

**HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES****MAIN PRODUCT CHARACTERISTICS**

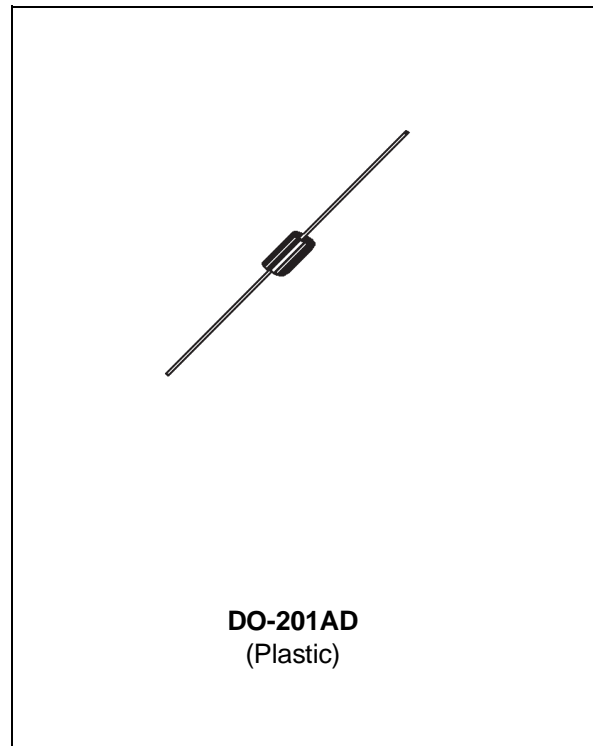
<b>I<sub>F(AV)</sub></b>	<b>3A</b>
<b>V<sub>RRM</sub></b>	<b>200 V</b>
<b>T<sub>j</sub> (max)</b>	<b>150 °C</b>
<b>V<sub>F</sub> (max)</b>	<b>0.85 V</b>
<b>t<sub>rr</sub> (max)</b>	<b>35 ns</b>

**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)

<b>Symbol</b>	<b>Parameter</b>		<b>Value</b>	<b>Unit</b>
V <sub>RRM</sub>	Repetitive peak reverse voltage		200	V
I <sub>FRM</sub>	Repetitive peak forward current *	t <sub>p</sub> =5 μs 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.

## BYW98-200

### THERMAL RESISTANCE

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>RRM</sub>			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 %

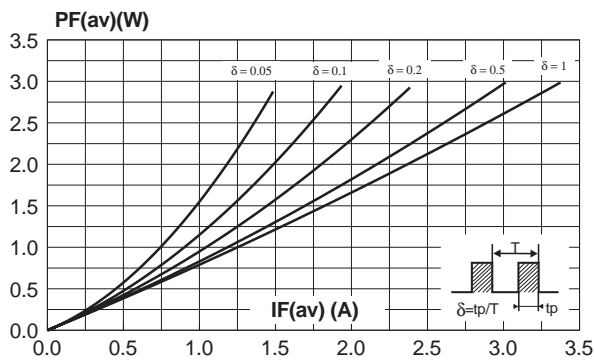
To evaluate the conduction losses use the following equations:

$$P = 0.75 \times I_F(AV) + 0.04 I_F^2(RMS)$$

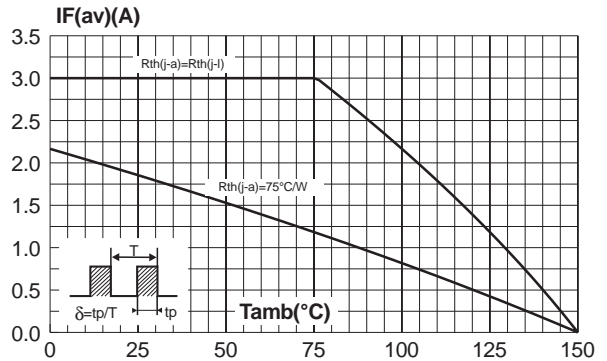
### RECOVERY CHARACTERISTICS

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

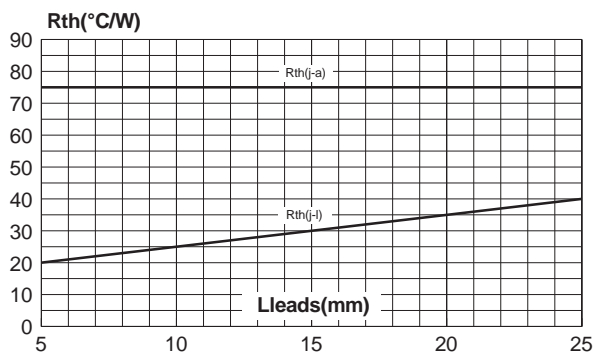
**Fig. 1:** Average forward power dissipation versus average forward current.



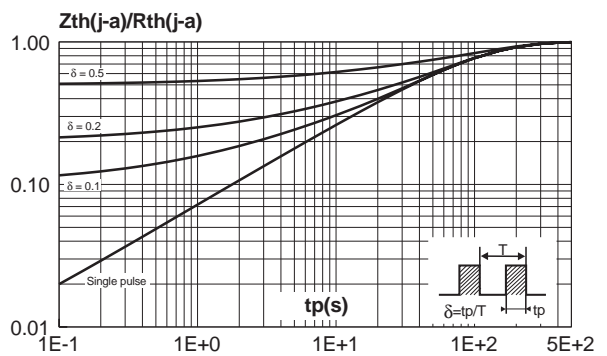
**Fig. 2:** Average forward current versus ambient temperature ( $\delta=0.5$ ).



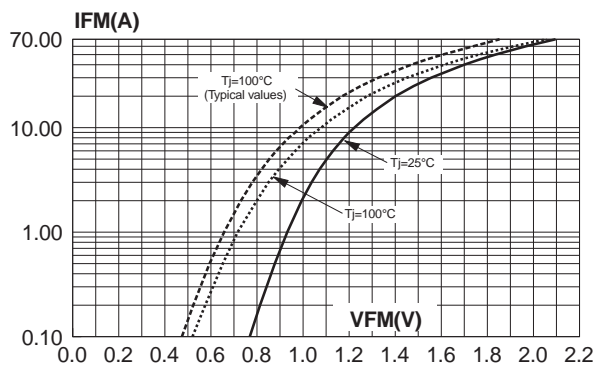
**Fig. 3:** Thermal resistance versus lead length.



**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).

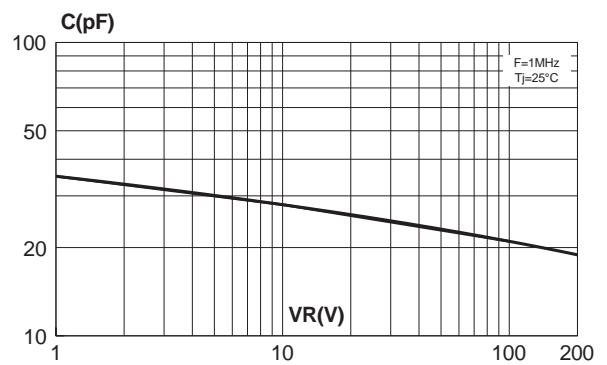


Fig. 7: Reverse recovery time versus  $dI_F/dt$ .

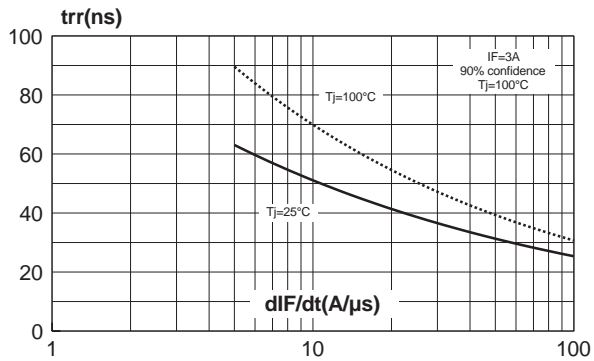


Fig. 8: Peak reverse recovery current versus  $dI_F/dt$ .

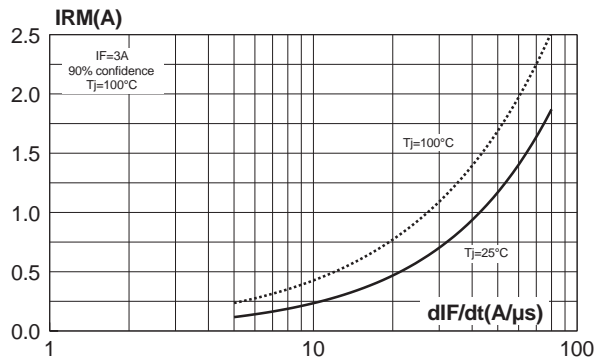
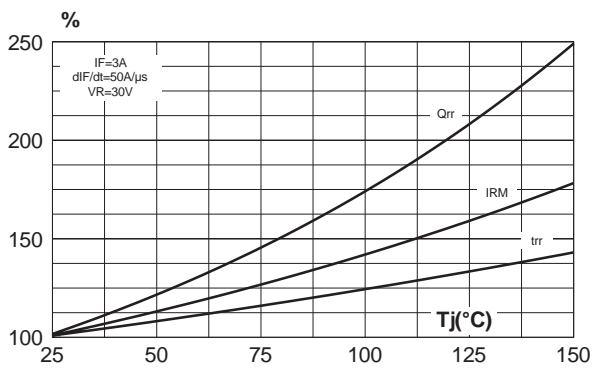
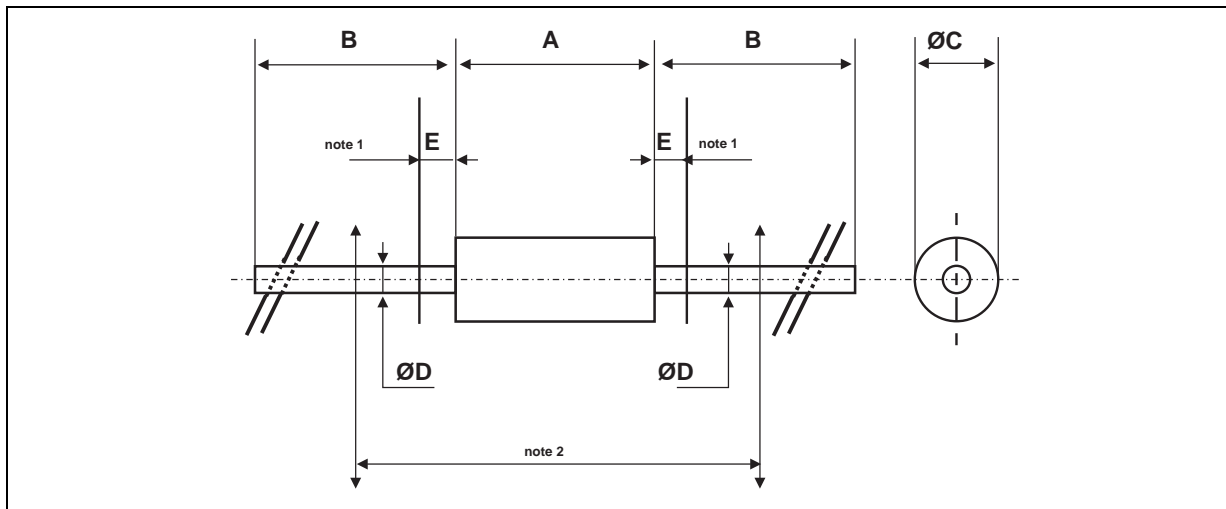


Fig. 9: Dynamic parameters versus junction temperature.



## 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	Box
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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