



## BYW100-200

### HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODE

#### MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	1.5 A
$V_{RRM}$	200 V
$T_j(\text{max})$	150 °C
$V_F(\text{max})$	0.85 V

#### FEATURES AND BENEFITS

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF  $t_{rr}$  AND  $I_{RM}$  AT 100°C UNDER USERS CONDITIONS



#### 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 *	$t_p = 5 \mu s$ $F = 1 KHz$	80	A
$I_{F(AV)}$	Average forward current *	$T_a = 95^\circ C$ $\delta = 0.5$	1.5	A
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10 ms$ sinusoidal	50	A
$T_{stg}$	Storage temperature range		-65 +150	°C
$T_j$	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.

## BYW100-200

### THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to ambient *	45	°C/W

\* On infinite heatsink with 10mm lead length.

### STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests conditions	Min.	Typ.	Max.	Unit
$I_R^*$	Reverse leakage current	$V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$		10	$\mu\text{A}$
			$T_j = 100^\circ\text{C}$		0.5	mA
$V_F^{**}$	Forward voltage drop	$I_F = 4.5\text{ A}$	$T_j = 25^\circ\text{C}$		1.2	V
			$T_j = 100^\circ\text{C}$	0.78	0.85	

Pulse test : \*  $t_p = 5\text{ ms}$ ,  $\delta < 2\%$

\*\*  $t_p = 380\text{ }\mu\text{s}$ ,  $\delta < 2\%$

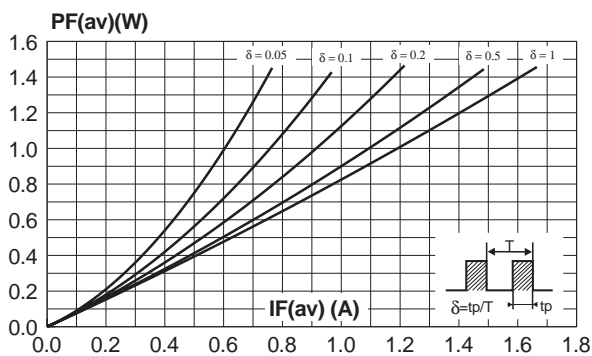
To evaluate the maximum conduction losses use the following equation :

$$P = 0.75 \times I_{F(AV)} + 0.075 I_{F(RMS)}^2$$

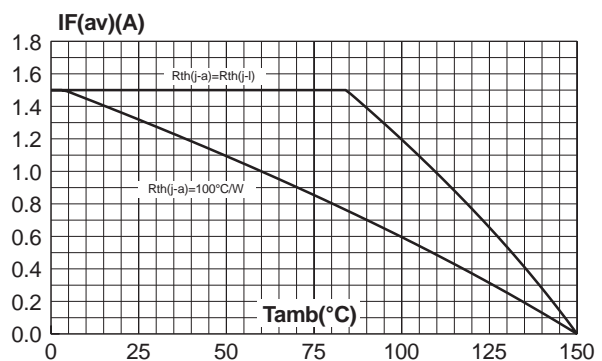
### RECOVERY CHARACTERISTICS

Symbol	Tests conditions	Min.	Typ.	Max.	Unit
$t_{rr}$	$I_F = 1\text{ A}$ $di_F/dt = -50\text{ A}/\mu\text{s}$ $V_R = 30\text{ V}$			35	ns
$t_{fr}$	$I_F = 1.5\text{ A}$ $di_F/dt = -50\text{ A}/\mu\text{s}$ Measured at $1.1 \times V_F$ max.		30		ns
$V_{FP}$	$I_F = 1.5\text{ A}$ $di_F/dt = -50\text{ A}/\mu\text{s}$		5		V
$Q_{rr}$	$I_F = 1.5\text{ A}$ $di_F/dt = -20\text{ A}/\mu\text{s}$ $V_R \leq 30\text{ V}$		10		nC

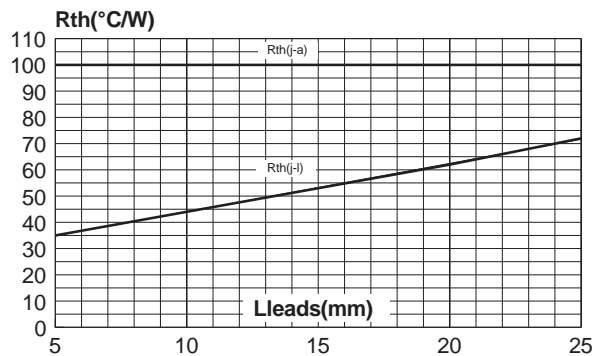
**Fig. 1:** Average forward power dissipation versus average forward current.



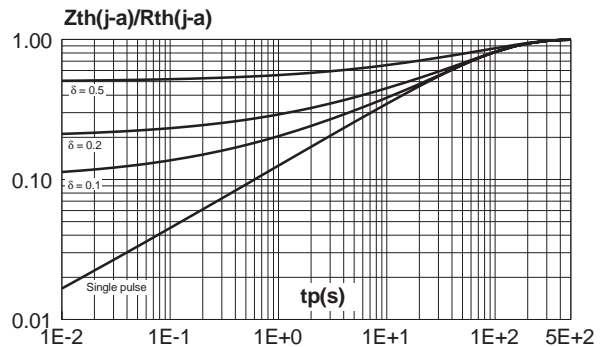
**Fig. 2:** Average forward current versus ambient temperature ( $\delta=0.5$ ).



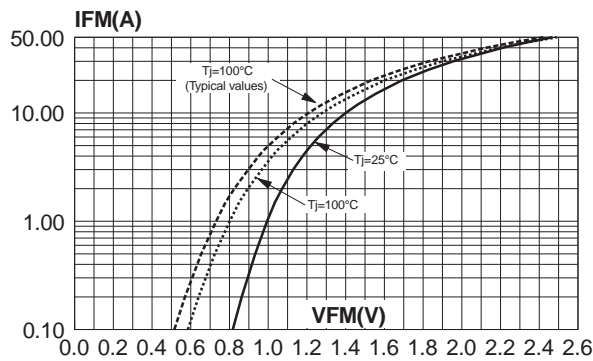
**Fig. 3:** Thermal resistance versus lead length.



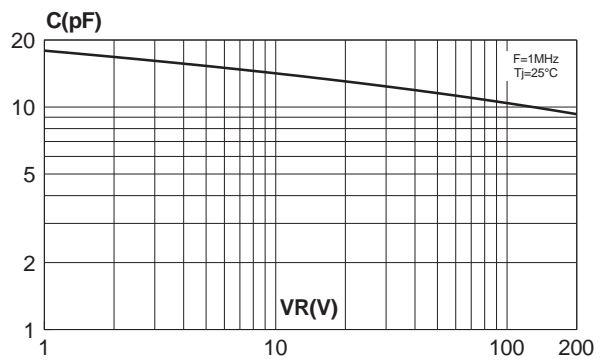
**Fig. 4:** Variation of thermal impedance junction to ambient versus pulse duration (recommended pad layout, epoxy FR4, e(Cu)=35µm).



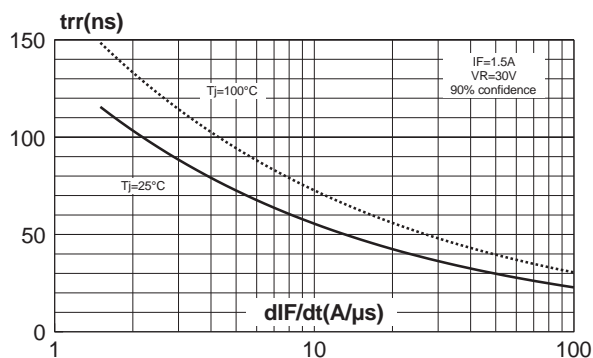
**Fig. 5:** Forward voltage drop versus forward current (maximum values).



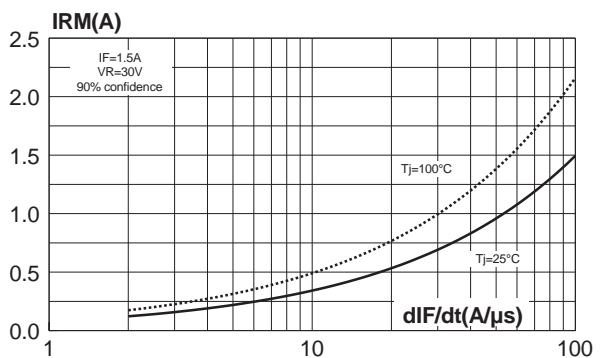
**Fig. 6:** Junction capacitance versus reverse voltage applied (typical values).



**Fig. 7:** Reverse recovery time versus dIF/dt.



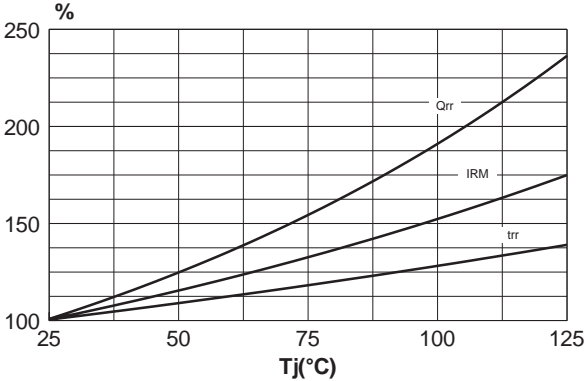
**Fig. 8:** Peak reverse recovery current versus dIF/dt.



**BYW100-200**

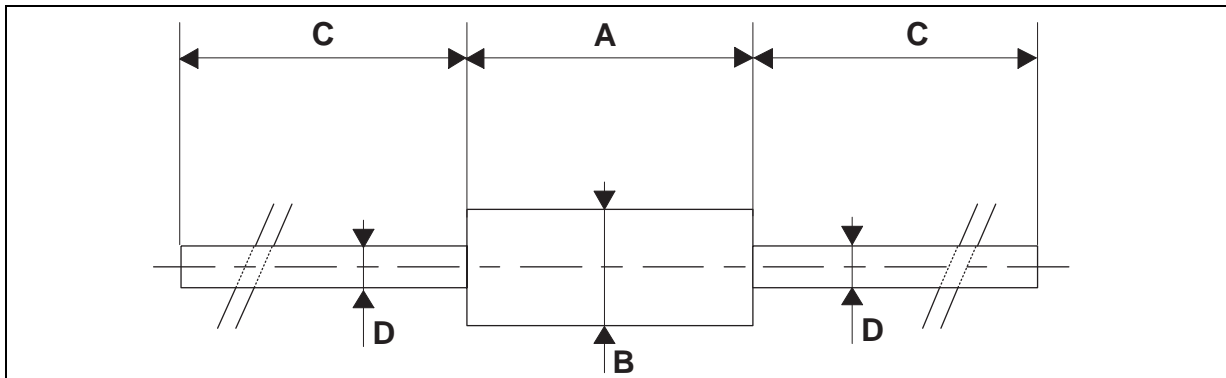
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**Fig. 9:** Dynamic parameters versus junction temperature.



**PACKAGE MECHANICAL DATA**

F126



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
<b>A</b>	6.05	6.20	6.35	0.238	0.244	0.250
<b>B</b>	2.95	3.00	3.05	0.116	0.118	0.120
<b>C</b>	26		31	1.024		1.220
<b>D</b>	0.76	0.81	0.86	0.030	0.032	0.034

Ordering code	Marking	Package	Weight	Base qty	Delivery mode
BYW100-200	BYW100-200	F126	0.393g	1000	Ammopack
BYW100-200RL	BYW100-200	F126	0.393g	6000	Tape and reel

- Cooling method: by conduction (method A)
- Epoxy meets UL 94,V0

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