

# DATA SHEET

## **BYT79-500** Rectifier diodes ultrafast

Product specification

March 2019

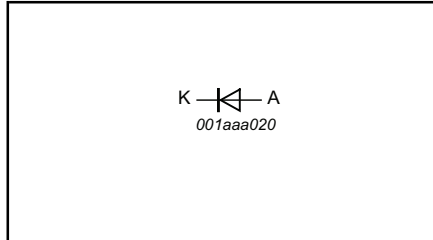
## Rectifier diodes ultrafast

## BYT79-500

### FEATURES

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

### SYMBOL



### QUICK REFERENCE DATA

$V_R = 500 \text{ V}$
$V_F \leq 1.05 \text{ V}$
$I_{F(AV)} = 14 \text{ A}$
$t_{rr} \leq 60 \text{ ns}$

### GENERAL DESCRIPTION

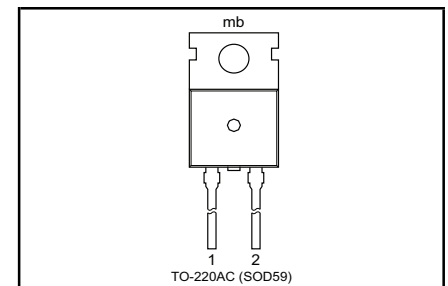
Ultra-fast, epitaxial rectifier diodes intended for use as output rectifiers in high frequency switched mode power supplies.

The BYT79 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	$T_{mb} \leq 147^\circ\text{C}$	-	500	V
$V_R$	Continuous reverse voltage		-	500	V
$I_{F(AV)}$	Average forward current <sup>1</sup>	square wave; $\delta = 0.5$ ; $T_{mb} \leq 117^\circ\text{C}$	-	14	A
$I_{FSM}$	Non-repetitive peak forward current.	$t = 10 \text{ ms}$	-	-	A
		$t = 8.3 \text{ ms}$ sinusoidal; with reapplied $V_{RRM(max)}$	-	130 143	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

<sup>1</sup> Neglecting switching and reverse current losses

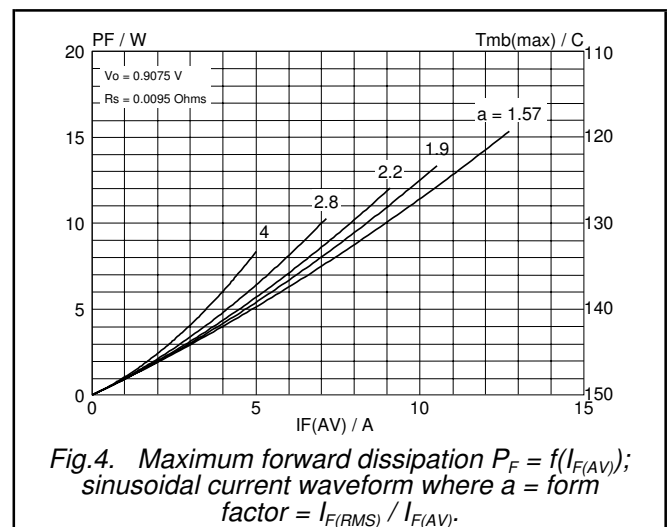
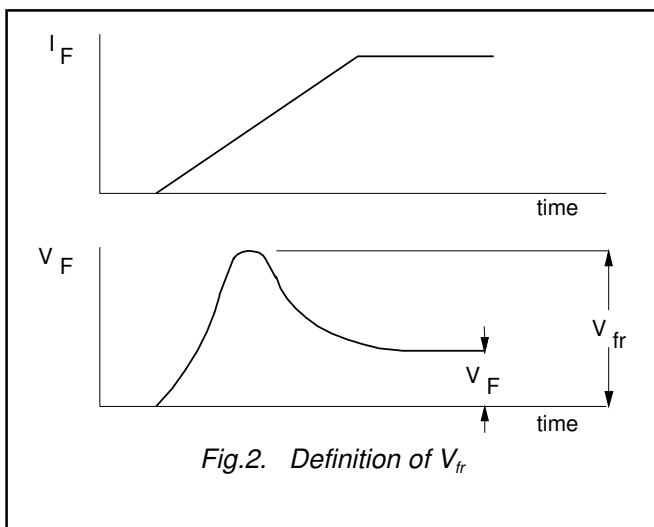
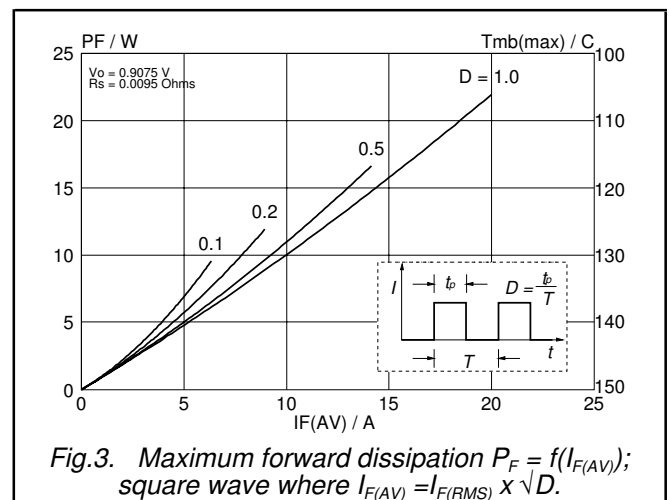
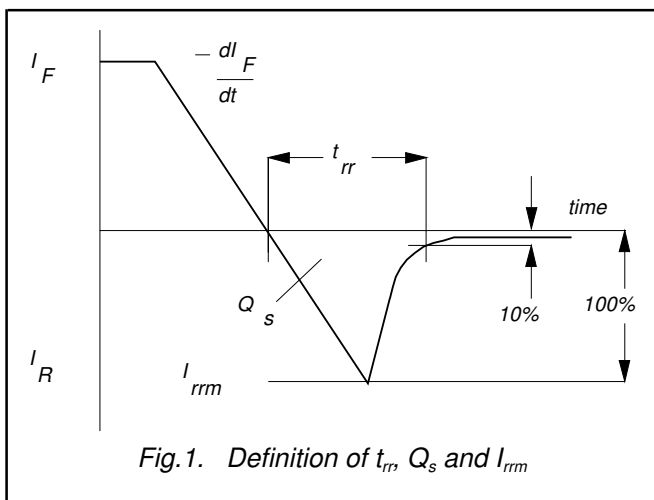
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**ELECTRICAL CHARACTERISTICS**

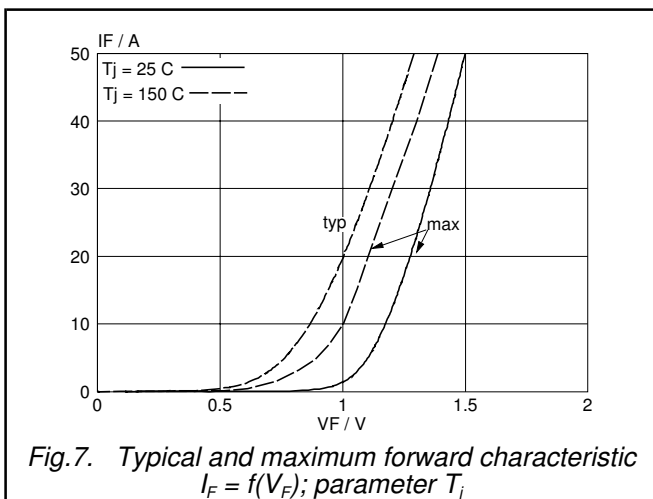
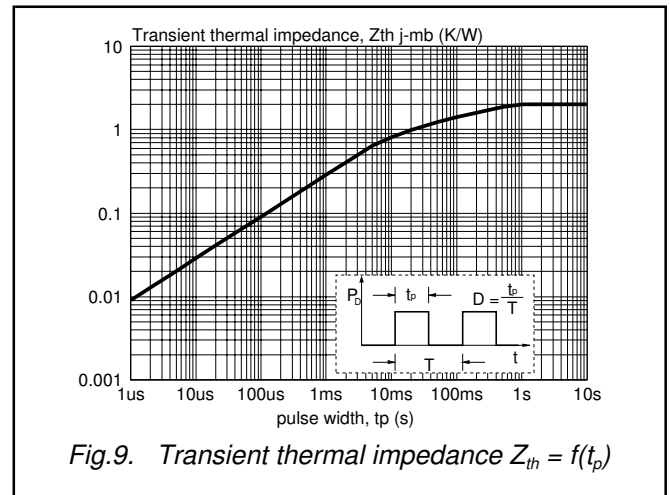
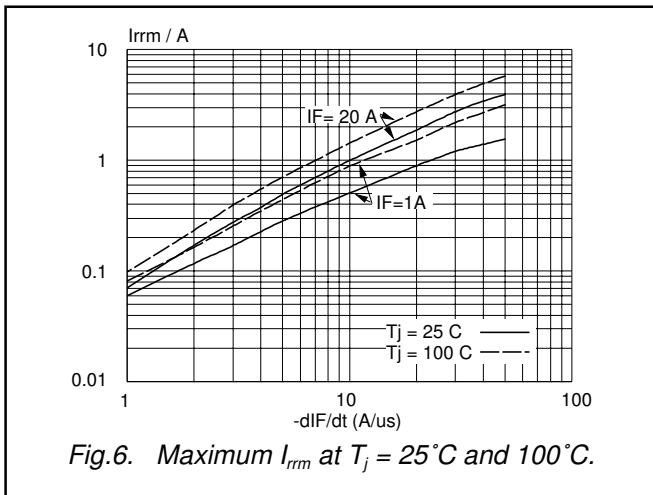
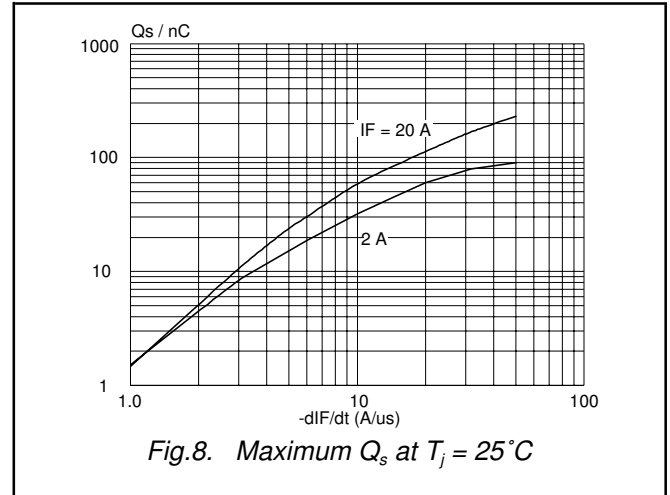
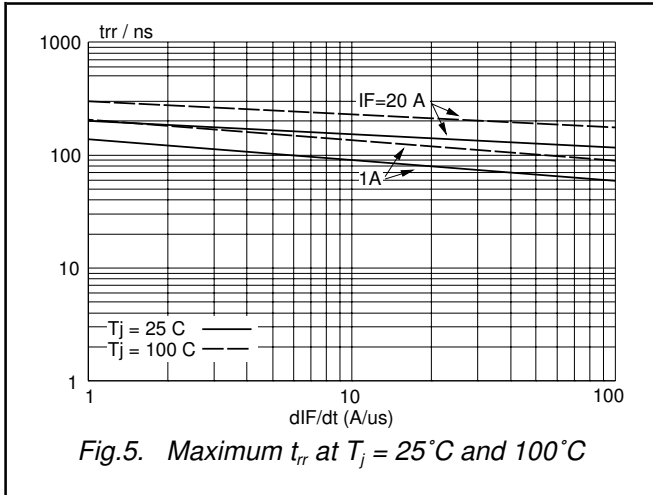
$T_j = 25\text{ }^\circ\text{C}$  unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 15\text{ A}; T_j = 150\text{ }^\circ\text{C}$	-	0.90	1.05	V
		$I_F = 30\text{ A}$	-	1.17	1.38	V
$I_R$	Reverse current	$V_R = V_{RRM}$	-	5.0	50	$\mu\text{A}$
		$V_R = V_{RRM}; T_j = 100\text{ }^\circ\text{C}$	-	0.2	0.8	$\text{mA}$
$Q_s$	Reverse recovery charge	$I_F = 2\text{ A to } V_R \geq 30\text{ V};$ $di_F/dt = 20\text{ A}/\mu\text{s}$	-	50	60	$\text{nC}$
$t_{rr}$	Reverse recovery time	$I_F = 1\text{ A to } V_R \geq 30\text{ V};$ $di_F/dt = 100\text{ A}/\mu\text{s}$	-	50	60	$\text{ns}$
$I_{rrm}$	Peak reverse recovery current	$I_F = 10\text{ A to } V_R \geq 30\text{ V};$ $di_F/dt = 50\text{ A}/\mu\text{s}; T_j = 100\text{ }^\circ\text{C}$	-	4.0	5.2	A
$V_{fr}$	Forward recovery voltage	$I_F = 10\text{ A}; di_F/dt = 10\text{ A}/\mu\text{s}$	-	2.5	-	V



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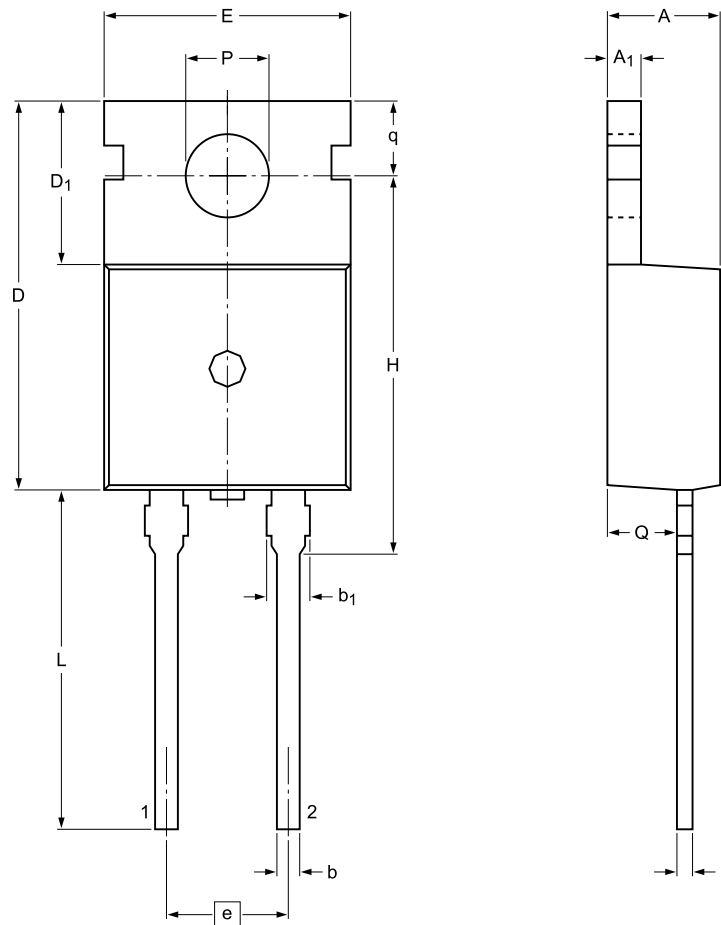
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**MECHANICAL DATA**

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.

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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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