

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[STMicroelectronics](#)

[STPS60L40CW](#)

For any questions, you can email us directly:

sales@integrated-circuit.com



STPS60L40CW

LOW DROP POWER SCHOTTKY RECTIFIER

MAIN PRODUCTS CHARACTERISTICS

I_{F(AV)}	2 x 30 A
V_{RRM}	40 V
T_j (max)	150°C
V_F (max)	0.50 V

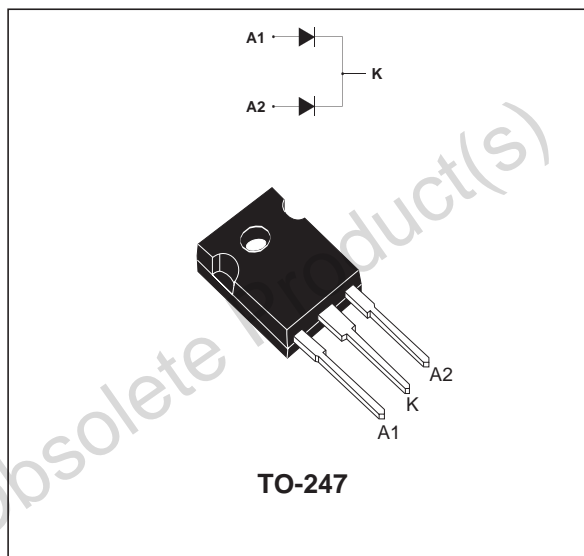
FEATURES AND BENEFITS

- LOW FORWARD VOLTAGE DROP FOR LESS POWER DISSIPATION
- NEGLIGIBLE SWITCHING LOSSES ALLOWING HIGH FREQUENCY OPERATION
- AVALANCHE CAPABILITY SPECIFIED

DESCRIPTION

Dual center tap Schottky barrier rectifier designed for high frequency Switched Mode Power Supplies and DC to DC converters.

Packaged in TO-247 this device is intended for use in low voltage, high frequency inverters, free-wheeling and polarity protection applications.



ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter		Value	Unit	
V _{RRM}	Repetitive peak reverse voltage		40	V	
I _{F(RMS)}	RMS forward current		50	A	
I _{F(AV)}	Average forward current	T _c = 135°C δ = 0.5	Per diode	30	A
			Per device	60	
I _{FSM}	Surge non repetitive forward current	tp = 10 ms Sinusoidal	600	A	
I _{R(RM)}	Repetitive peak reverse current	tp = 2 μs square F=1kHz	2	A	
I _{R(SM)}	Non repetitive peak reverse current	tp = 100 μs square	4	A	
P _{ARM}	Repetitive peak avalanche power	tp = 1 μs T _j = 25°C	12300	W	
T _{stg}	Storage temperature range		- 65 to + 150	°C	
T _j	Maximum operating junction temperature *		150	°C	
dV/dt	Critical rate of rise of reverse voltage		10000	V/μs	

* : $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th}(j - a)}$ thermal runaway condition for a diode on its own heatsink

STPS60L40CW

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction to case	Per diode	0.75
		Total	0.42
R _{th(c)}	Coupling	0.1	°C/W

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

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests Conditions	Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	T _j = 25°C	V _R = V _{RRM}		1.5	mA
		T _j = 100°C		30	110	mA
V _F *	Forward voltage drop	T _j = 25°C	I _F = 30 A		0.55	V
		T _j = 125°C	I _F = 30 A	0.44	0.5	
		T _j = 25°C	I _F = 60 A		0.73	
		T _j = 125°C	I _F = 60 A	0.64	0.72	

Pulse test : * tp = 380 μs, δ < 2%

To evaluate the maximum conduction losses use the following equation :
 $P = 0.28 \times I_{F(AV)} + 0.0073 I_{F(RMS)}^2$

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

Fig. 2: Average current versus ambient temperature (δ = 0.5) (per diode).

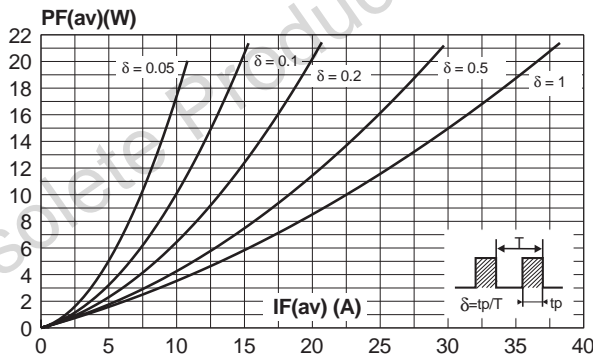


Fig. 3: Normalized avalanche power derating versus pulse duration.

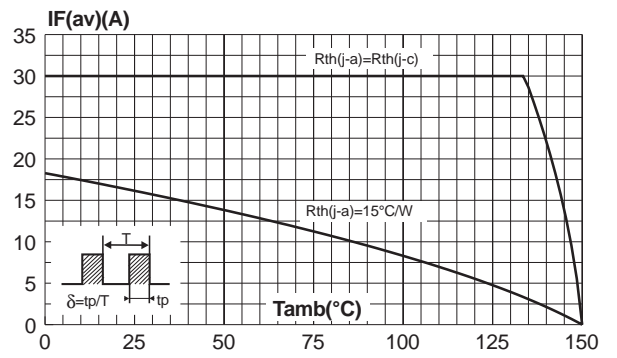
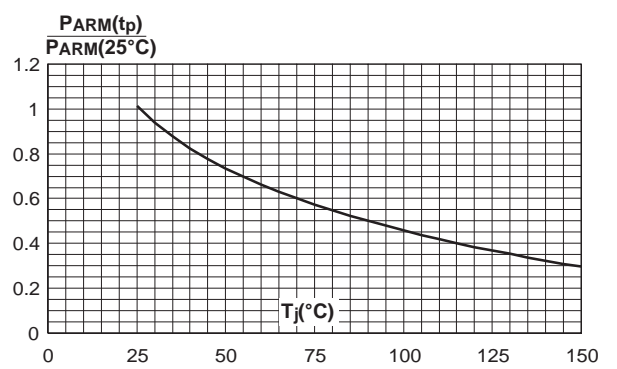
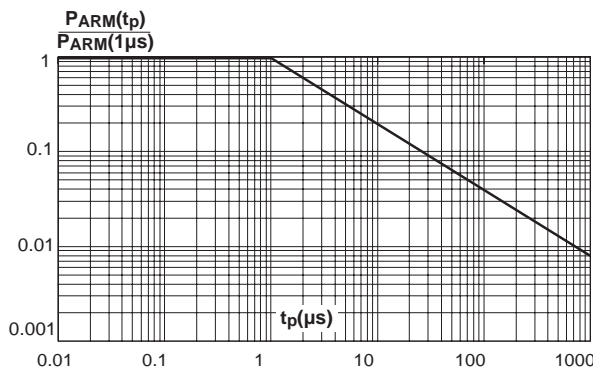


Fig. 4: Normalized avalanche power derating versus junction temperature.



STPS60L40CW

Fig. 5: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

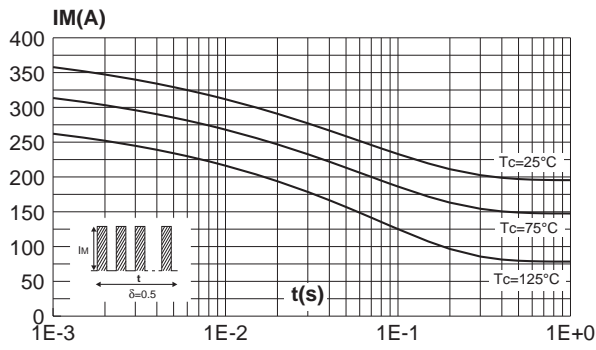


Fig. 6: Relative variation of thermal impedance junction to case versus pulse duration.

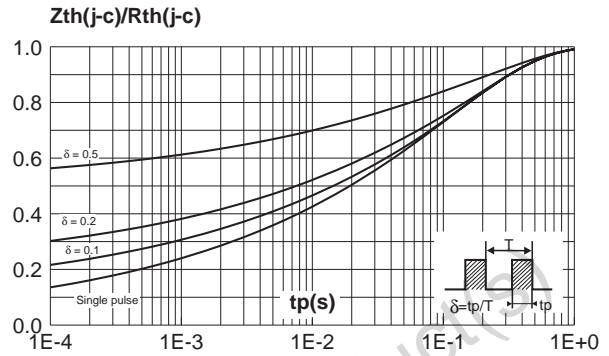


Fig. 7: Reverse leakage current versus reverse voltage applied (typical values, per diode).

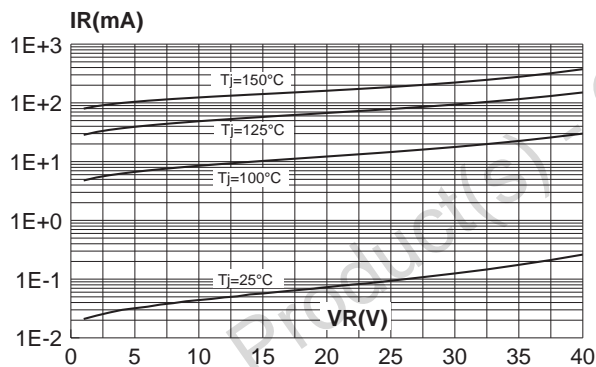


Fig. 8: Junction capacitance versus reverse voltage applied (typical values, per diode).

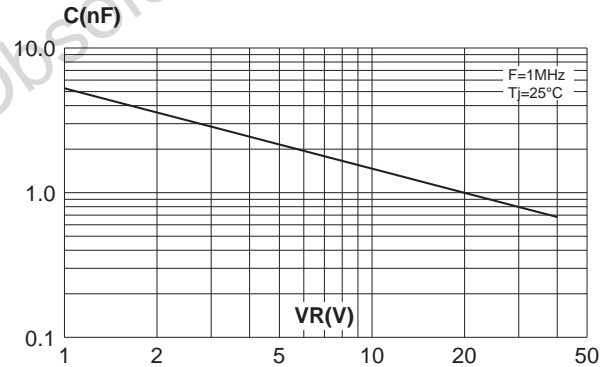
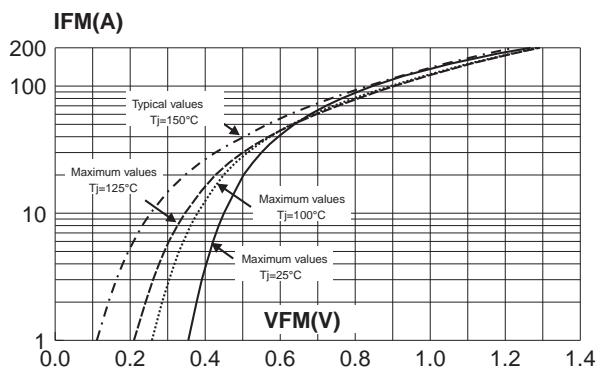


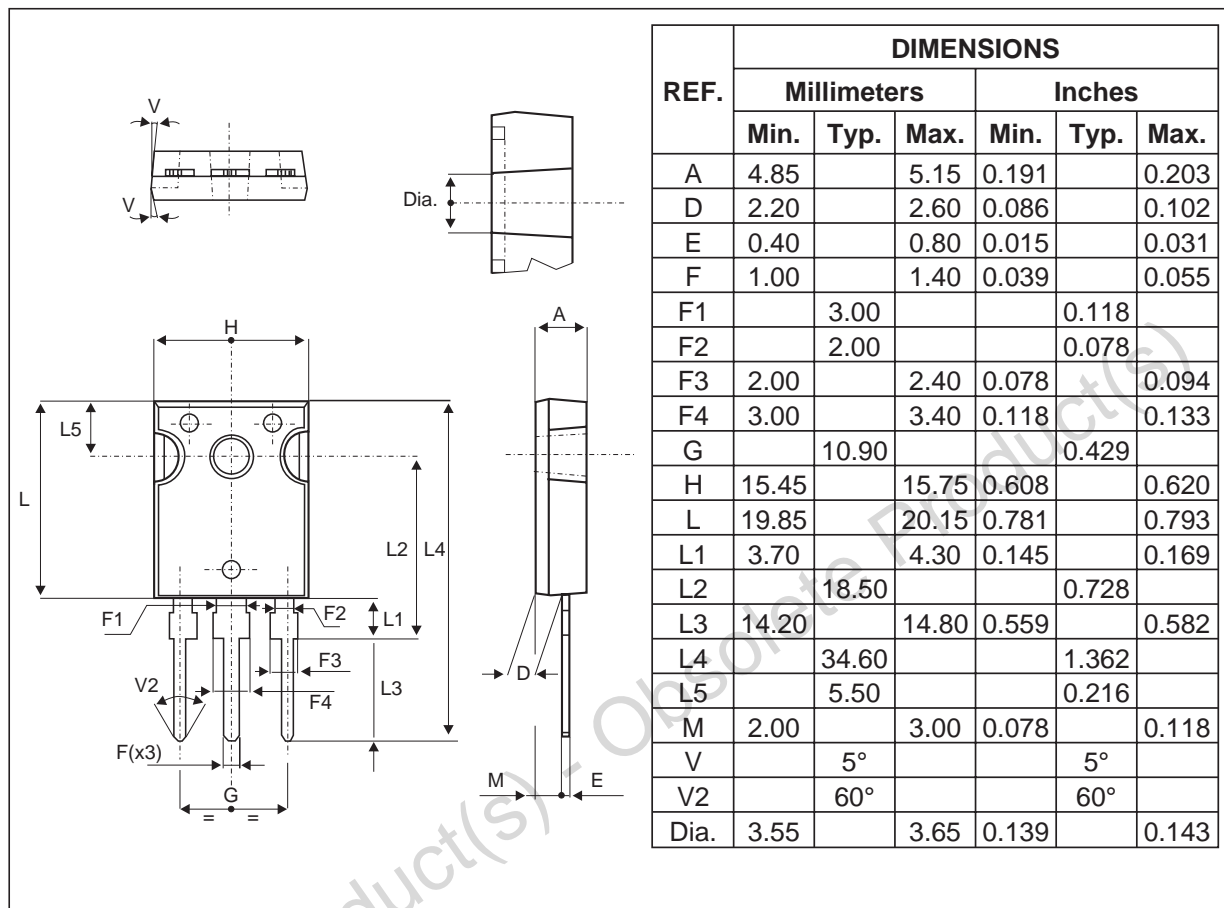
Fig. 9: Forward voltage drop versus forward current (per diode).



STPS60L40CW

PACKAGE MECHANICAL DATA

TO-247



- COOLING METHOD : C
- RECOMMENDED TORQUE VALUE : 0.8M.N
- MAXIMUM TORQUE VALUE : 1.0M.N

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS60L40CW	STPS60L40CW	TO-247	4.4g	30	Tube

- EPOXY MEETS UL94,V0

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

© 2003 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>