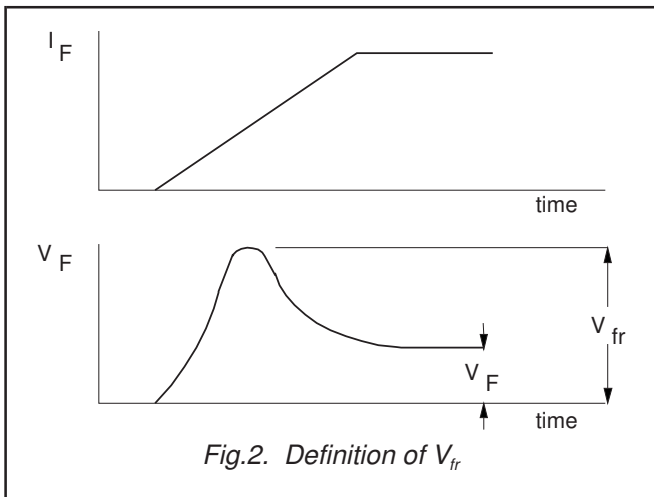
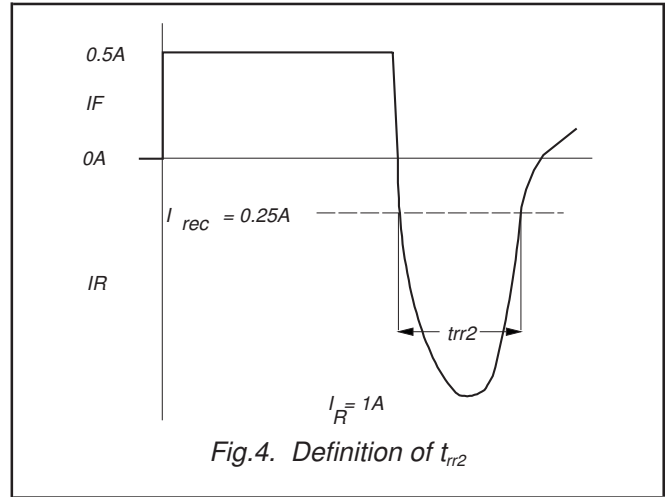
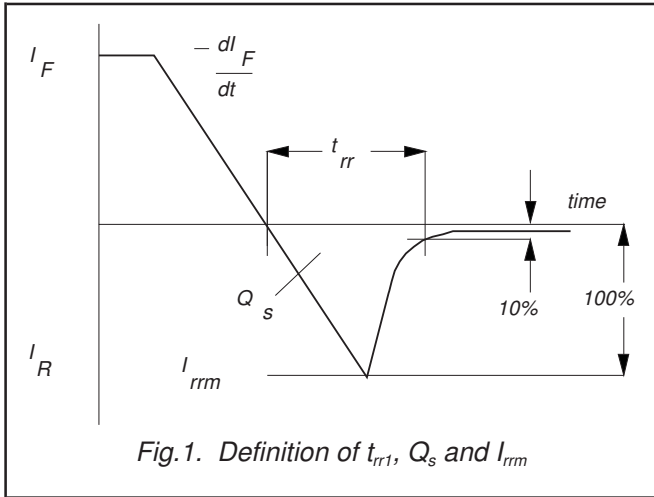
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base		-	-	2	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	in free air	-	60	-	K/W

**STATIC CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 14\text{ A}; T_j = 150\text{ °C}$	-	0.83	0.90	V
		$I_F = 14\text{ A}$	-	0.95	1.05	V
		$I_F = 50\text{ A}$	-	1.2	1.4	V
$I_R$	Reverse current	$V_R = V_{RWM}; T_j = 100\text{ °C}$	-	0.5	1.3	mA
		$V_R = V_{RWM}$	-	5	50	$\mu\text{A}$
$Q_s$	Reverse recovery charge	$I_F = 2\text{ A}; V_R \geq 30\text{ V}; -di_F/dt = 20\text{ A}/\mu\text{s}$	-	6	15	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	30	ns
$t_{rr2}$	Reverse recovery time	$I_F = 0.5\text{ A to } I_R = 1\text{ A}; I_{rec} = 0.25\text{ A}$	-	13	22	ns
$V_{fr}$	Forward recovery voltage	$I_F = 1\text{ A}; di_F/dt = 10\text{ A}/\mu\text{s}$	-	1	-	V

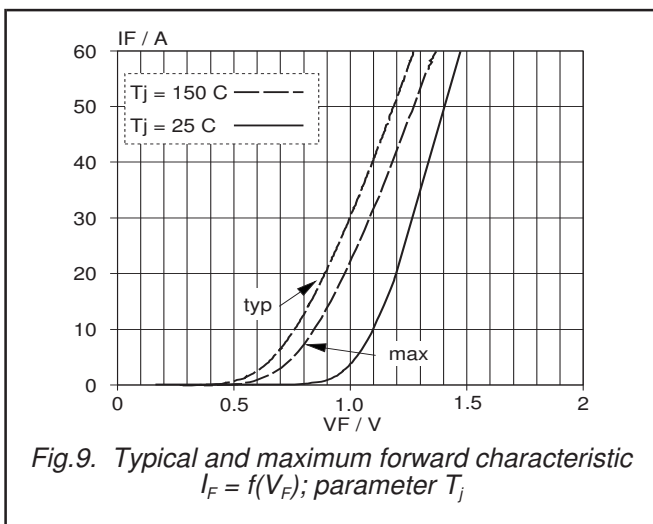
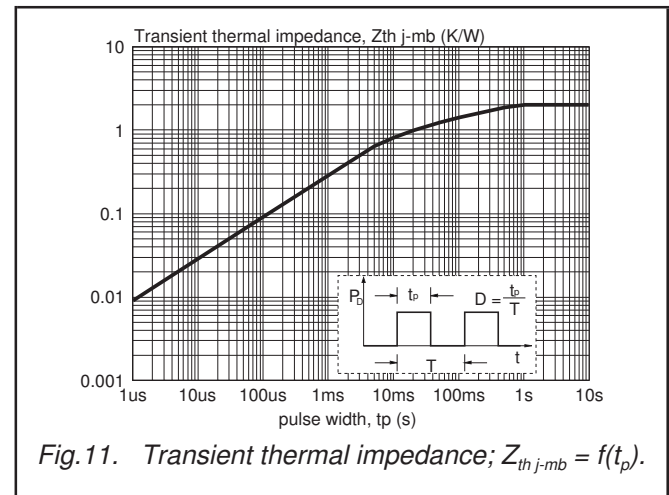
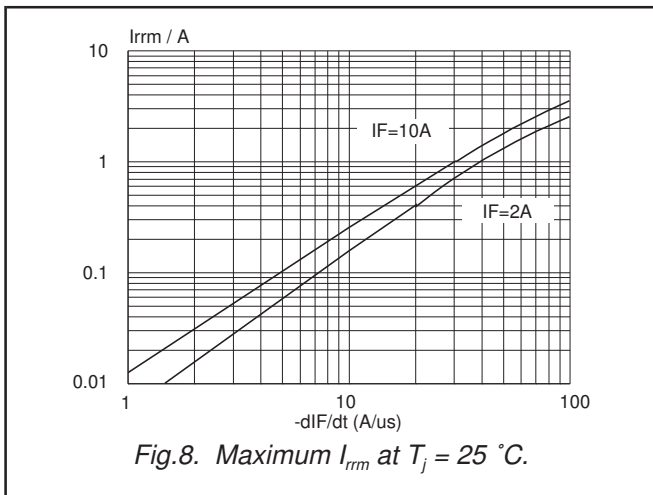
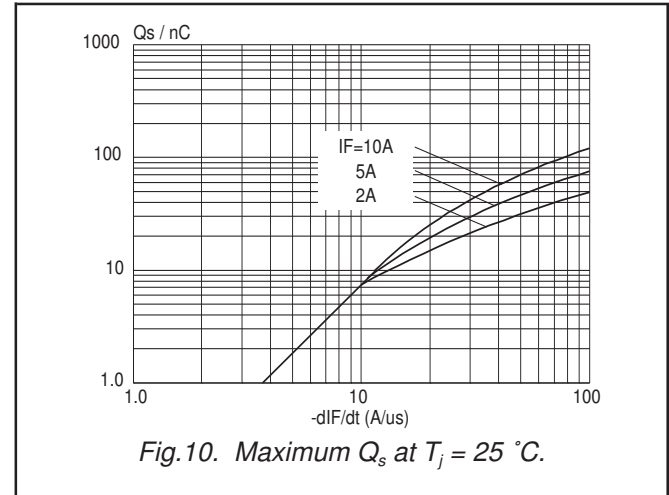
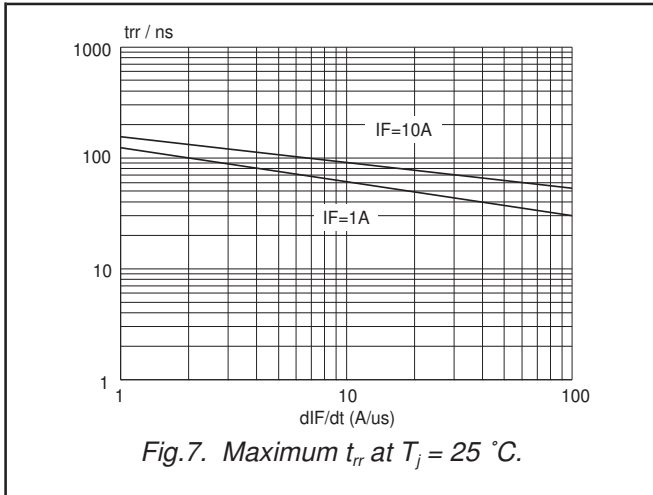
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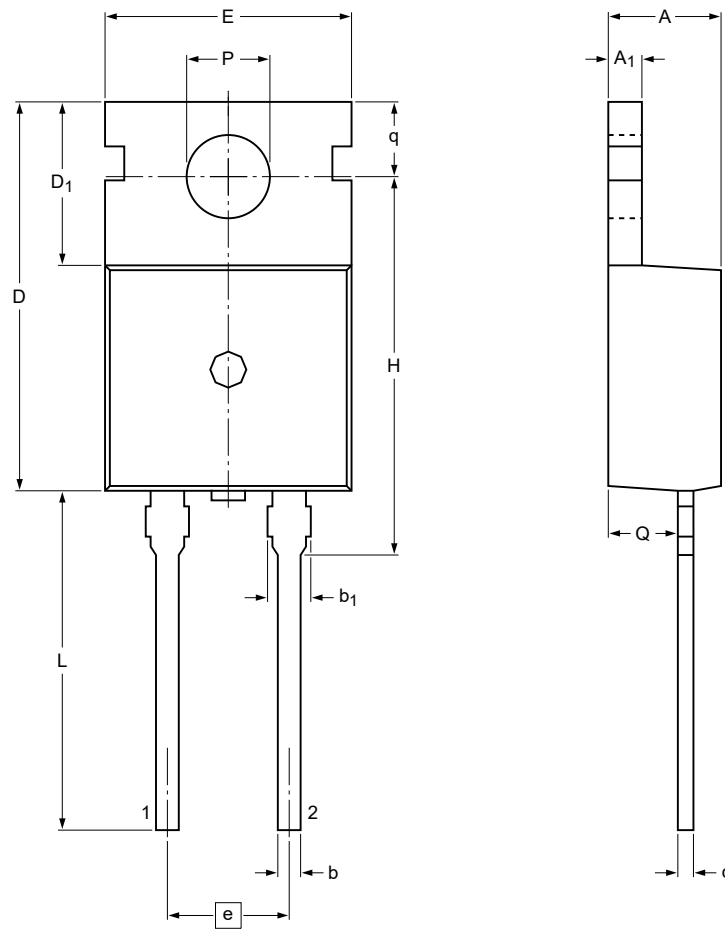
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**MECHANICAL DATA**

Plastic single-ended package; heatsink mounted; 1 mounting hole; 2-lead TO-220AC

SOD59



Dimensions

Unit	A	A <sub>1</sub>	b	b <sub>1</sub> (1)	c	D	D <sub>1</sub>	E	e	H	L	P	Q	q	
mm	max	4.7	1.40	0.95	1.7	0.65	15.8	6.8	10.30	5.08	16.25	15.0	3.80	2.6	2.9
	nom									(REF)					
	min	4.3	1.15	0.70	1.3	0.45	15.6	6.4	9.65	15.70	12.5	3.65	2.2	2.7	

Note

1. Protruded dambar are included in the dimension.

sod059\_po

Outline version	References			European projection	Issue date
	IEC	JEDEC	JEITA		
SOD59	2-lead TO-220AC				09-08-25 12-11-27

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### Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
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Product [short] data sheet	Production	This document contains the product specification.

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