



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

PRELIMINARY DATASHEET

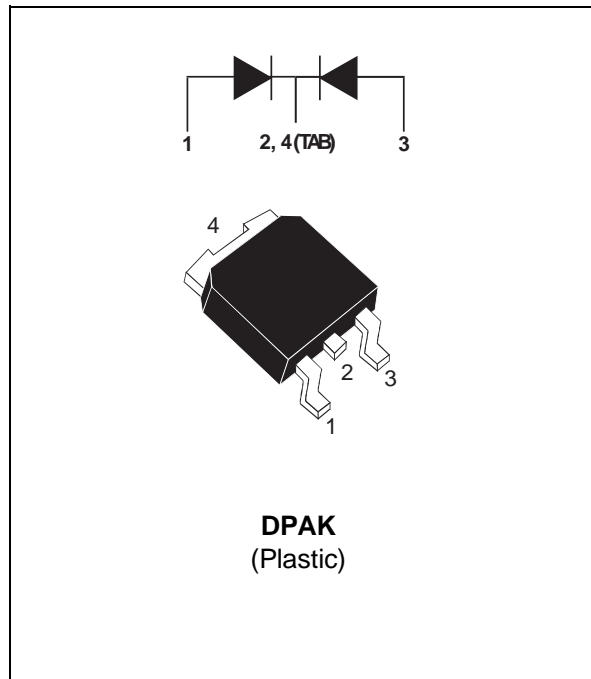
FEATURES AND BENEFITS

- 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.



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 5 Per device 10	A
I_{FSM}	Surge Non Repetitive Forward Current $t_p = 10$ ms Sinusoidal	Per diode 70	A
Tstg	Storage Temperature Range	- 40 to + 150	$^{\circ}C$
T_j	Max. Junction Temperature	150	$^{\circ}C$

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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	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			20	μA
		$T_j = 100^\circ\text{C}$			0.15	0.5	mA
V_F^{**}	Forward Voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 10\text{ A}$			1.25	V
		$T_j = 100^\circ\text{C}$	$I_F = 5\text{ A}$		0.8	0.85	

Pulse test : * $t_p = 5\text{ ms}$, duty cycle $< 2\%$

** $t_p = 380\text{ }\mu\text{s}$, duty cycle $< 2\%$

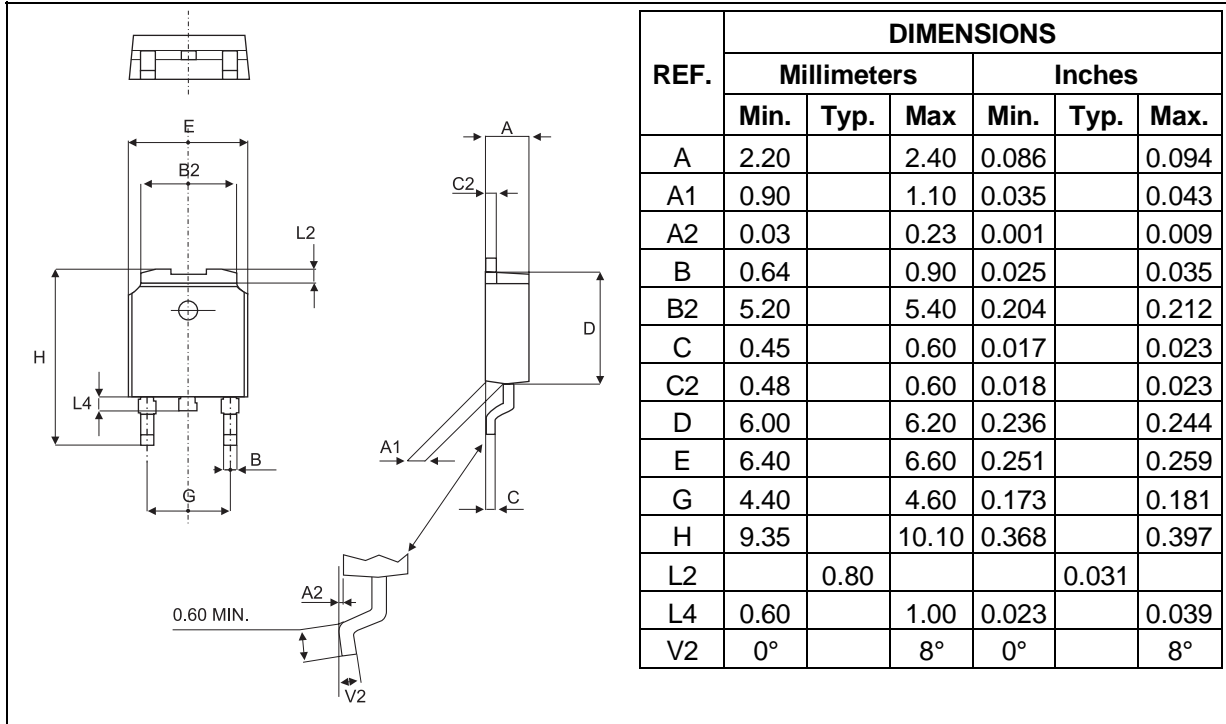
To evaluate the maximum conduction losses use the following equation :

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

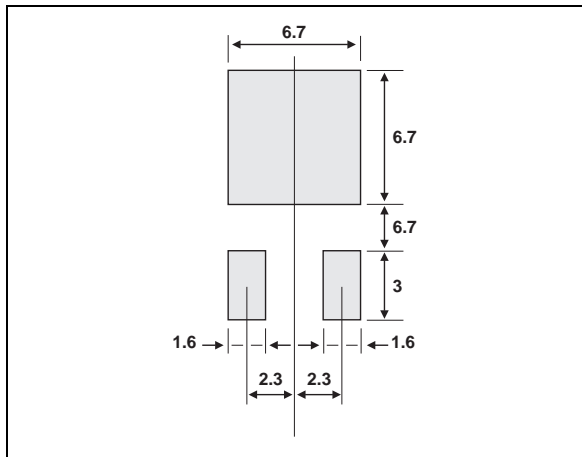
RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25^\circ\text{C}$	$I_F = 1\text{ A}$ $V_F = 30\text{ V}$	$di_F/dt = -50\text{ A/ms}$			35	ns
t_{fr}	$T_j = 25^\circ\text{C}$	$I_F = 1\text{ A}$ $V_{FR} = 1.1 \times V_F$	$t_r = 10\text{ ns}$		20		ns
V_{FP}	$T_j = 25^\circ\text{C}$	$I_F = 1\text{ A}$	$t_r = 10\text{ ns}$		5		V

PACKAGE MECHANICAL DATA
DPAK



FOOT PRINT in millimeters



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