BYW100-200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODE

MAIN PRODUCT CHARACTERISTICS

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

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FEATURES AND BENEFITS

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF trr 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 *	tp = 5 µs F = 1KHz	80	A
$I_{F(AV)}$	Average forward current *	Ta = 95°C δ = 0.5	1.5	A
I_{FSM}	Surge non repetitive forward current	tp=10 ms sinusoidal	50	A
T_{stg}	Storage temperature range		-65 +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 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	$V_R = V_{RRM}$	Tj = 25°C			10	µA
			Tj = 100°C			0.5	mA
V_F **	Forward voltage drop	$I_F = 4.5$ A	Tj = 25°C			1.2	V
		$I_F = 1.5$ A	Tj = 100°C		0.78	0.85	

Pulse test : * tp = 5 ms, $\delta < 2$ %
** tp = 380 µs, $\delta < 2$ %

To evaluate the maximum conduction losses use the following equation :
$P = 0.75 \times I_{F(AV)} + 0.075\ I_{F}^{2}{}_{(RMS)}$

RECOVERY CHARACTERISTICS

Symbol	Tests conditions		Min.	Typ.	Max.	Unit
trr	$I_F = 1$ A dI$_F$/dt = - 50 A/µs $V_R = 30$ V	Tj = 25°C			35	ns
tfr	$I_F = 1.5$ A dI$_F$/dt = -50 A/µs Measured at 1.1 x V_F max.	Tj = 25°C		30		ns
V_{FP}	$I_F = 1.5$ A dI$_F$/dt = -50 A/µs	Tj = 25°C		5		V
Qrr	$I_F = 1.5$ A dI$_F$/dt = -20 A/µs $V_R \leq 30$ V	Tj = 25°C		10		nC

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

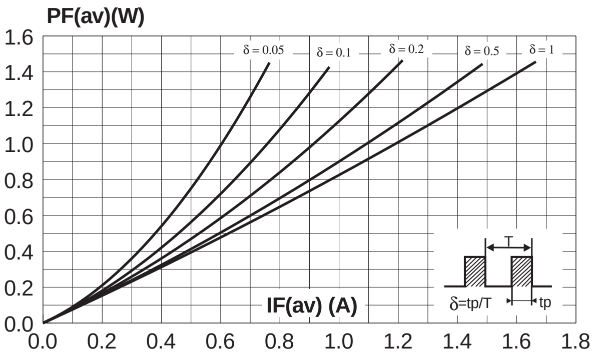


Fig. 2: Average forward current versus ambient temperature (δ=0.5).

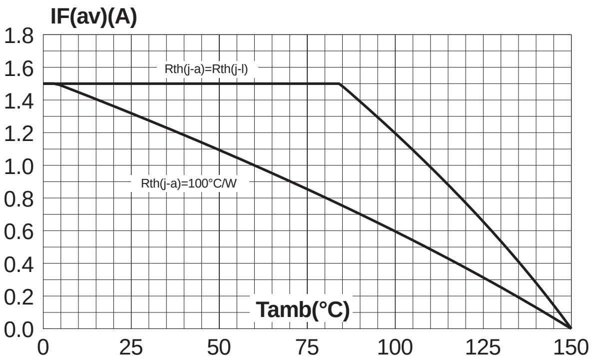


Fig. 3: Thermal resistance versus lead length.

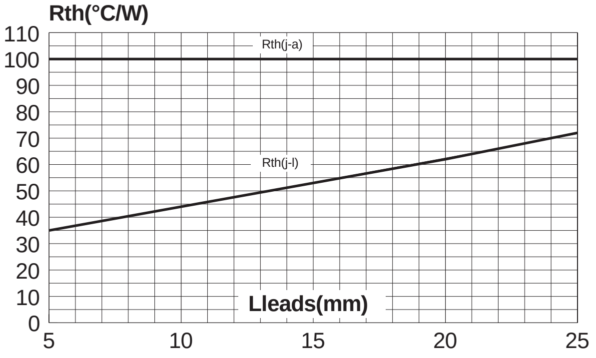


Fig. 4: Variation of thermal impedance junction to ambient versus pulse duration (recommended pad layout, epoxy FR4, e(Cu)=35µm)**.**

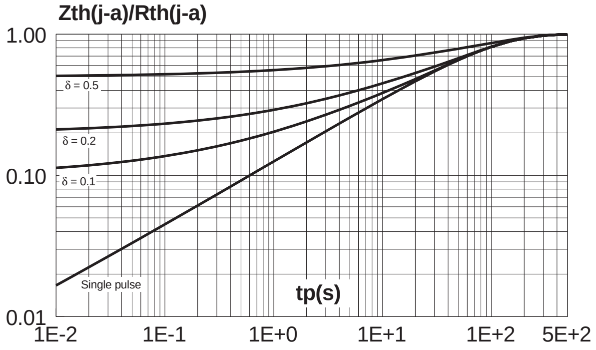


Fig. 5: Forward voltage drop versus forward current (maximum values).

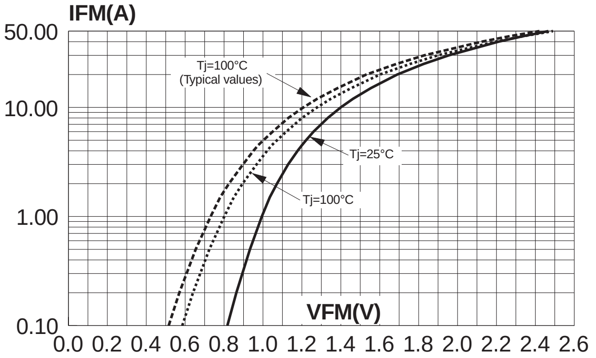


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

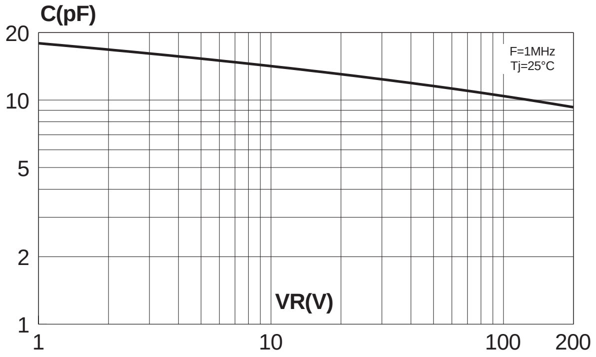


Fig. 7: Reverse recovery time versus dI$_F$/dt .

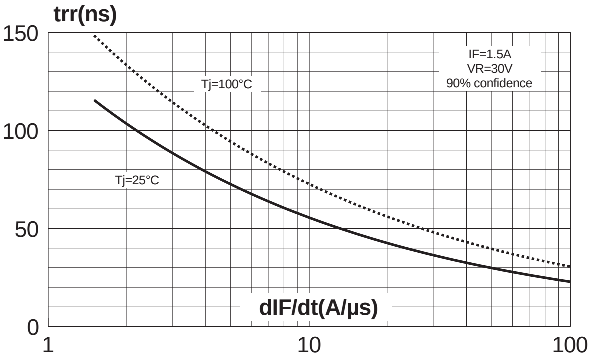


Fig. 8: Peak reverse recovery current versus dI$_F$/dt.

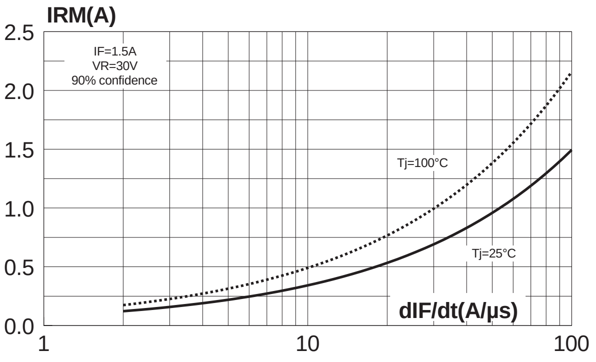
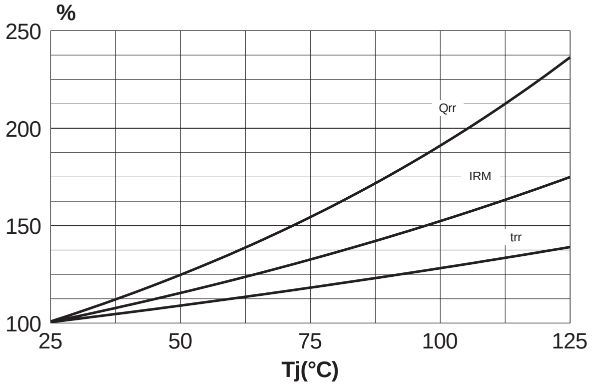


Fig. 9: Dynamic parameters versus junction temperature.



PACKAGE MECHANICAL DATA

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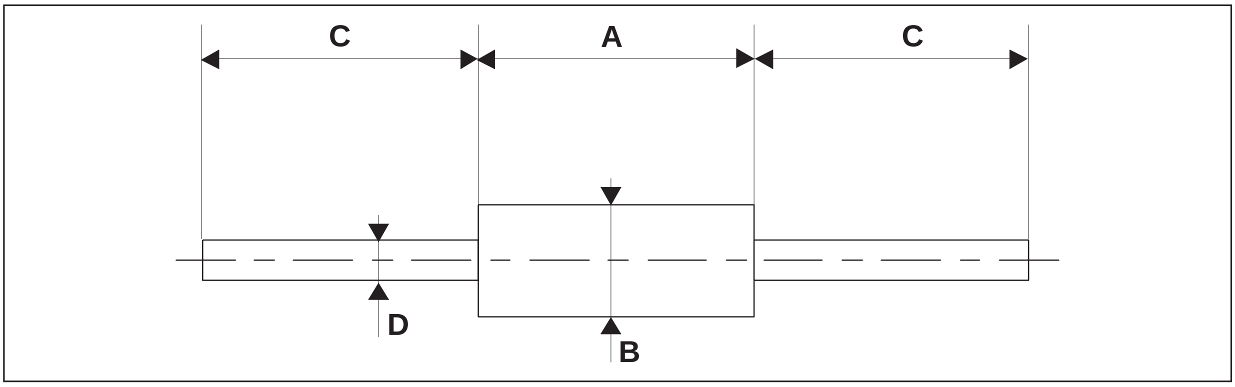

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	6.05	6.75	0.238	0.266
B	2.95	3.53	0.116	0.139
C	26	31	1.024	1.220
D	0.71	0.88	0.028	0.035

Ordering code	Marking	Package	Weight	Base qty	Delivery mode
BYW100-200	BYW100-200	DO-15	0.4 g	1000	Ammopack
BYW100-200RL	BYW100-200	DO-15	0.4 g	6000	Tape and reel

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

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