



# THE DATASHEET OF BYW98-200



## HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODE

### MAIN PRODUCT CHARACTERISTICS

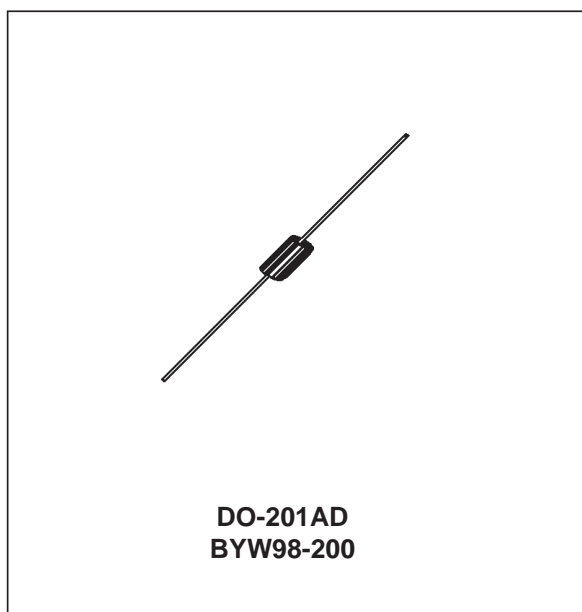
<b>I<sub>F(AV)</sub></b>	<b>3A</b>
<b>V<sub>RRM</sub></b>	<b>200 V</b>
<b>T<sub>j</sub> (max)</b>	<b>150 °C</b>
<b>V<sub>F</sub> (max)</b>	<b>0.85 V</b>
<b>t<sub>rr</sub> (max)</b>	<b>35 ns</b>

### FEATURES AND BENEFITS

- Very low conduction losses
- Negligible switching losses
- Low forward and reverse recovery times

### DESCRIPTION

Low voltage drop and rectifier suited for switching mode base drive and transistor circuits.



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V <sub>RRM</sub>	Repetitive peak reverse voltage		200	V
I <sub>FRM</sub>	Repetitive peak forward current*	t <sub>p</sub> = 5μs F = 1KHz	110	A
I <sub>F(AV)</sub>	Average forward current	T <sub>a</sub> = 75°C δ = 0.5	3	A
I <sub>FSM</sub>	Surge non repetitive forward current	t <sub>p</sub> = 10ms Sinusoidal	70	A
T <sub>stg</sub>	Storage temperature range		- 65 to + 150	°C
T <sub>j</sub>	Maximum operating junction temperature		150	°C
T <sub>L</sub>	Maximum lead temperature for soldering during 10s at 4mm from case		230	°C

\* On infinite heatsink with 10mm lead length.

**THERMAL PARAMETERS**

Symbol	Parameter	Value	Unit
Rth (j-a)	Junction-ambient*	25	°C/W

\* On infinite heatsink with 10mm lead length.

**STATIC ELECTRICAL CHARACTERISTICS**

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I <sub>R</sub> *	Reverse leakage current	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>R</sub> RM			10	μA
		T <sub>j</sub> = 100°C				0.5	mA
V <sub>F</sub> **	Forward voltage drop	T <sub>j</sub> = 25°C	I <sub>F</sub> = 9A			1.2	V
		T <sub>j</sub> = 100°C	I <sub>F</sub> = 3A		0.78	0.85	

Pulse test : \* tp = 5 ms, δ < 2 %

\*\* tp = 380 μs, δ < 2 %

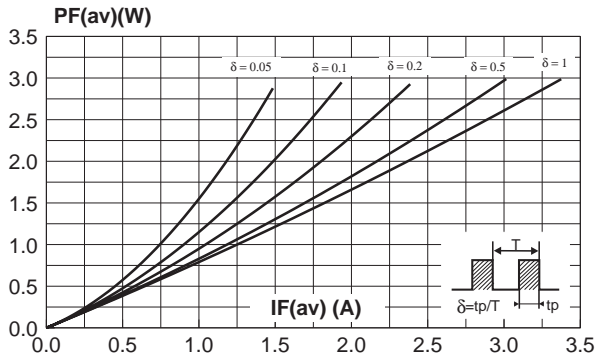
To evaluate the maximum conduction losses use the following equations:

$$P = 0.75 \times I_{F(AV)} + 0.04 I_{F(RMS)}^2$$

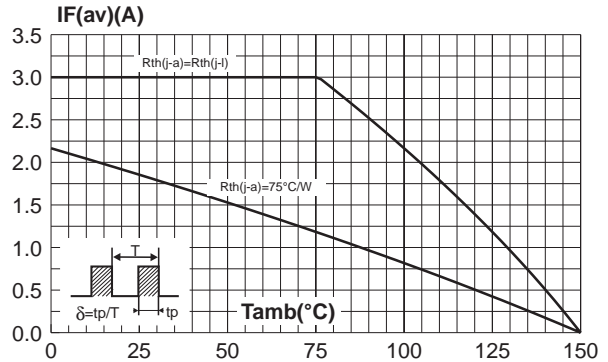
**RECOVERY CHARACTERISTICS**

Symbol	Test conditions		Min.	Typ.	Max.	Unit
trr	I <sub>F</sub> = 1A	dI <sub>F</sub> /dt = - 50A/μs V <sub>R</sub> = 30V	T <sub>j</sub> = 25°C		35	ns
Qrr	I <sub>F</sub> = 3A	dI <sub>F</sub> /dt = - 20A/μs V <sub>R</sub> ≤ 30V	T <sub>j</sub> = 25°C	15		nC
tfr	I <sub>F</sub> = 3A	dI <sub>F</sub> /dt = - 50A/μs Measured at 1.1 x V <sub>F</sub> max	T <sub>j</sub> = 25°C	20		ns
V <sub>FP</sub>	I <sub>F</sub> = 3A	dI <sub>F</sub> /dt = - 50A/μs	T <sub>j</sub> = 25°C	5		V

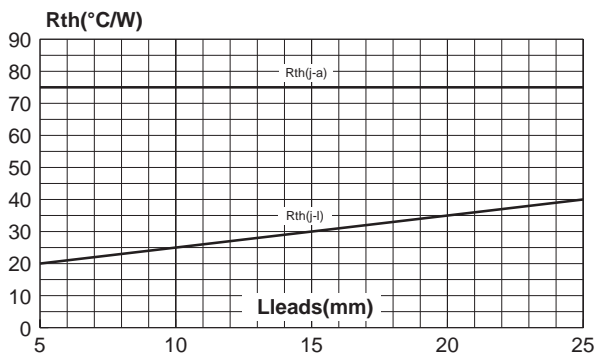
**Fig. 1:** Average forward power dissipation versus average forward current.



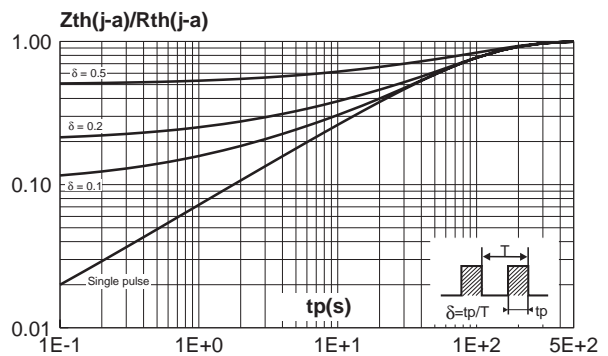
**Fig. 2:** Average forward current versus ambient temperature ( $\delta=0.5$ ).



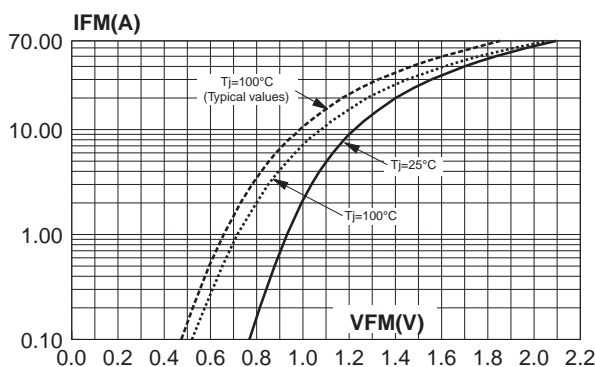
**Fig. 3:** Thermal resistance versus lead length.



**Fig. 4:** Variation of thermal impedance junction to ambient versus pulse duration (recommended pad layout, epoxy FR4,  $e(\text{Cu}) = 35\mu\text{m}$ ).



**Fig. 5:** Forward voltage drop versus forward current (maximum values).



**Fig. 6:** Junction capacitance versus reverse voltage applied (typical values).

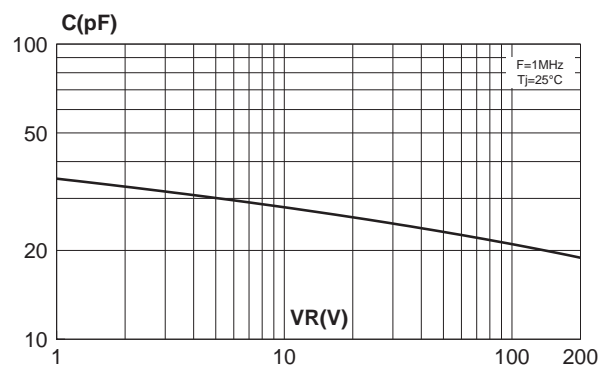


Fig. 7: Reverse recovery time versus  $di_F/dt$ .

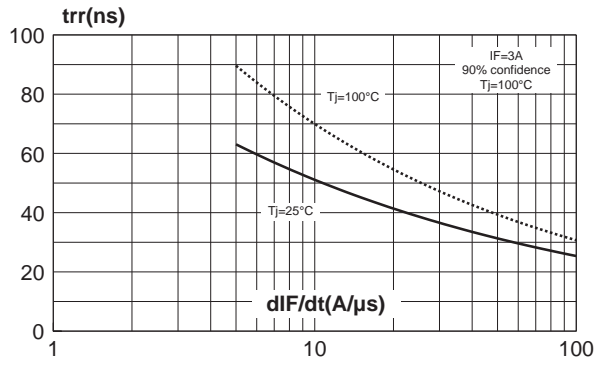


Fig. 8: Peak reverse recovery current versus  $di_F/dt$ .

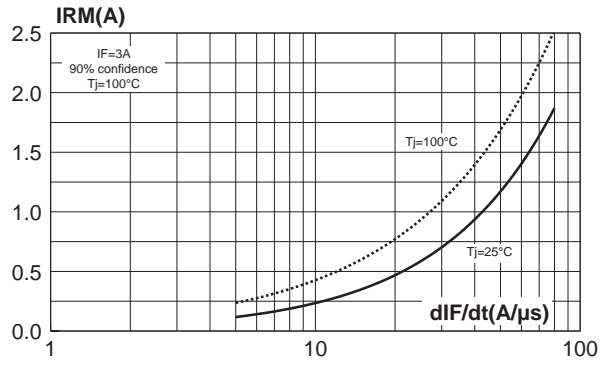
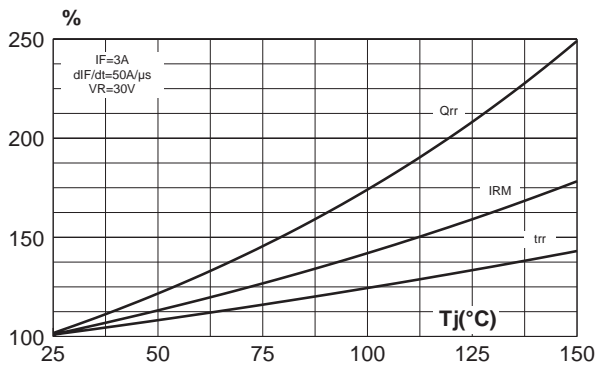
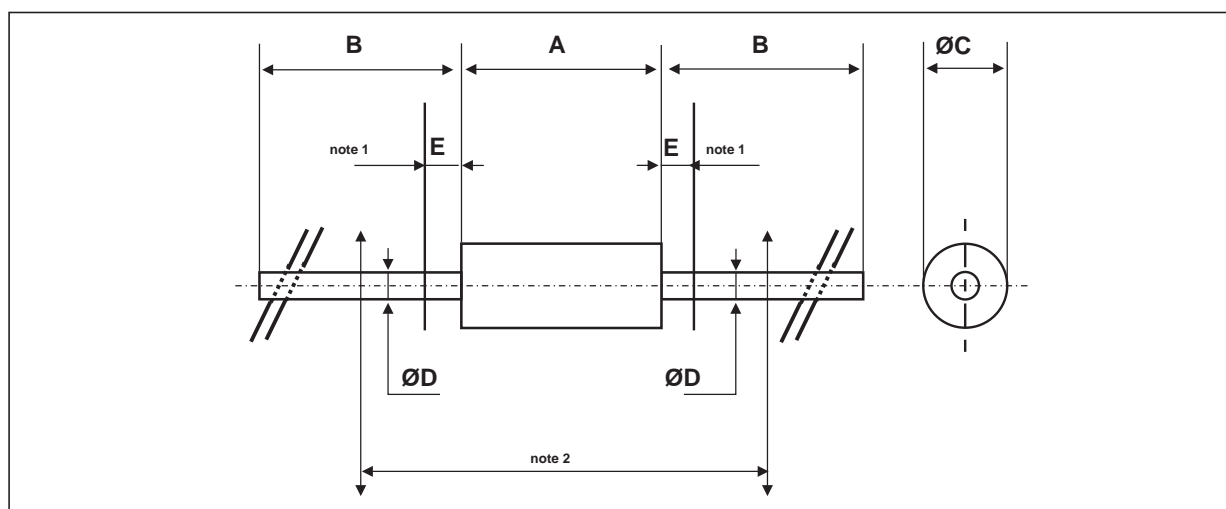


Fig. 9: Dynamic parameters versus junction temperature.



**PACKAGE MECHANICAL DATA**

DO-201AD



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9.50		0.374	1 - The lead diameter $\varnothing D$ is not controlled over zone E  2 - The minimum axial length within which the device may be placed with its leads bent at right angles is 0.59" (15 mm)
B	25.40		1.000		
$\varnothing C$		5.30		0.209	
$\varnothing D$		1.30		0.051	
E		1.25		0.049	

Ordering code	Marking	Package	Weight	Base qty	Delivery mode
BYW98-200	BYW98-200	DO-201AD	1.16 g	600	Ammopack
BYW98-200RL	BYW98-200	DO-201AD	1.16 g	1900	Tape and reel

- White band indicates cathode
- Epoxy meets UL94,V0



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