

SMBYW04-200 BYW4200B

HIGH EFFICIENCY FAST RECOVERY DIODE

MAIN PRODUCT CHARACTERISTICS

I_{F(AV)}	4 A
V_{RRM}	200 V
V_F (max)	0.85 V
T_j (max)	150 °C

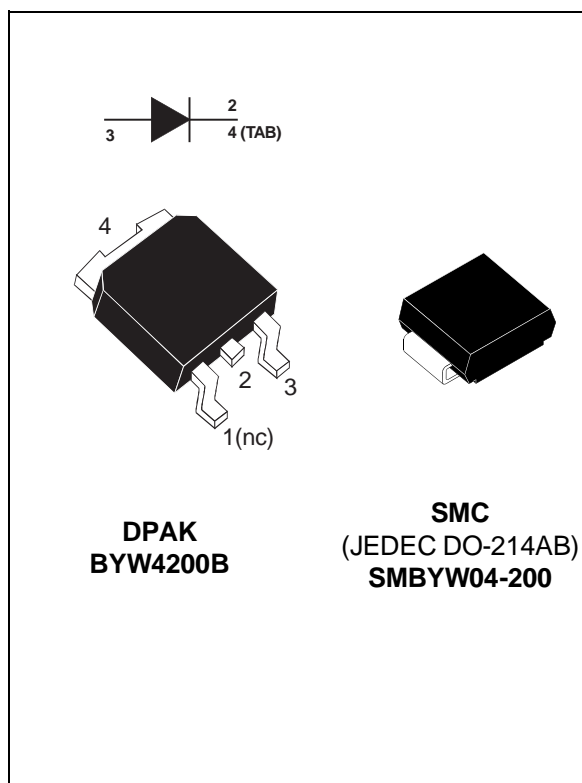
FEATURES AND BENEFITS

- SUITED TO SMPS AND DRIVES
- SURFACE MOUNT PACKAGE
- VERY LOW FORWARD LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH SURGE CURRENT CAPABILITY

DESCRIPTION

Single chip rectifier suited to Switch Mode Power Supplies and high frequency converters.

Packaged in DPAK and SMC, this surface mount device is intended for use in low voltage, high frequency inverters, free wheeling and rectification applications.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V _{RRM}	Repetitive peak reverse voltage		200	V
I _{F(RMS)}	RMS forward current		10	A
I _{F(AV)}	Average forward current δ = 0.5	DPAK SMC	T _{case} = 130°C T _{lead} = 70°C	4 A
I _{FSM}	Surge non repetitive forward current		tp = 10 ms sinusoidal	70 A
T _{stg}	Storage temperature range		- 65 to + 150	°C
T _j	Maximum operating junction temperature		150	°C

THERMAL RESISTANCE

Symbol	Parameter	Package	Value	Unit
R _{th(j-c)}	Junction to case	DPAK	5	°C/W
R _{th(j-l)}	Junction to leads	SMC	20	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	T _j = 25°C	V _R = V _{RRM}		10	μA
		T _j = 100°C		0.15	0.5	mA
V _F **	Forward voltage drop	T _j = 25°C	I _F = 12 A		1.25	V
		T _j = 100°C	I _F = 4 A		0.8	

Pulse test : * t_p = 5 ms, δ < 2 %
 ** t_p = 380 μs, δ < 2%

To evaluate the maximum conduction losses use the following equation :

$$P = 0.7 \times I_{F(AV)} + 0.037 I_{F(RMS)}^2$$

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t _{rr}	T _j = 25°C	I _F = 1A V _F = 30V dI _F /dt = -50 A/μs		26	35	ns
t _{fr}	T _j = 25°C	I _F = 4A V _{FR} = 1.1 x V _F max dI _F /dt = -50 A/μs		20		ns
V _{FP}	T _j = 25°C	I _F = 4A dI _F /dt = -50 A/μs		5		V

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

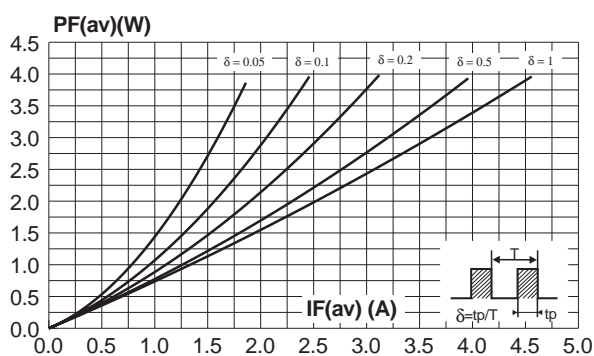
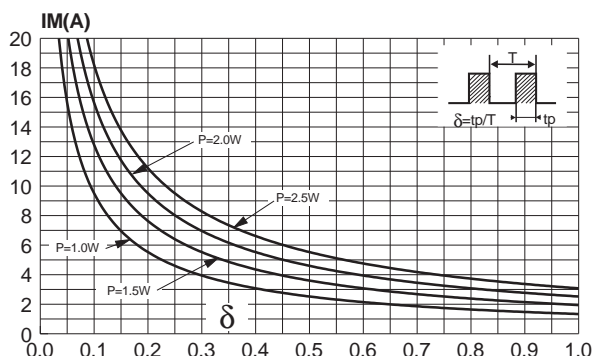
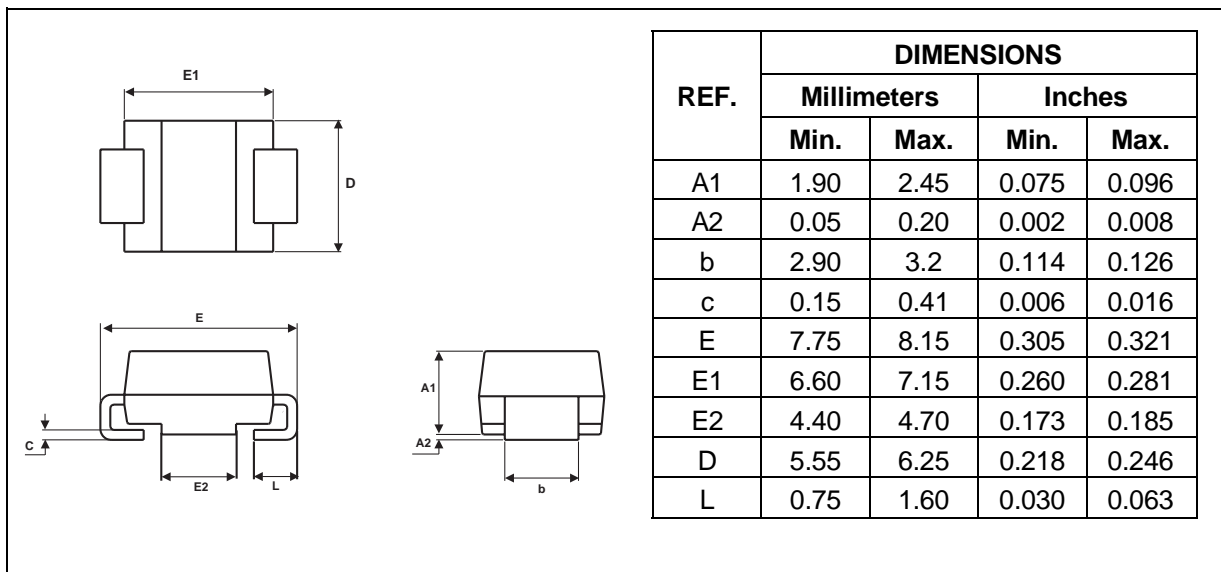


Fig. 2: Peak current versus form factor.

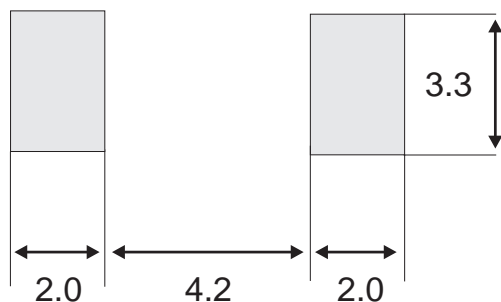


PACKAGE MECHANICAL DATA

SMC



FOOT PRINT (in millimeters)



Ordering code	Marking	Package	Weight	Base qty	Delivery mode
SMBYW04-200	D20	SMC	0.243g	2500	Tape and reel
BYW4200B	W4200	DPAK	0.30g	75	Tube
BYW4200B-RL	W4200	DPAK	0.30g	2500	Tape and reel

- Epoxy meets UL 94,V0
- Band indicates cathode