SGS-THOMSON MICROELECTRONICS

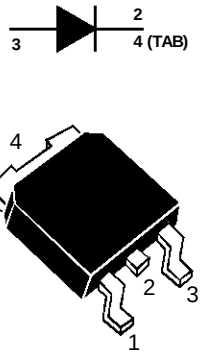
BYW4200B(-TR)

HIGH EFFICIENCY FAST RECOVERY DIODES

MAIN PRODUCT CHARACTERISTICS

PRELIMINARY DATASHEET

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



DPAK
(Plastic)

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	Tcase = 130°C δ = 0.5	4	A
I_{FSM}	Surge Non Repetitive Forward Current	tp = 10 ms Sinusoidal	70	A
Tstg	Storage Temperature Range		- 40 to + 150	°C
Tj	Max. Junction Temperature		150	°C

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{TH\ (j-c)}$	Junction to Case Thermal Resistance	5	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions	Tests Conditions		Min.	Typ.	Max.	Unit
I_R *	Reverse leakage Current	Tj = 25°C	$V_R = V_{RRM}$			20	µA
		Tj = 100°C			0.15	0.5	mA
V_F **	Forward Voltage drop	Tj = 25°C	I_F = 12 A			1.25	V
		Tj = 100°C	I_F = 4 A		0.8	0.85	

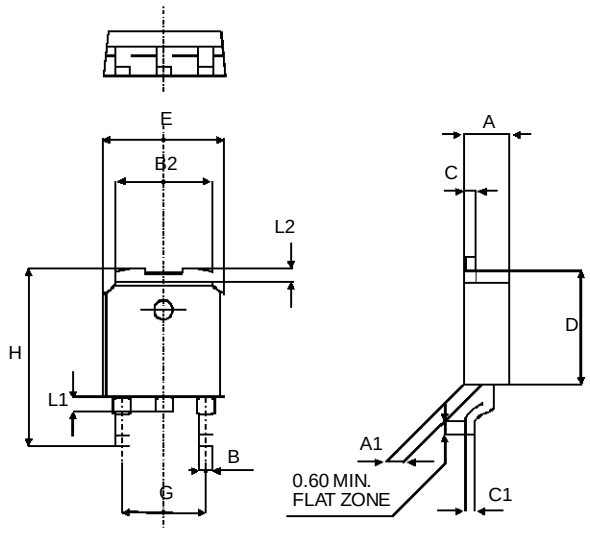
Pulse test : * tp = 5 ms, duty cycle < 2 %
** tp = 380 µs, duty cycle < 2%

To evaluate the maximum conduction losses use the following equation :
$P = 0.7 \times I_{F(AV)} + 0.030\ I_F{}^2{}_{(RMS)}$

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	Tj = 25°C	I_F = 1A V_F = 30V	dI_F/dt = -50 A/µs		30	35	ns
t_{fr}	Tj = 25°C	I_F = 1A $V_{FR} = 1.1 \times V_F$	tr = 10 ns		20		ns
V_{FP}	Tj = 25°C	I_F = 1A	tr = 10 ns		5		V

PACKAGE MECHANICAL DATA
DPAK



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.094
A1	0.90		1.10	0.035		0.043
B	0.64		0.90	0.025		0.035
B2	5.20		5.40	0.204		0.212
C	0.45		0.60	0.017		0.023
C1	0.48		0.60	0.018		0.023
D	6.00		6.20	0.236		0.244
E	6.40		6.60	0.251		0.259
G	4.40		4.60	0.173		0.181
H	9.35		10.10	0.368		0.397
L1	0.60		1.00	0.023		0.039
L2		0.80			0.031	