



## HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

<b>I<sub>F(AV)</sub></b>	<b>2 x 15 A</b>
<b>V<sub>RRM</sub></b>	<b>60 V</b>
<b>T<sub>j</sub> (max)</b>	<b>150°C</b>
<b>V<sub>F</sub> (max)</b>	<b>0.75 V</b>

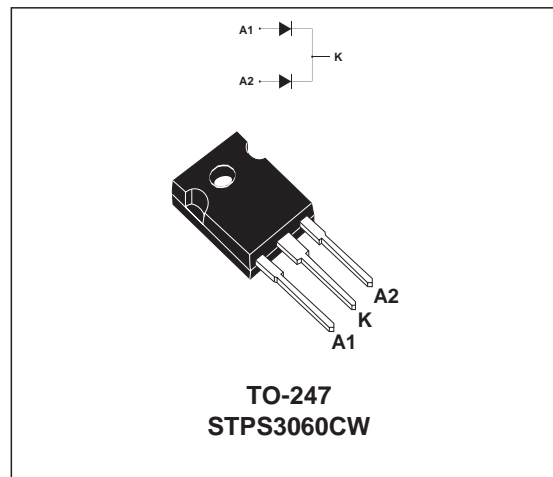
### FEATURES AND BENEFITS

- Negligible switching losses
- Low forward voltage drop
- Low capacitance
- High reverse avalanche surge capability.

### DESCRIPTION

High voltage dual Schottky rectifier suited for switchmode power supplies and other power converters.

Packaged in TO-247, this device is intended for use in medium voltage operation, and particularly, in high frequency circuitries where low switching losses and low noise are required.



### ABSOLUTE RATINGS (limiting values, per diode)

Symbol	Parameter		Value	Unit
V <sub>RRM</sub>	Repetitive peak reverse voltage		60	V
I <sub>F(RMS)</sub>	RMS forward current	Per diode	30	A
I <sub>F(AV)</sub>	Average forward current $\delta = 0.5$	T <sub>c</sub> = 130°C Per diode Per device	15 30	A
I <sub>FSM</sub>	Surge non repetitive forward current	t <sub>p</sub> = 10 ms Sinusoidal Per diode	200	A
I <sub>RRM</sub>	Repetitive peak reverse current	t <sub>p</sub> = 2 $\mu$ s F = 1kHz Per diode	1	A
I <sub>RSM</sub>	Non repetitive peak reverse current	t <sub>p</sub> = 100 $\mu$ s Per diode	1	A
T <sub>stg</sub>	Storage temperature range		- 65 to + 150	°C
T <sub>j</sub>	Maximum operating junction temperature *		150	°C
dV/dt	Critical rate of rise of reverse voltage		1000	V/ $\mu$ s

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

**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
R <sub>th(j-c)</sub>	Junction to case	Per diode	1.5	°C/W
		Total	0.8	
R <sub>th(c)</sub>		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 <sub>R</sub> *	Reverse leakage current	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>RRM</sub>			150	μA
		T <sub>j</sub> = 125°C				100	mA
V <sub>F</sub> *	Forward voltage drop	T <sub>j</sub> = 25°C	I <sub>F</sub> = 15 A			0.85	V
		T <sub>j</sub> = 125°C	I <sub>F</sub> = 15 A		0.65	0.75	
		T <sub>j</sub> = 25°C	I <sub>F</sub> = 30 A			1.05	
		T <sub>j</sub> = 125°C	I <sub>F</sub> = 30 A		0.80	0.90	

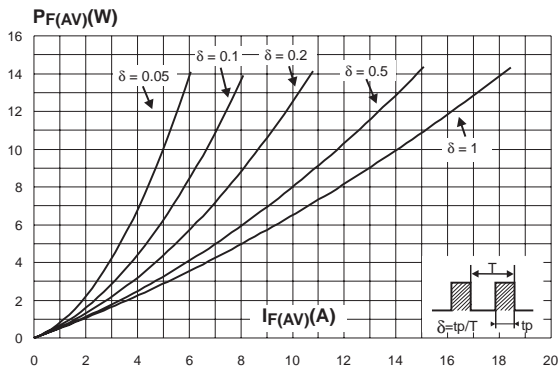
Pulse test: \* t<sub>p</sub> = 5ms, δ < 2%

\*\*t<sub>p</sub> = 380μs, δ < 2%

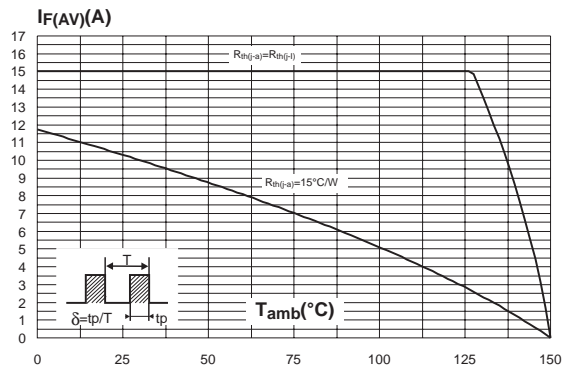
To evaluate the maximum conduction losses use the following equation :

$$P = 0.6 \times I_{F(AV)} + 0.01 I_{F(RMS)}^2$$

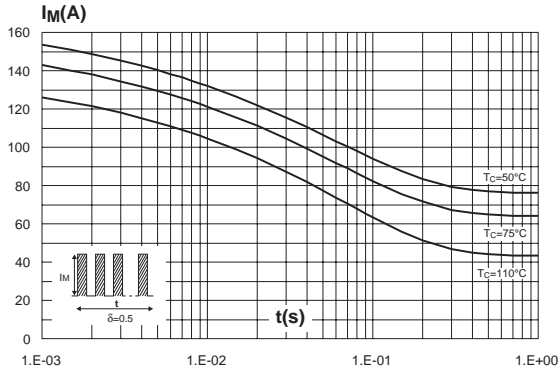
**Fig. 1:** Conduction losses versus average current (per diode).



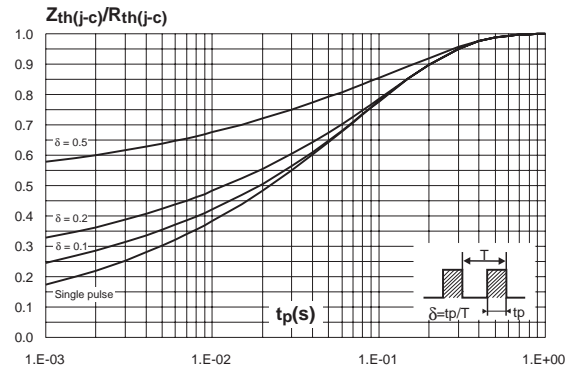
**Fig. 2:** Average forward current versus ambient temperature (δ=0.5, per diode).



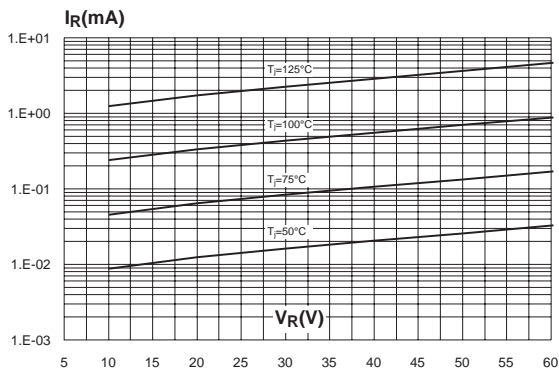
**Fig. 3:** Non repetitive surge peak forward current versus overload duration (maximum values, per diode).



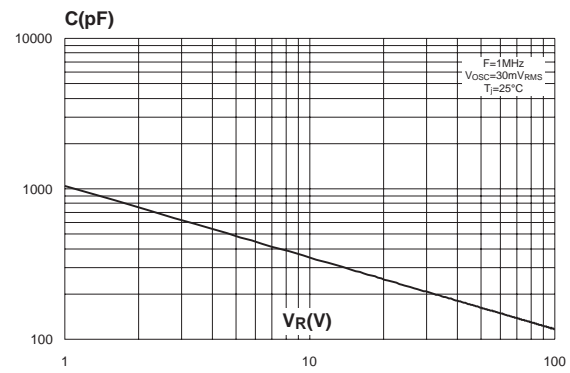
**Fig. 4:** Relative variation of thermal impedance junction to case versus pulse duration.



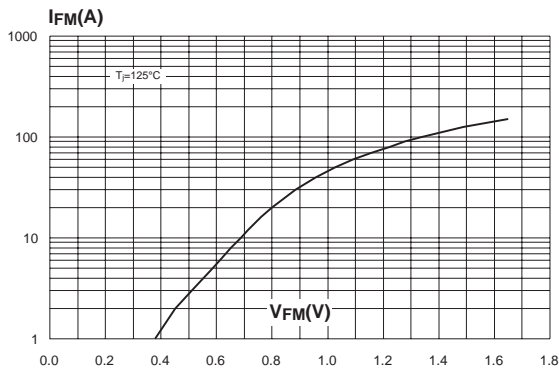
**Fig. 5:** Reverse leakage current versus reverse voltage applied (typical values, per diode).



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



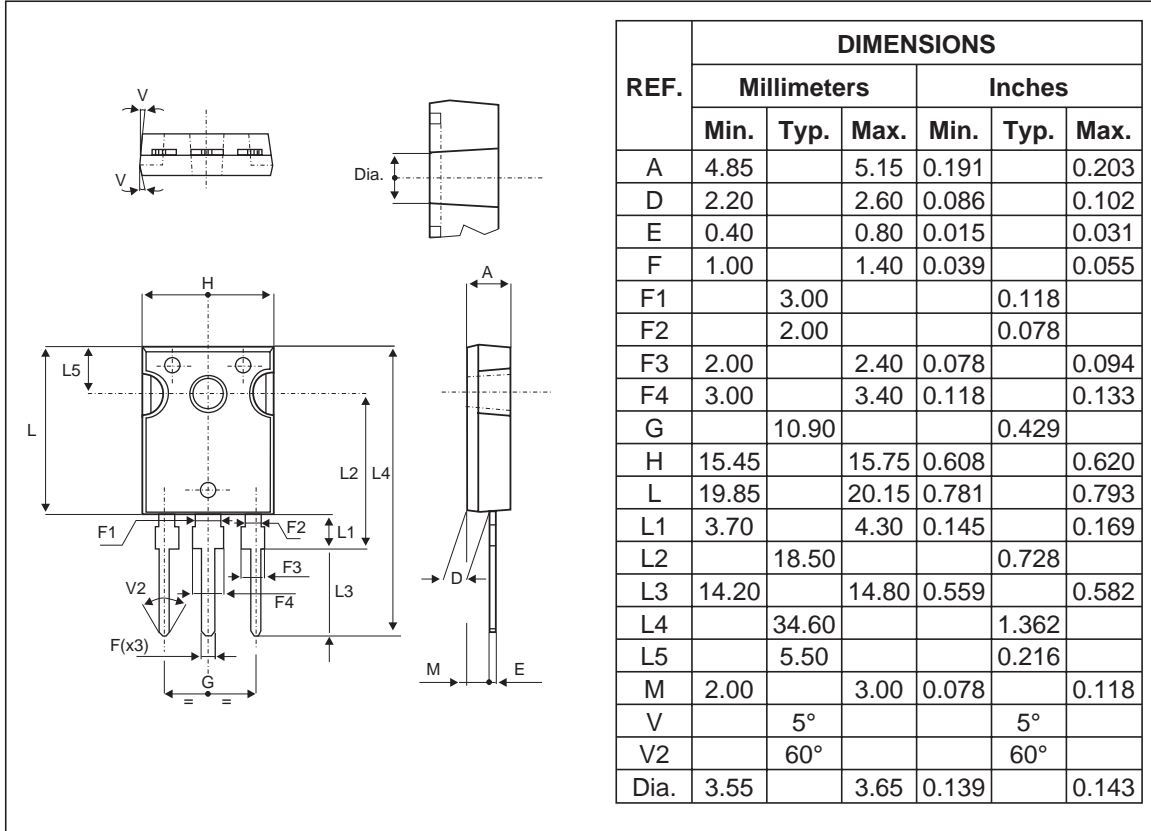
**Fig. 7:** Forward voltage drop versus forward current (maximum values, per diode).



# STPS3060CW

## PACKAGE MECHANICAL DATA

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
STPS3060CW	STPS3060CW	TO-247	4.4 g	50	Tube

- Epoxy meets UL94,V0

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