



STPS3060CW

POWER SCHOTTKY RECTIFIER

MAJOR PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	2 x15 A
V_{RRM}	60 V
$V_F(max)$	0.65 V

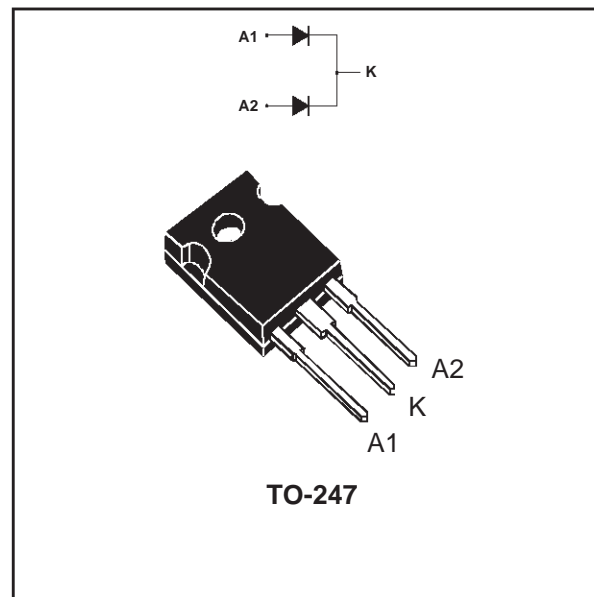
FEATURES AND BENEFITS

- HIGH REVERSE VOLTAGE
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- LOW THERMAL RESISTANCE

DESCRIPTION

Dual center tap schottky rectifier suited for switchmode power supply and high frequency DC to DC converters.

Packaged in TO-247 this device is intended for use in high frequency inverters.



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	$T_c = 125^\circ\text{C}$ $\delta = 0.5$ Per diode Per device	15 30	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10\text{ ms}$ Sinusoidal Per diode	200	A
I_{RRM}	Peak repetitive reverse current	$t_p = 2\ \mu\text{s}$ $F = 1\text{ kHz}$ Per diode	1	A
T_{stg}	Storage temperature range		- 65 to + 150	$^\circ\text{C}$
T_j	Maximum junction temperature		150	
dV/dt	Critical rate of rise reverse voltage		10000	V/ μs

STPS3060CW

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode	1.6
		total	0.9
$R_{th(c)}$	Coupling	0.15	$^{\circ}\text{C}/\text{W}$

When the diodes 1 and 2 are used simultaneously :
 $\Delta T_{j(\text{diode } 1)} = P(\text{diode } 1) \times R_{th(\text{Per diode})} + P(\text{diode } 2) \times R_{th(c)}$

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS PER DIODE

Symbol	Parameter	Tests Conditions	Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 25^{\circ}\text{C}$			30	μA
		$T_j = 125^{\circ}\text{C}$		5	25	mA
V_F^{**}	Forward voltage drop	$T_j = 25^{\circ}\text{C}$			0.96	V
		$T_j = 125^{\circ}\text{C}$			0.8	
		$T_j = 125^{\circ}\text{C}$		0.58	0.65	

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

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

To evaluate the conduction losses use the following equation :

$$P = 0.56 \times I_{F(AV)} + 0.0113 I_{F(RMS)}^2$$

Fig. 1: Average forward power dissipation versus average forward current (per diode).

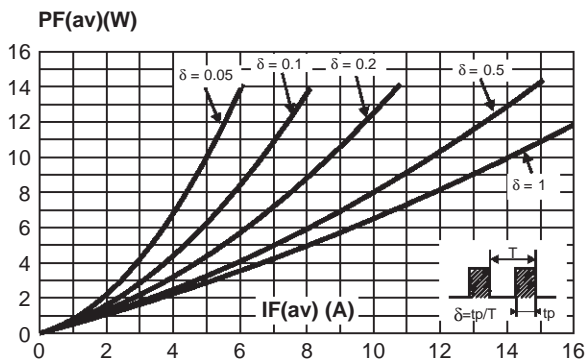


Fig. 2: Average current versus ambient temperature ($\delta = 0.5$) (per diode).

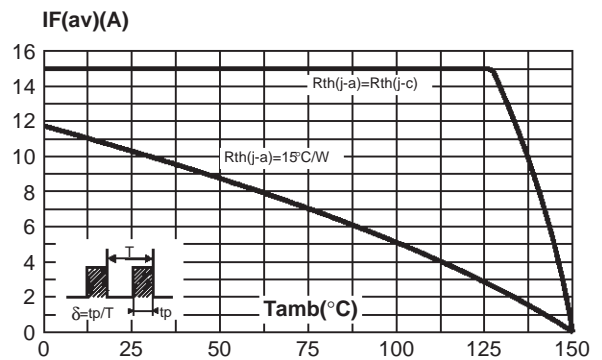


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values) (per diode).

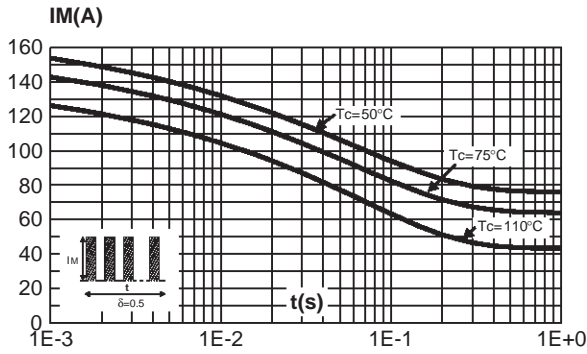


Fig. 4: Relative variation of thermal transient impedance junction to case versus pulse duration (per diode).

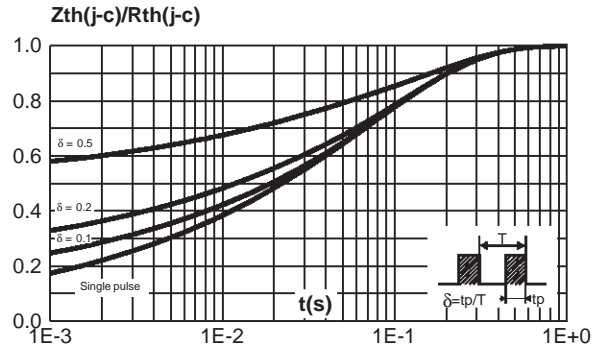


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values) (per diode).

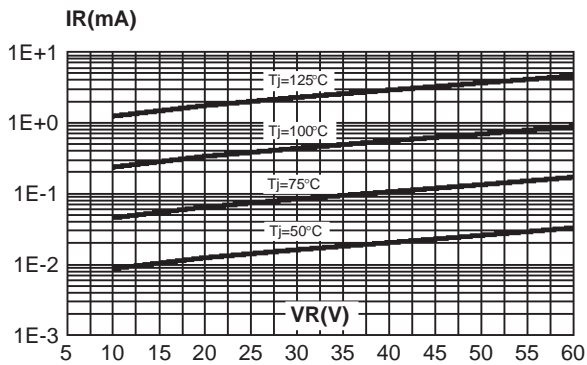


Fig. 6: Junction capacitance versus reverse voltage applied (typical values) (per diode).

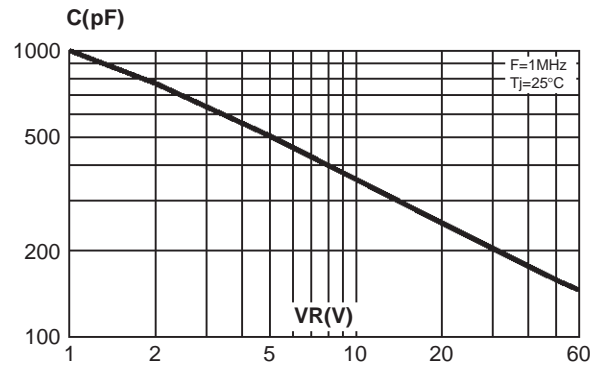
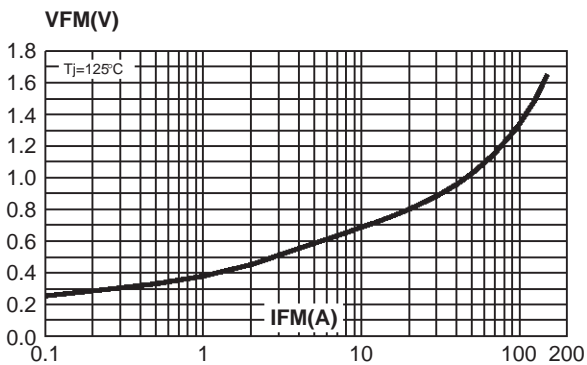
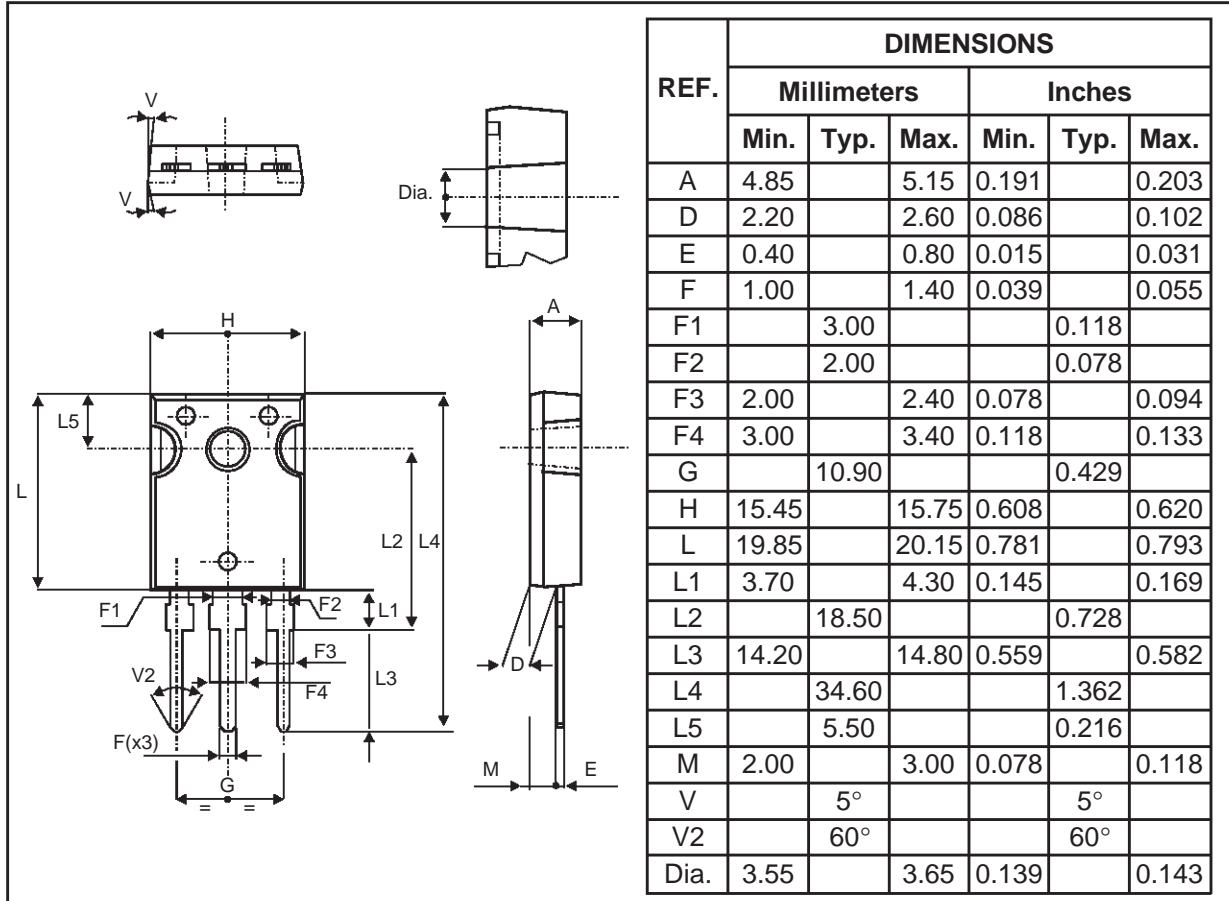


Fig. 7: Forward voltage drop versus forward current (maximum values) (per diode).



STPS3060CW

PACKAGE MECHANICAL DATA TO247



- **Marking:** STPS3060CW
Cooling method : C
Weight : 4.4 g
Recommended torque value : 0.8m.N
Maximum torque value : 1.0m.N

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.