



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 *	$t_p = 5 \mu s$ $F = 1 \text{ KHz}$	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	$t_p = 10 \text{ ms}$ 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.

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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	μA
			$T_j = 100^\circ\text{C}$		0.5	mA
V_F^{**}	Forward voltage drop	$I_F = 4.5\text{ A}$	$T_j = 25^\circ\text{C}$		1.2	V
		$I_F = 1.5\text{ A}$	$T_j = 100^\circ\text{C}$	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.

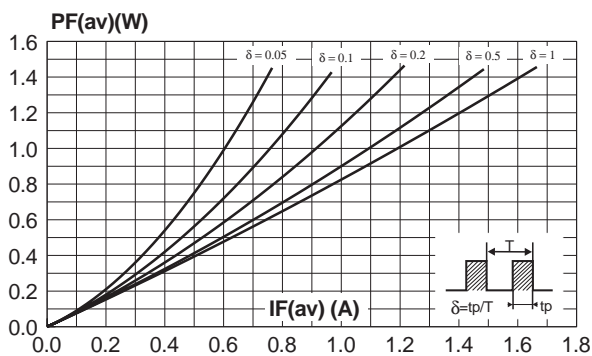


Fig. 2: Average forward current versus ambient temperature ($\delta=0.5$).

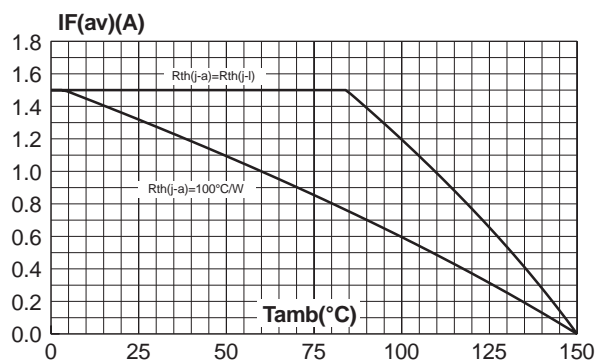


Fig. 3: Thermal resistance versus lead length.

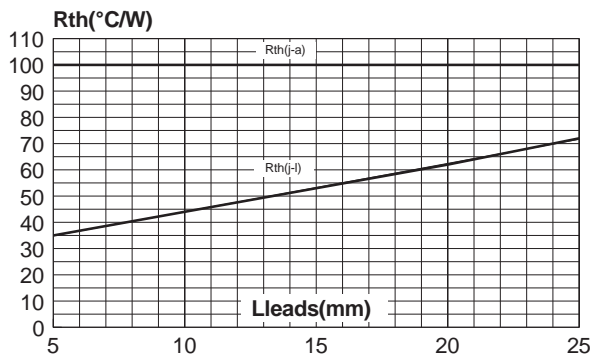


Fig. 4: Variation of thermal impedance junction to ambient versus pulse duration (recommended pad layout, epoxy FR4, e(Cu)=35µm).

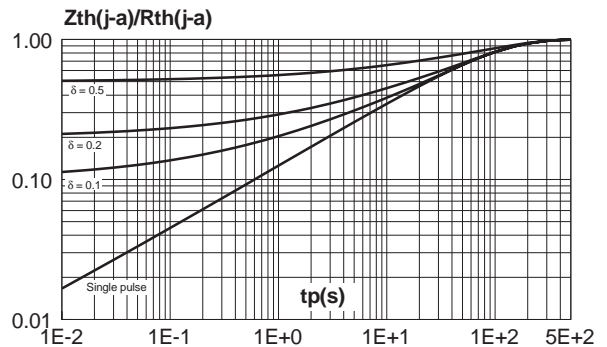


Fig. 5: Forward voltage drop versus forward current (maximum values).

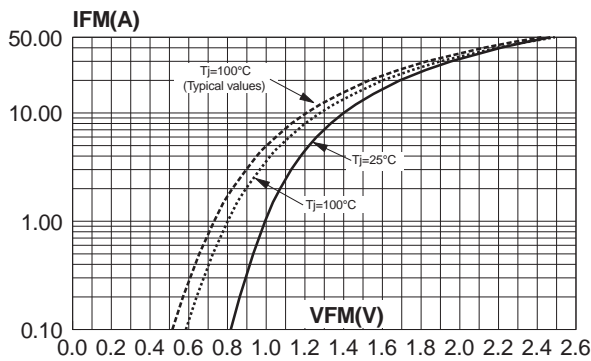


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

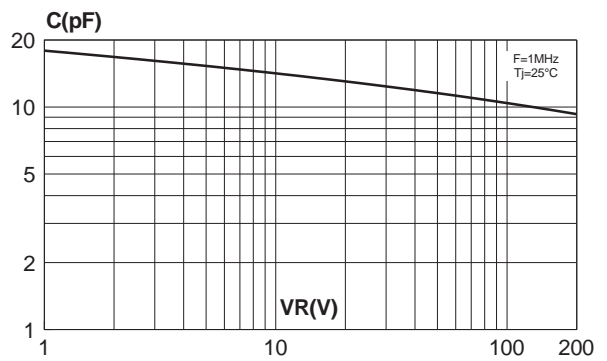


Fig. 7: Reverse recovery time versus dIF/dt.

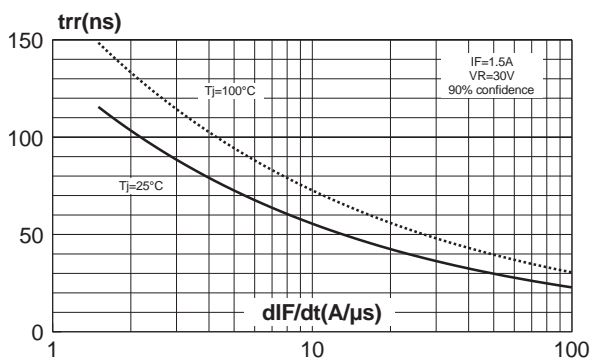
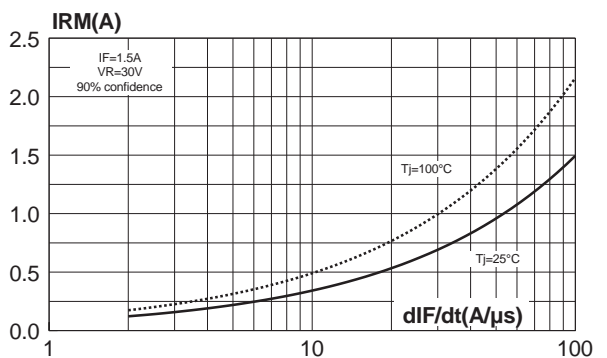
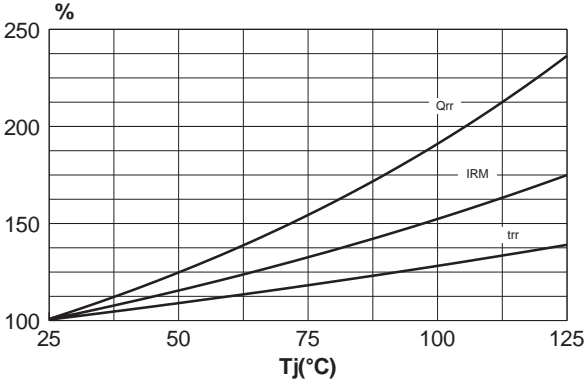


Fig. 8: Peak reverse recovery current versus dIF/dt.



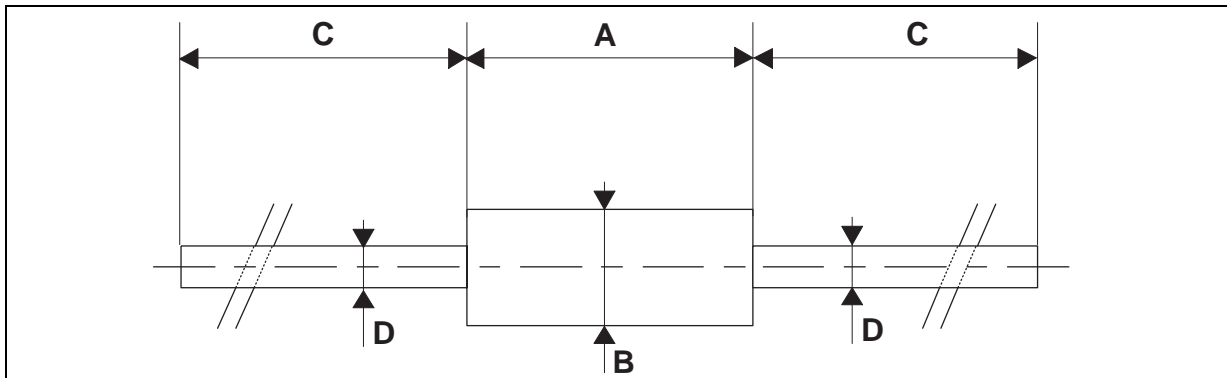
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Fig. 9: Dynamic parameters versus junction temperature.



PACKAGE MECHANICAL DATA

F126



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.05	6.20	6.35	0.238	0.244	0.250
B	2.95	3.00	3.05	0.116	0.118	0.120
C	26		31	1.024		1.220
D	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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