

POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	2 x 10 A
V_{RRM}	60 V
V_F (max)	0.58 V

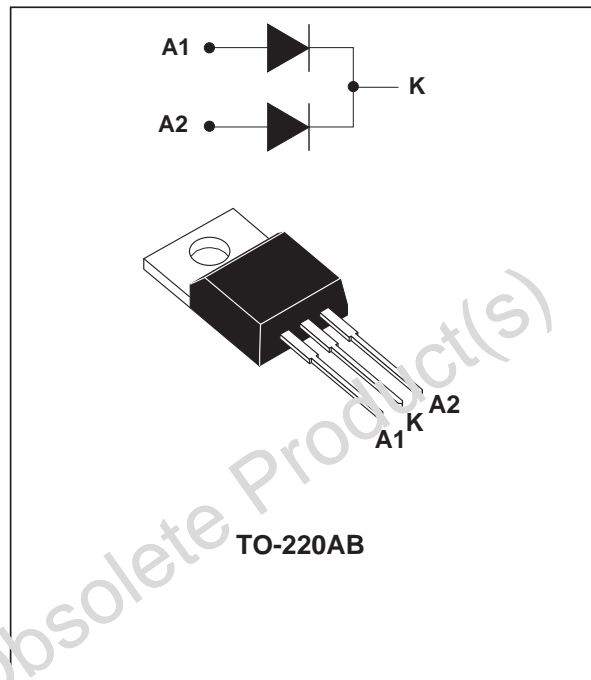
FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD DROP VOLTAGE
- LOW CAPACITANCE
- HIGH REVERSE AVALANCHE SURGE CAPABILITY

DESCRIPTION

High voltage dual Schottky rectifier suited to Switch Mode Power Supplies and other Power Converters.

Packaged in TO-220AB, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses are required.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive peak reverse voltage	60	V
$I_{F(RMS)}$	RMS forward current	Per diode 30	A
$I_{F(AV)}$	Average forward current	$T_{case} = 120^{\circ}C$ Per diode $V_R = 60V$ Per device $\delta = 0.5$ 10 20	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10$ ms Sinusoidal Per diode	200 A
I_{RRM}	Repetitive peak reverse current	$t_p = 2$ μs $F = 1$ kHz Per diode	1 A
I_{RSM}	Non repetitive peak reverse current	$t_p = 100$ μs Per diode	1 A
T_{stg}	Storage temperature range	- 65 to + 150	$^{\circ}C$
T_j	Maximum junction temperature	150	$^{\circ}C$
dV/dt	Critical rate of rise of reverse voltage	10000	V/ μs

STPS2060CT

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode	1.6	°C/W
		Total	0.9	
$R_{th(c)}$		Coupling	0.15	°C/W

When the diodes 1 and 2 are used simultaneously :

$$T_j - T_c(\text{diode 1}) = P(\text{diode 1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$$

ELECTRICAL STATIC CHARACTERISTICS (per diode)

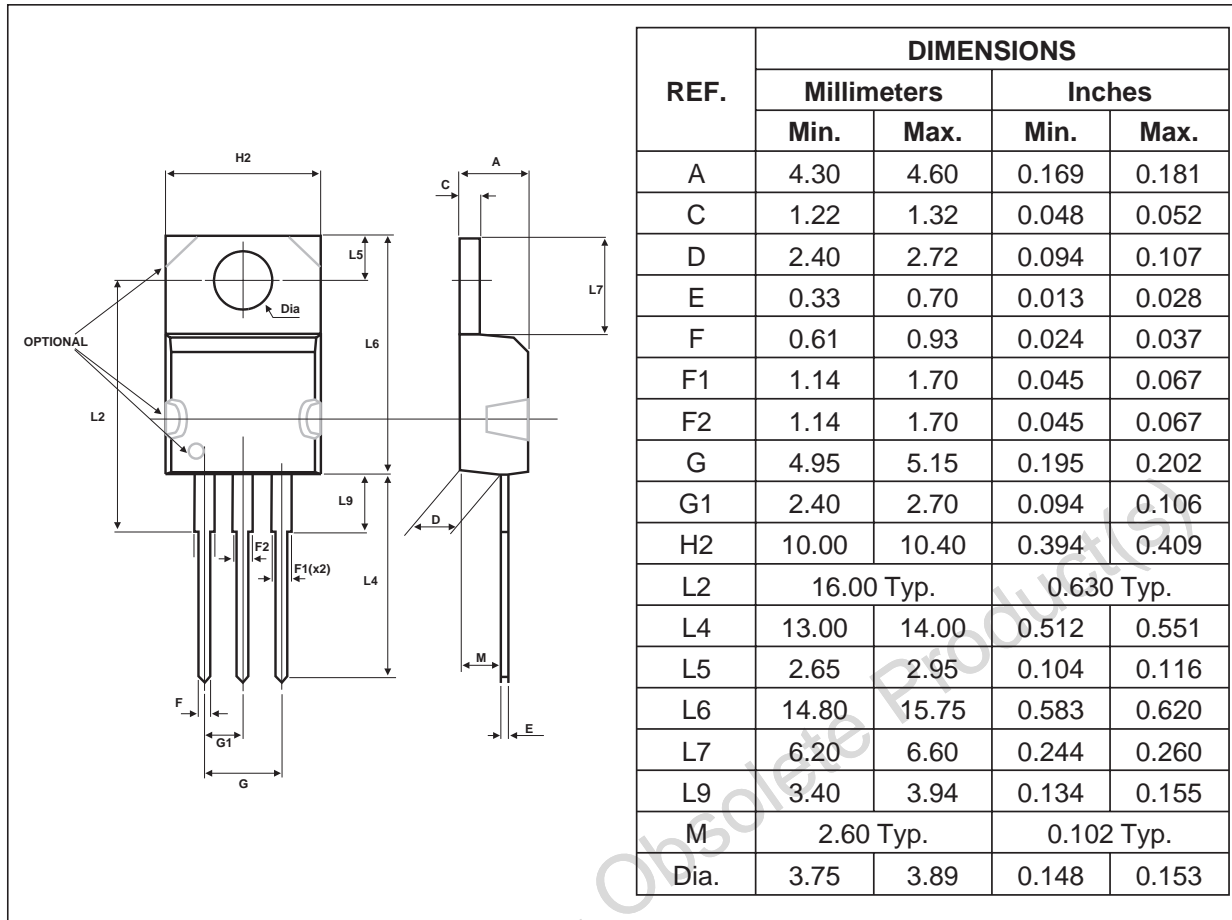
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$			70	μA
			$T_j = 125^\circ\text{C}$			33	mA
V_F^{**}	Forward voltage drop	$I_F = 20\text{ A}$	$T_j = 125^\circ\text{C}$			0.8	V
		$I_F = 10\text{ A}$	$T_j = 125^\circ\text{C}$		0.58	0.67	
		$I_F = 20\text{ A}$	$T_j = 25^\circ\text{C}$			0.94	
C	Capacitance	60 V, 1MHz	$T_j = 125^\circ\text{C}$		150		pF

Pulse test : * $t_p = 5\text{ ms}$, duty cycle < 2 %
** $t_p = 380\text{ }\mu\text{s}$, duty cycle < 2 %

To evaluate the conduction losses use the following equation :

$$P = 0.54 \times I_F(\text{AV}) + 0.013 \times I_F^2(\text{RMS})$$

PACKAGE MECHANICAL DATA
TO-220AB



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

© 2002 STMicroelectronics - Printed in Italy - All rights reserved.

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany
Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore
Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>

