



STPR1020CB(-TR)

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

MAIN PRODUCT CHARACTERISTICS

$I_F(AV)$	2 x 5 A
V_{RRM}	200 V
$t_{rr}(max)$	35 ns

FEATURES AND BENEFITS

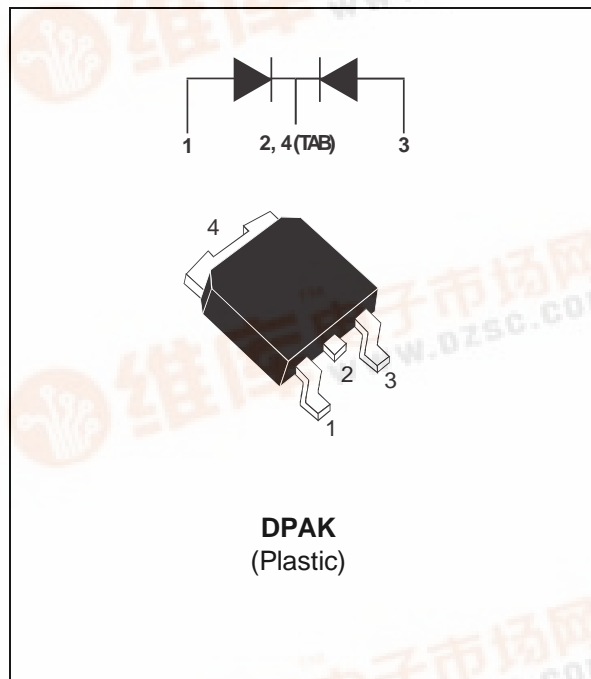
- SUITED FOR SMPS AND DRIVES
- SURFACE MOUNT
- VERY LOW FORWARD LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- HIGH SURGE CURRENT CAPABILITY
- SURFACE MOUNT DEVICE
- TAPE AND REEL OPTION : -TR

DESCRIPTION

Dual rectifier suited for Switch Mode and high frequency converters.

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

PRELIMINARY DATASHEET



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	Per diode	10	A
$I_F(AV)$	Average Forward Current $T_{case} = 130^{\circ}C$ $\delta = 0.5$	Per diode Per device	5 10	A
I_{FSM}	Surge Non Repetitive Forward Current $t_p = 10$ ms Sinusoidal	Per diode	70	A
T_{stg}	Storage Temperature Range		- 40 to + 150	$^{\circ}C$
T_j	Max. Junction Temperature		150	$^{\circ}C$

STPR1020CB(-TR)

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	Junction to Case Thermal Resistance	Per diode	5	°C/W
		Total	2.7	
R _{th(c)}	Coupling			°C/W

When the diodes 1 and 2 are used simultaneously :

$$\Delta T_j(\text{diode 1}) = P(\text{diode}) \times R_{th}(\text{per diode}) + P(\text{diode 2}) \times R_{th(c)}$$

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Tests Conditions	Tests Conditions		Min.	Typ.	Max.	Unit
I _R *	Reverse leakage Current	T _j = 25°C	V _R = V _{RRM}			20	μA
		T _j = 100°C			0.15	0.5	mA
V _F **	Forward Voltage drop	T _j = 25°C	I _F = 10 A			1.25	V
		T _j = 100°C	I _F = 5 A		0.8	0.85	

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

** tp = 380 μs, duty cycle < 2%

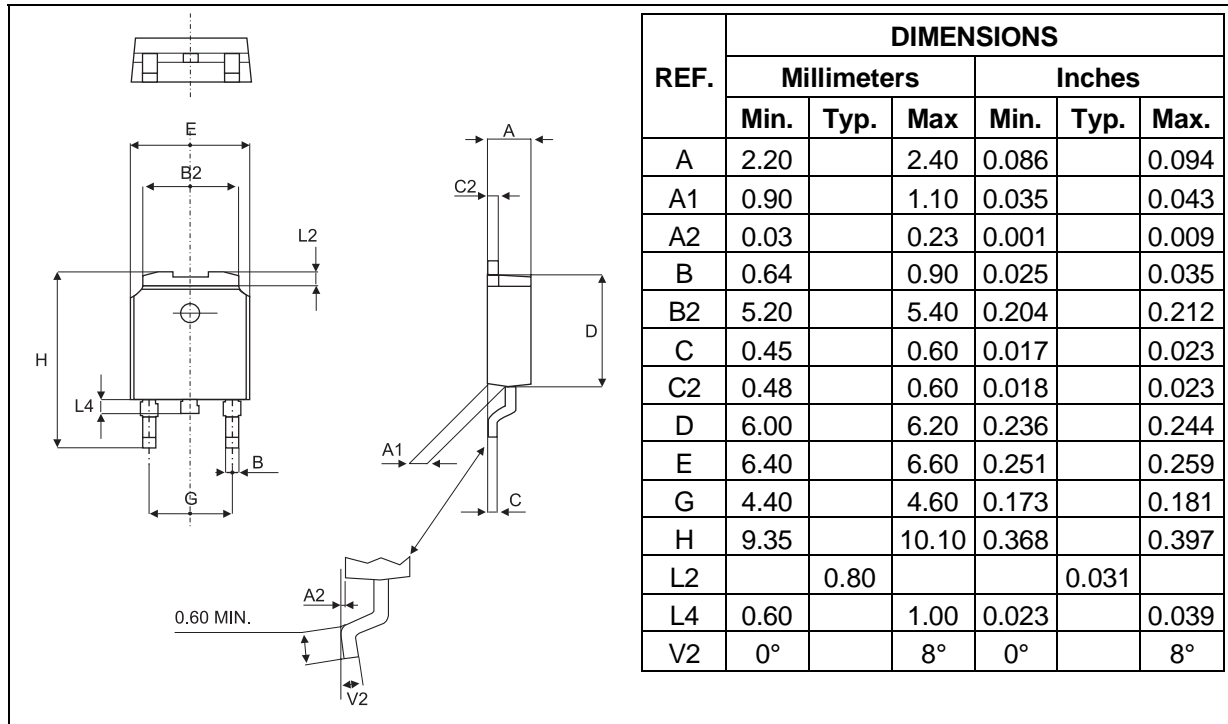
To evaluate the maximum conduction losses use the following equation :

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

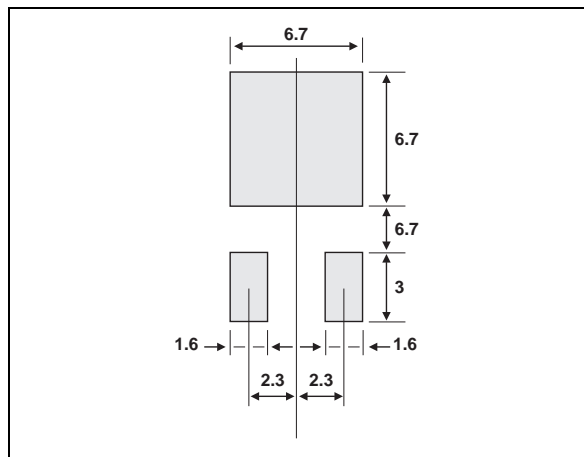
RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t _{rr}	T _j = 25°C	I _F = 1A V _F = 30V	dI _F /dt = -50 A/ms			35	ns
t _{fr}	T _j = 25°C	I _F = 1A V _{FR} = 1.1 x V _F	tr = 10 ns		20		ns
V _{FP}	T _j = 25°C	I _F = 1A	tr = 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

© 1999 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.

<http://www.st.com>