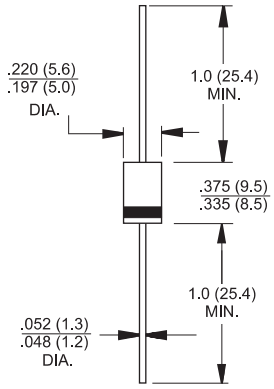
BYW98-200

High Efficiency Fast Recovery Rectifier Diodes

DO-201AD



Dimensions in inches and (millimeters)

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

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=5 µs 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	t_p = 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 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_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 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_{rr}	T_j = 25°C I_F = 1A dI_F/dt = - 50A/µs V_R = 30V			35	ns
Q_{rr}	T_j = 25°C I_F = 3A dI_F/dt = - 20A/µs $V_R \leq$ 30V		15		nC
t_{fr}	T_j = 25°C I_F = 3A dI_F/dt = - 50A/µs Measured at 1.1 x V_F max		20		ns
V_{FP}	T_j = 25°C I_F = 3A dI_F/dt = - 50A/µs		5		V

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

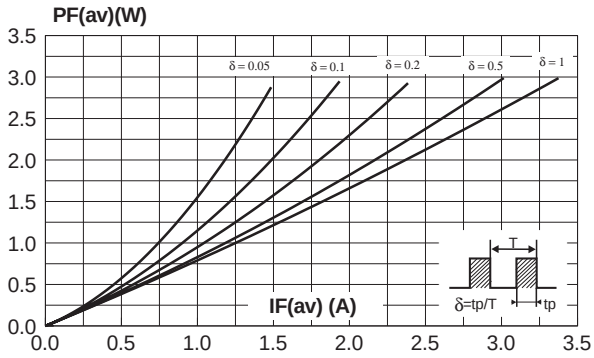


Fig. 2: Average forward current versus ambient temperature (δ=0.5).

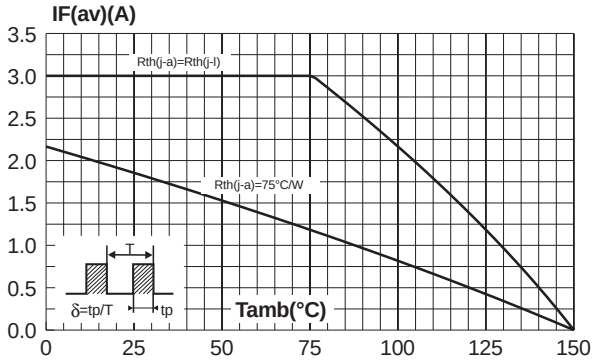


Fig. 3: Thermal resistance versus lead length.

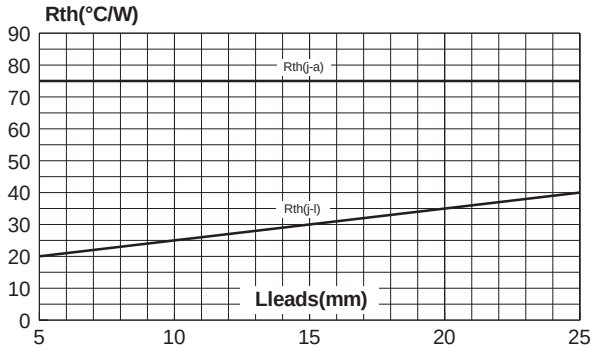


Fig. 4: Variation of thermal impedance junction to ambient versus pulse duration (recommended pad layout, epoxy FR4, e(Cu)=35µm).

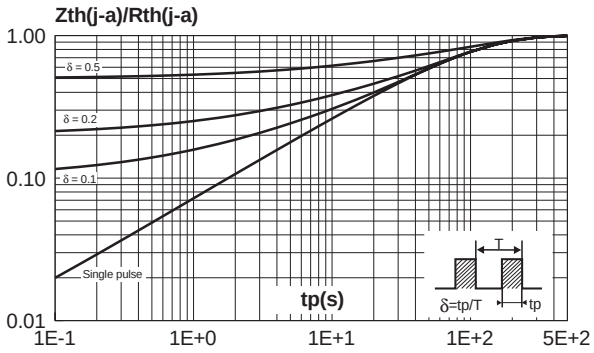


Fig. 5: Forward voltage drop versus forward current (maximum values).

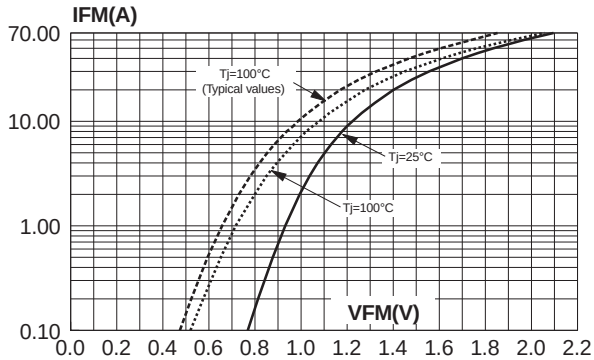


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

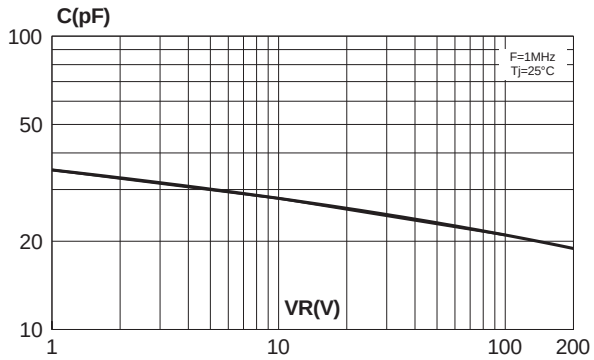


Fig. 7: Reverse recovery time versus dI_F/dt.

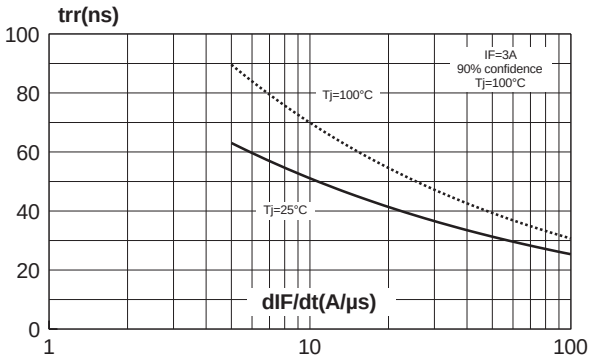


Fig. 8: Peak reverse recovery current versus dI_F/dt.

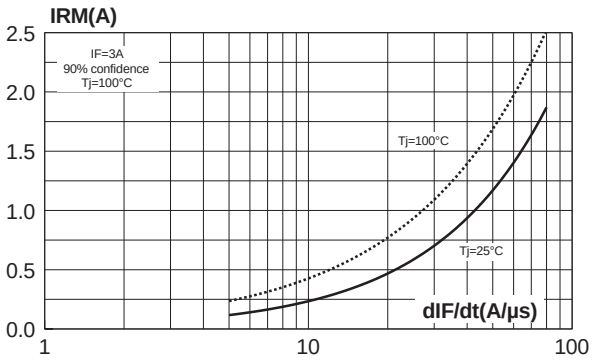


Fig. 9: Dynamic parameters versus junction temperature.