



# BYW4200B(-TR)

## HIGH EFFICIENCY FAST RECOVERY DIODE

### MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	4 A
$V_{RRM}$	200 V
$V_F(\max)$	0.85 V

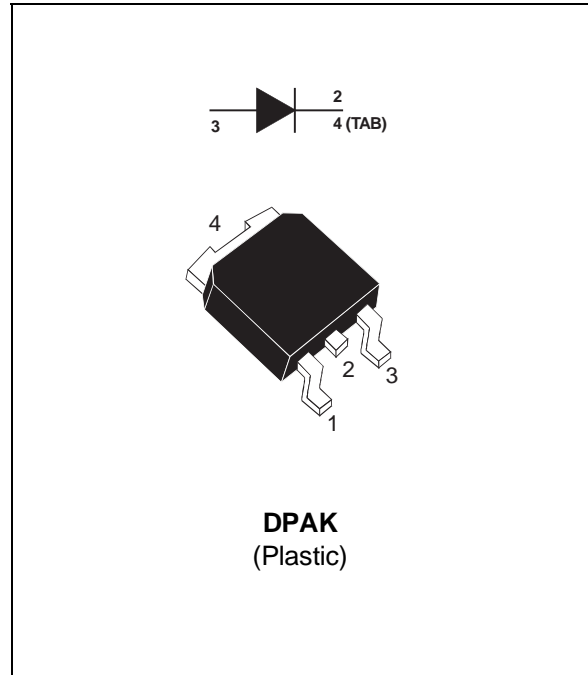
### FEATURES AND BENEFITS

- SUITED TO SMPS AND DRIVES
- SURFACE MOUNT PACKAGE
- VERY LOW FORWARD LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH SURGE CURRENT CAPABILITY
- TAPE AND REEL OPTION : -TR

### DESCRIPTION

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

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



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{RRM}$	Repetitive peak reverse voltage	200	V
$V_{RSM}$	Non repetitive surge reverse voltage	220	V
$I_{F(RMS)}$	RMS forward current	10	A
$I_{F(AV)}$	Average forward current	$T_{case} = 130^{\circ}C$ $\delta = 0.5$	A
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10\ ms$ Sinusoidal	A
Tstg	Storage temperature range	- 40 to + 150	$^{\circ}C$
$T_j$	Maximum junction temperature	150	$^{\circ}C$

## BYW4200B(-TR)

### THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	Junction to case	5	°C/W

### STATIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
I <sub>R</sub> *	Reverse leakage current	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>RRM</sub>		20	μA
		T <sub>j</sub> = 100°C		0.15	0.5	mA
V <sub>F</sub> **	Forward voltage drop	T <sub>j</sub> = 25°C	I <sub>F</sub> = 12 A		1.25	V
		T <sub>j</sub> = 100°C	I <sub>F</sub> = 4 A	0.8	0.85	

Pulse test : \* t<sub>p</sub> = 5 ms, δ < 2 %  
\*\* t<sub>p</sub> = 380 μs, δ < 2%

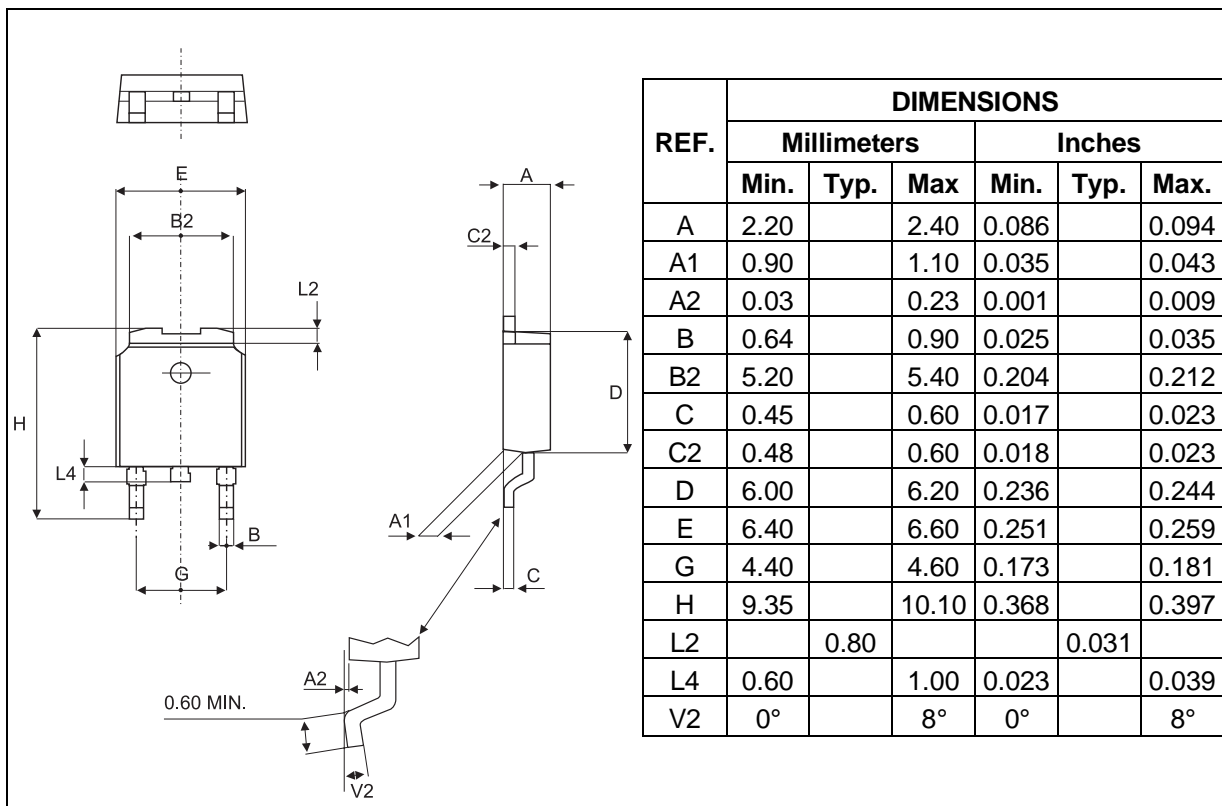
To evaluate the maximum conduction losses use the following equation :

$$P = 0.7 \times I_{F(AV)} + 0.030 I_{F(RMS)}^2$$

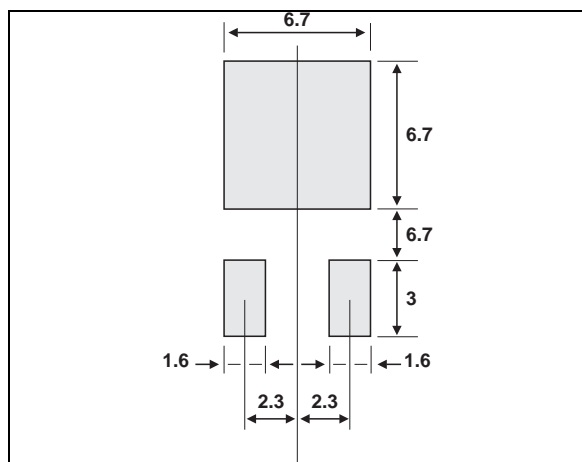
### RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t <sub>rr</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1A V <sub>F</sub> = 30V	dI <sub>F</sub> /dt = -50 A/μs		30	35	ns
t <sub>fr</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1A V <sub>FR</sub> = 1.1 x V <sub>F</sub>	t <sub>r</sub> = 10 ns		20		ns
V <sub>FP</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1A	t <sub>r</sub> = 10 ns		5		V

**PACKAGE MECHANICAL DATA**  
DPAK



**FOOT PRINT (in millimeters)**



Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics  
© 1998 STMicroelectronics - Printed in Italy - All rights reserved.

STMicroelectronics GROUP OF COMPANIES  
Australia - Brazil - Canada - China - France - Germany - Italy - Japan - Korea - Malaysia - Malta - Mexico - Morocco -  
The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.

