BYW98-200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODE

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	3A
V_{RRM}	200 V
Tj (max)	150 °C
V_F (max)	0.85 V
trr (max)	35 ns

DO-201AD
BYW98-200

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_{RRM}	Repetitive peak reverse voltage		200	V
I_{FRM}	Repetitive peak forward current*	tp = 5µs F = 1KHz	110	A
$I_{F(AV)}$	Average forward current	Ta = 75°C δ = 0.5	3	A
I_{FSM}	Surge non repetitive forward current	tp = 10ms Sinusoidal	70	A
T_{stg}	Storage temperature range		- 65 to + 150	°C
Tj	Maximum operating junction temperature		150	°C
T_L	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_R *	Reverse leakage current	T_j = 25°C	$V_R = V_{RRM}$			10	µA
		T_j = 100°C				0.5	mA
V_F **	Forward voltage drop	T_j = 25°C	I_F = 9A			1.2	V
		T_j = 100°C	I_F = 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:

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

RECOVERY CHARACTERISTICS

Symbol	Test conditions		Min.	Typ.	Max.	Unit
trr	I_F = 1A dI_F/dt = - 50A/µs V_R = 30V	T_j = 25°C			35	ns
Qrr	I_F = 3A dI_F/dt = - 20A/µs $V_R \leq$ 30V	T_j = 25°C		15		nC
tfr	I_F = 3A dI_F/dt = - 50A/µs Measured at 1.1 x V_F max	T_j = 25°C		20		ns
V_{FP}	I_F = 3A dI_F/dt = - 50A/µs	T_j = 25°C		5		V

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

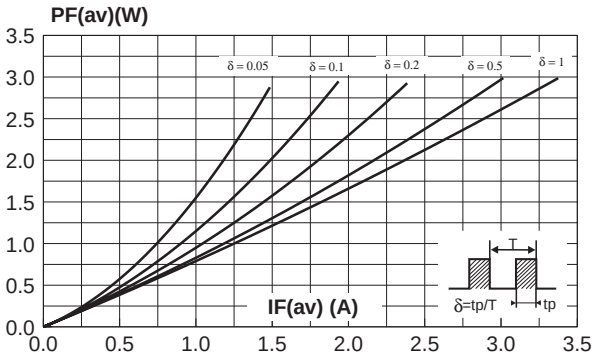


Fig. 2: Average forward current versus ambient temperature (δ=0.5).

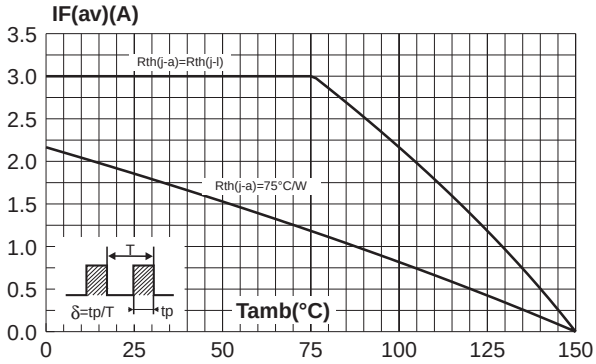


Fig. 3: Thermal resistance versus lead length.

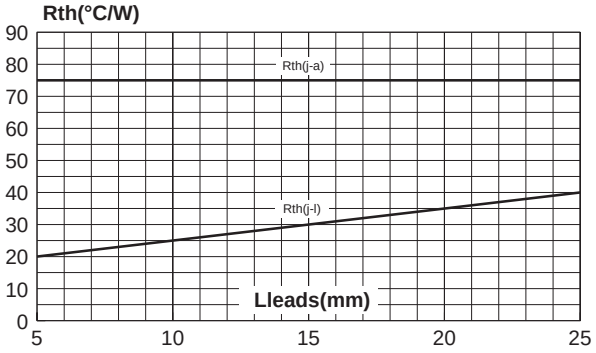


Fig. 4: Variation of thermal impedance junction to ambient versus pulse duration (recommended pad layout, epoxy FR4, e(Cu) = 35µm).

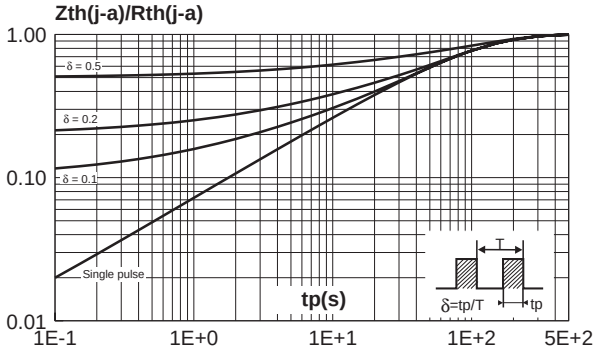


Fig. 5: Forward voltage drop versus forward current (maximum values).

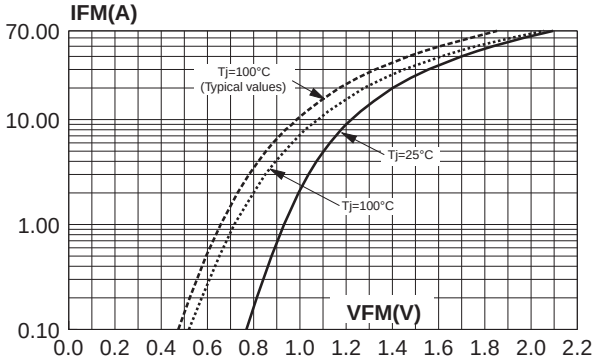


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

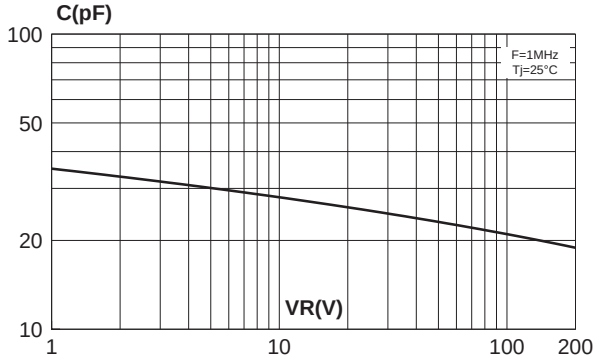


Fig. 7: Reverse recovery time versus dI_F/dt.

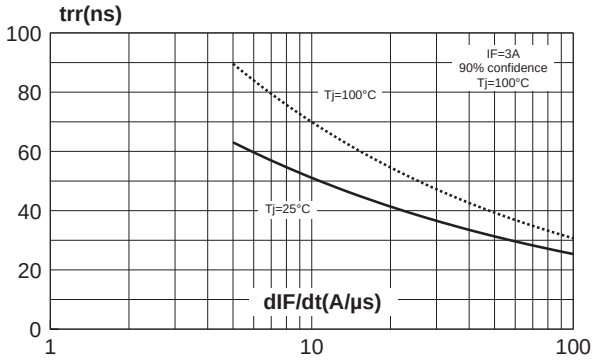


Fig. 8: Peak reverse recovery current versus dI_F/dt.

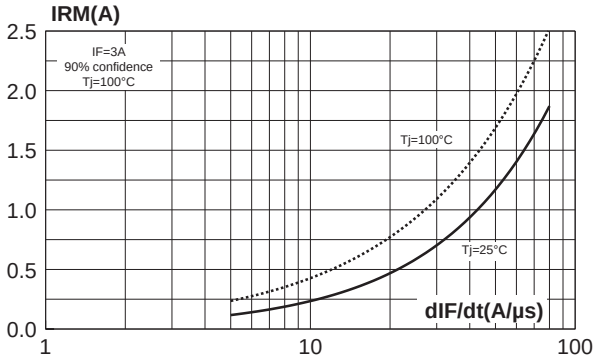
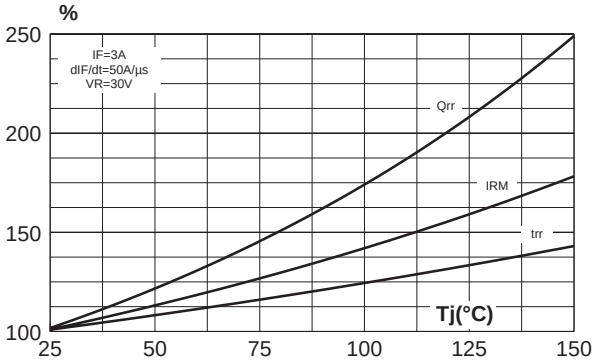
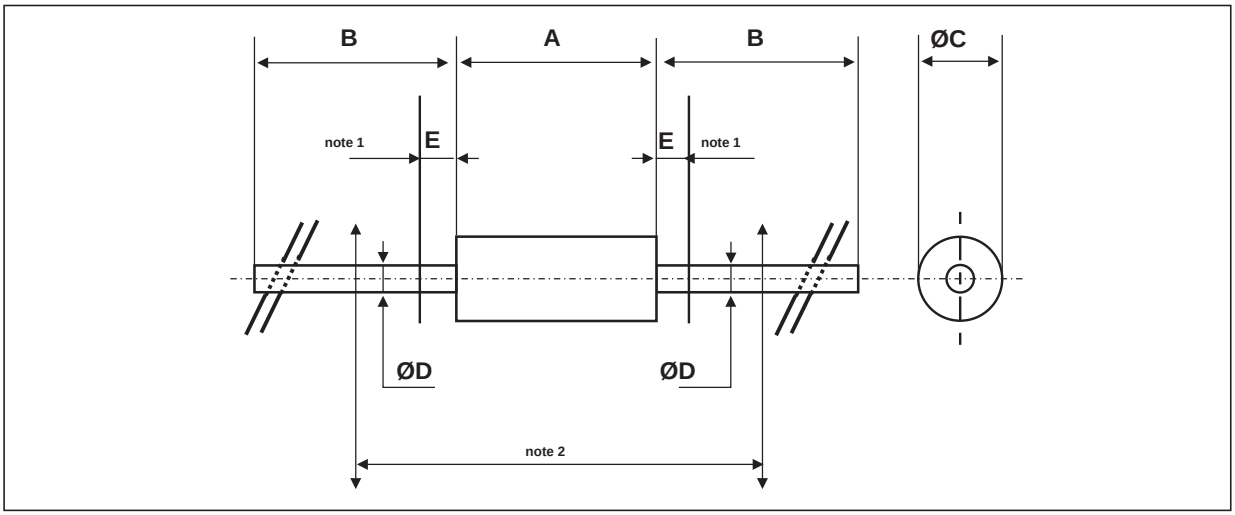


Fig. 9: Dynamic parameters versus junction temperature.



PACKAGE MECHANICAL DATA

DO-201AD



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