

**Rectifier diodes  
ultrafast**

**BYV79 series**

**GENERAL DESCRIPTION**

Glass passivated high efficiency rectifier diodes in a plastic envelope, featuring low forward voltage drop, ultra-fast recovery times and soft recovery characteristic. They are intended for use in switched mode power supplies and high frequency circuits in general where low conduction and switching losses are essential.

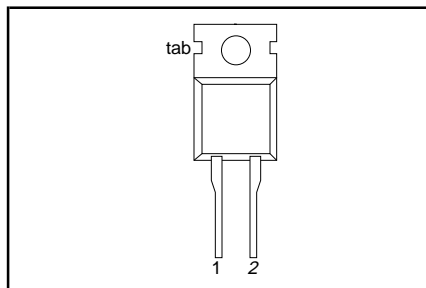
**QUICK REFERENCE DATA**

SYMBOL	PARAMETER	MAX.	MAX.	MAX.	UNIT
$V_{RRM}$	Repetitive peak reverse voltage	<b>100</b> 100	<b>150</b> 150	<b>200</b> 200	V
$V_F$	Forward voltage	0.9	0.9	0.9	V
$I_{F(AV)}$	Forward current	14	14	14	A
$t_{tr}$	Reverse recovery time	30	30	30	ns

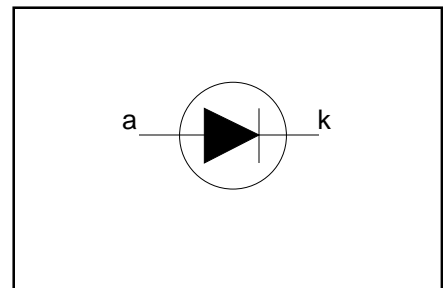
**PINNING - TO220AC**

PIN	DESCRIPTION
1	cathode (k)
2	anode (a)
tab	cathode (k)

**PIN CONFIGURATION**



**SYMBOL**



**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
				-100	-150	-200	
$V_{RRM}$	Repetitive peak reverse voltage		-	100	150	200	V
$V_{RWM}$	Crest working reverse voltage		-	100	150	200	V
$V_R$	Continuous reverse voltage <sup>1</sup>		-	100	150	200	V
$I_{F(AV)}$	Average forward current <sup>2</sup>	square wave; $\delta = 0.5$ ; $T_{mb} \leq 120^\circ\text{C}$	-	14			A
		sinusoidal; $a = 1.57$ ; $T_{mb} \leq 122^\circ\text{C}$	-	12.7			A
$I_{F(RMS)}$	RMS forward current		-	20			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	-	160			A
$I^2t$	$I^2t$ for fusing	$V_{RWM(max)}$ $t = 10\ \text{ms}$	-	112			A <sup>2</sup> s
$T_{stg}$	Storage temperature		-40	150			°C
$T_j$	Operating junction temperature		-	150			°C

1  $T_{mb} \leq 145^\circ\text{C}$  for thermal stability.

2 Neglecting switching and reverse current losses.

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**BYV79 series****THERMAL RESISTANCES**

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

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

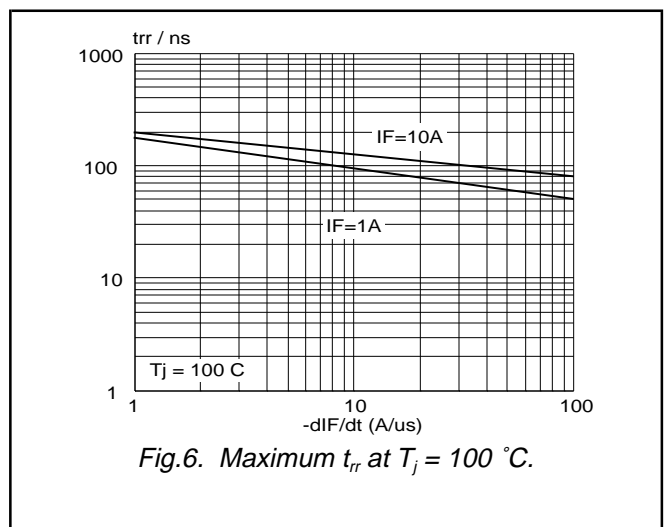
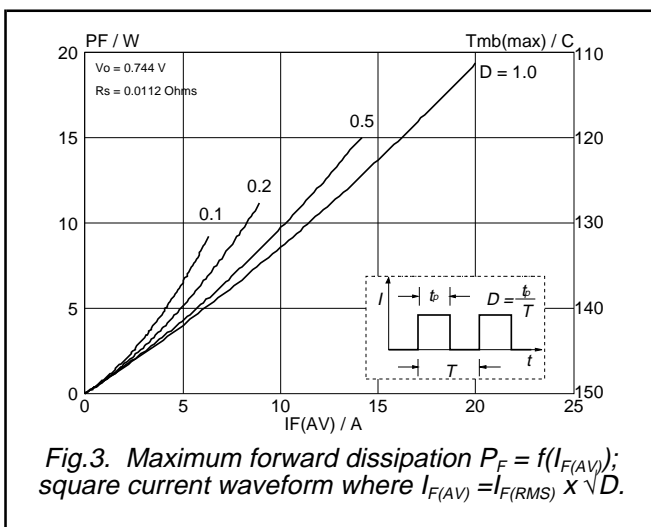
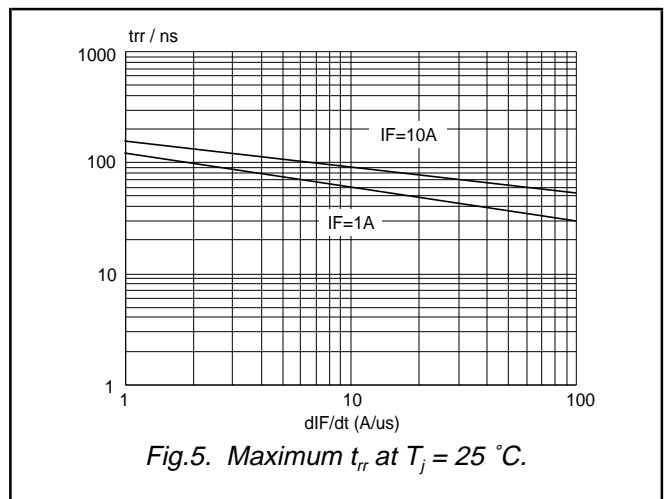
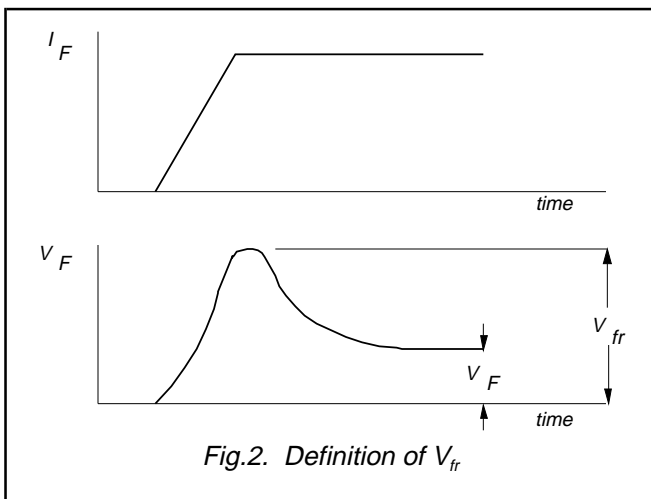
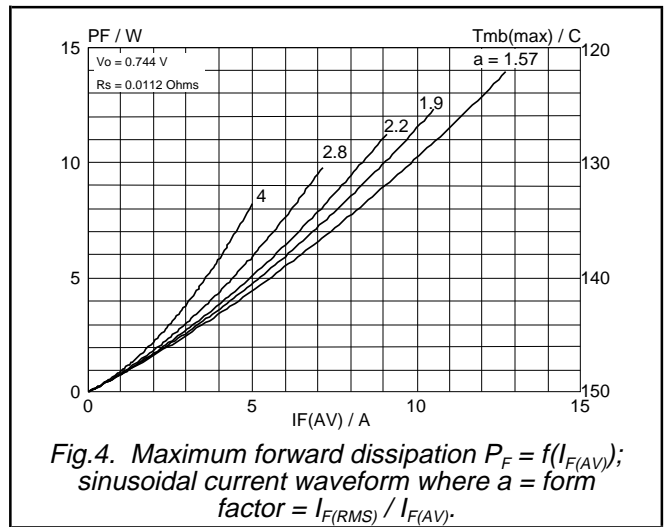
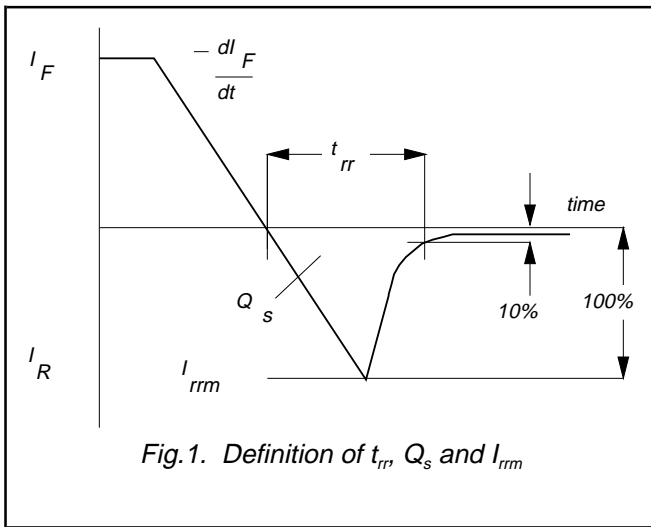
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 14\text{ A}; T_j = 150\text{ °C}$	-	0.83	0.90	V
		$I_F = 14\text{ A}$	-	0.95	1.05	V
		$I_F = 50\text{ A}$	-	1.20	1.30	V
$I_R$	Reverse current	$V_R = V_{RWM}; T_j = 100\text{ °C}$	-	0.5	1.3	mA
		$V_R = V_{RWM}$	-	5	50	$\mu\text{A}$

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$Q_s$	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
$t_{rr}$	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
$I_{rrm}$	Peak reverse recovery current	$I_F = 10\text{ A}; V_R \geq 30\text{ V}; -di_F/dt = 50\text{ A}/\mu\text{s}; T_j = 100\text{ °C}$	-	3	4	A
$V_{fr}$	Forward recovery voltage	$I_F = 10\text{ A}; di_F/dt = 10\text{ A}/\mu\text{s}$	-	1	-	V

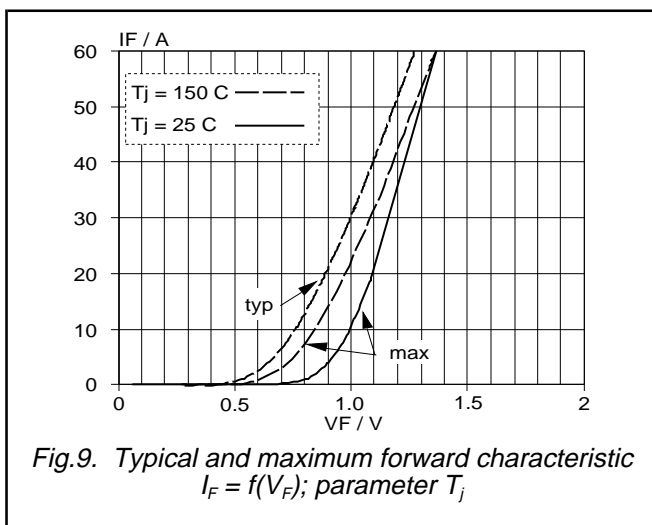
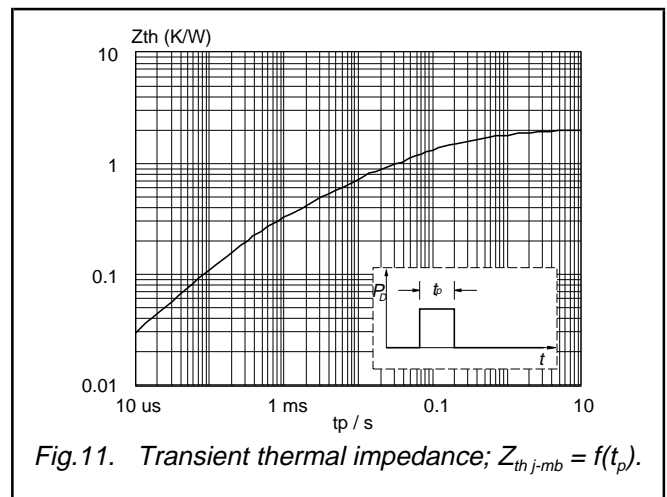
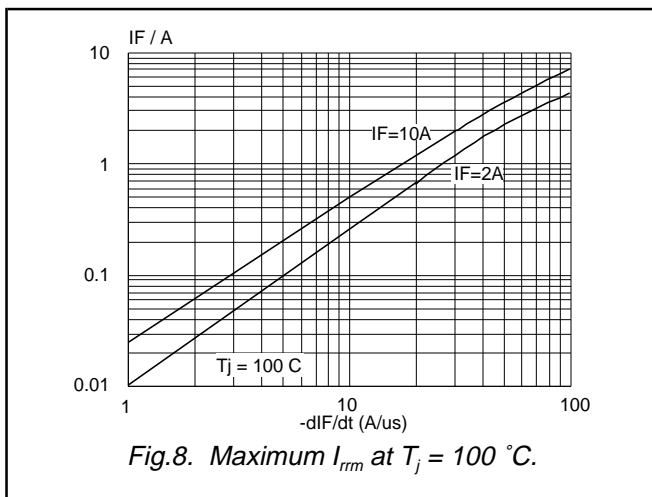
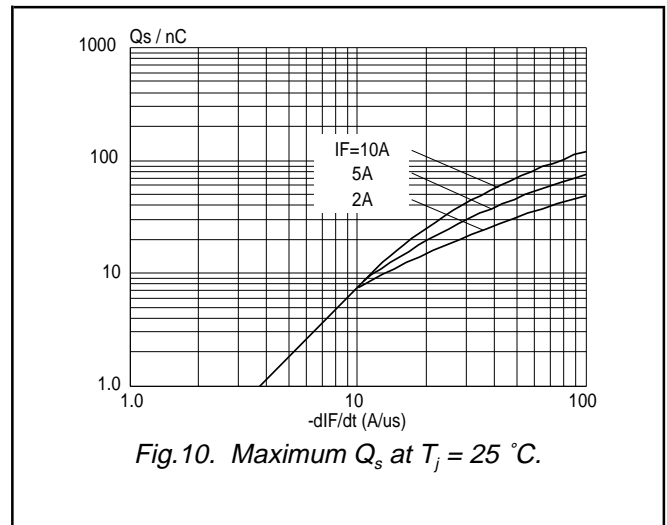
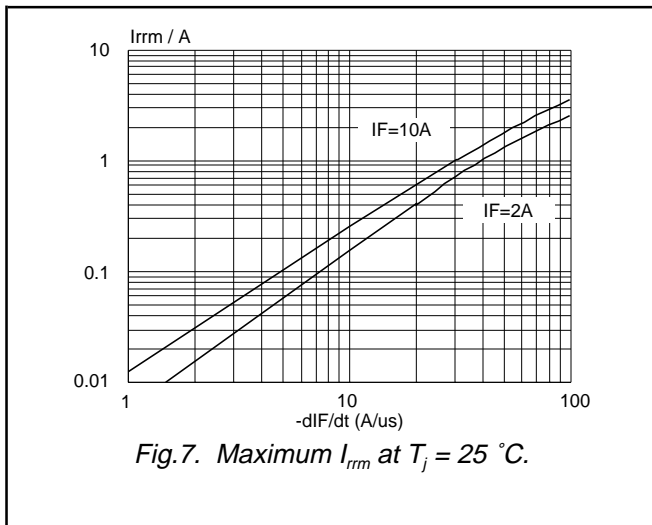
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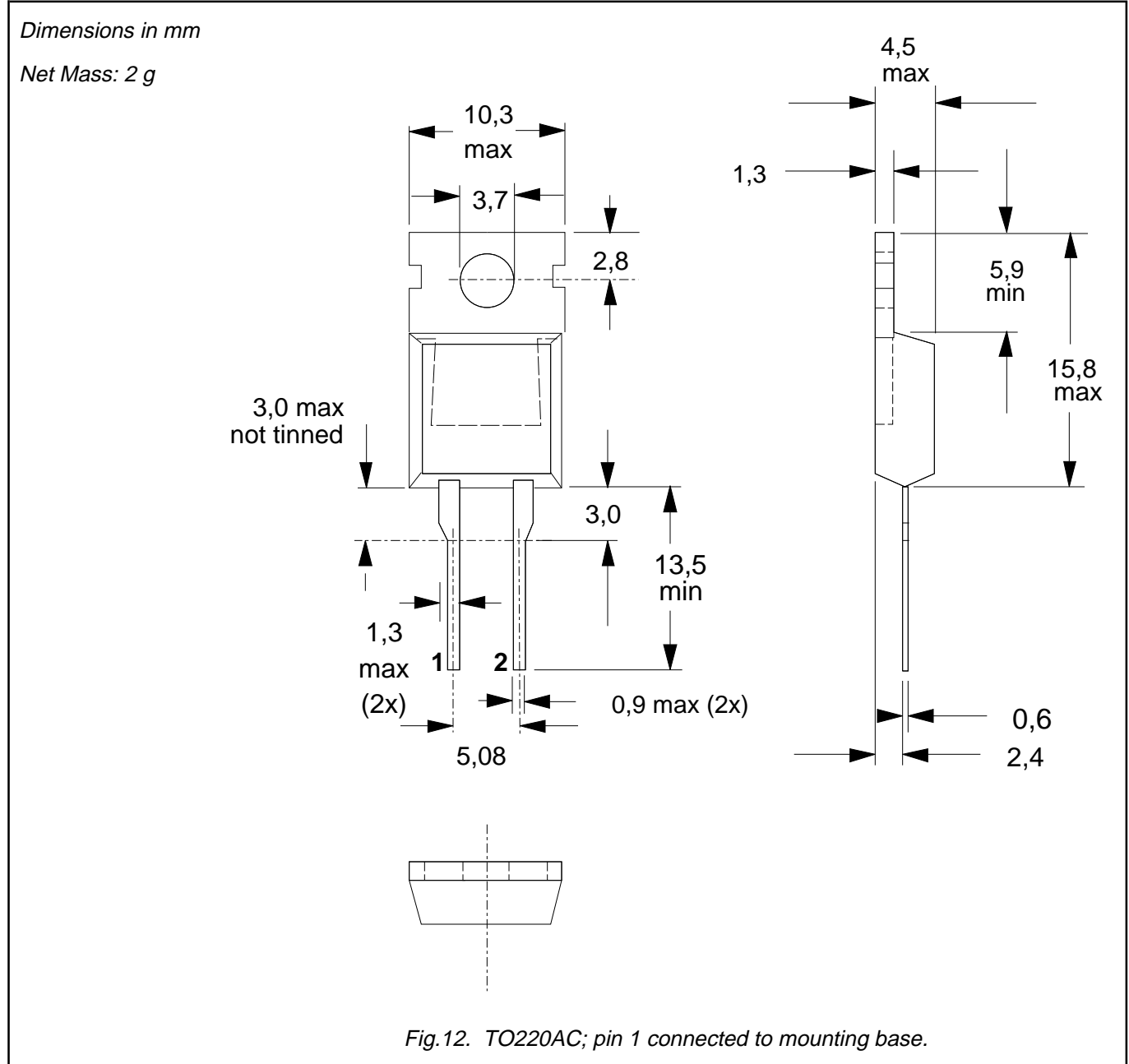
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**MECHANICAL DATA**



**Notes**

- 1. Accessories supplied on request: refer to mounting instructions for TO220 envelopes.
- 2. Epoxy meets UL94 V0 at 1/8".

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**BYV79 series****DEFINITIONS**

<b>Data sheet status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values are given in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of this specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	
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**LIFE SUPPORT APPLICATIONS**

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