



STPS3060CW

POWER SCHOTTKY RECTIFIER

MAJOR PRODUCTS CHARACTERISTICS

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

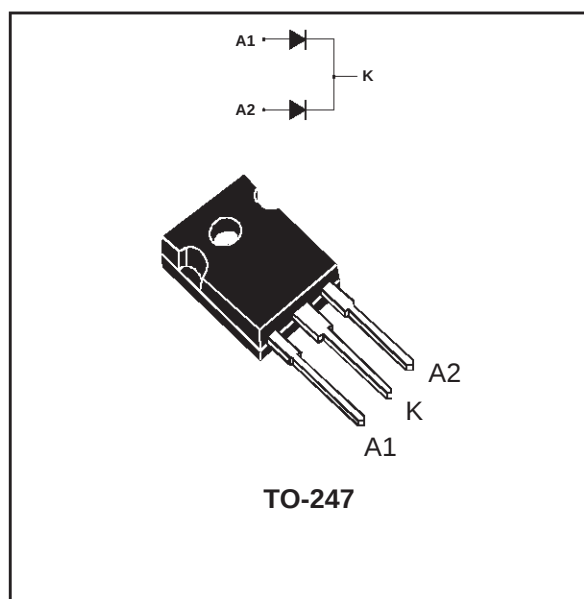
FEATURES AND BENEFITS

- 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	$T_c = 125^{\circ}C$ $\delta = 0.5$	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	$t_p = 2\text{ }\mu s$ $F = 1\text{ kHz}$	Per diode	1	A
T_{stg}	Storage temperature range			- 65 to + 150	$^{\circ}C$
T_j	Maximum junction temperature			150	
dV/dt	Critical rate of rise reverse voltage			10000	V/ μs

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THERMAL RESISTANCES

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

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	$T_j = 25^{\circ}\text{C}$	$V_R = V_{RRM}$			30	μA
		$T_j = 125^{\circ}\text{C}$			5	25	mA
V_F^{**}	Forward voltage drop	$T_j = 25^{\circ}\text{C}$	$I_F = 20\text{ A}$			0.96	V
		$T_j = 125^{\circ}\text{C}$	$I_F = 20\text{ A}$			0.8	
		$T_j = 125^{\circ}\text{C}$	$I_F = 10\text{ A}$		0.58	0.65	

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

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

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).

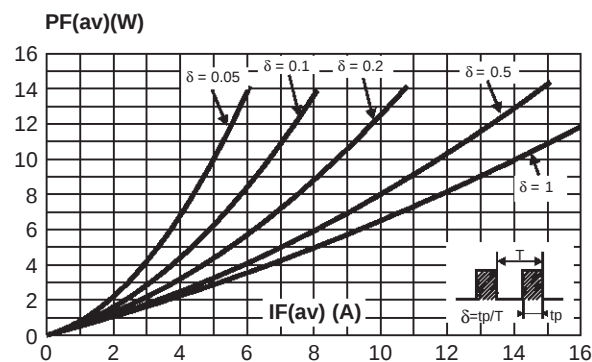


Fig. 2: Average current versus ambient temperature ($\delta = 0.5$) (per diode).

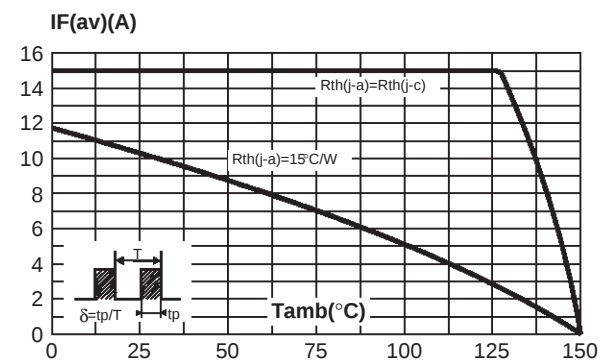


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values) (per diode).

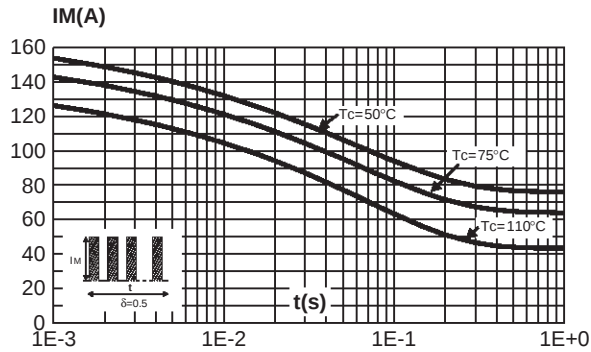


Fig. 4: Relative variation of thermal transient impedance junction to case versus pulse duration (per diode).

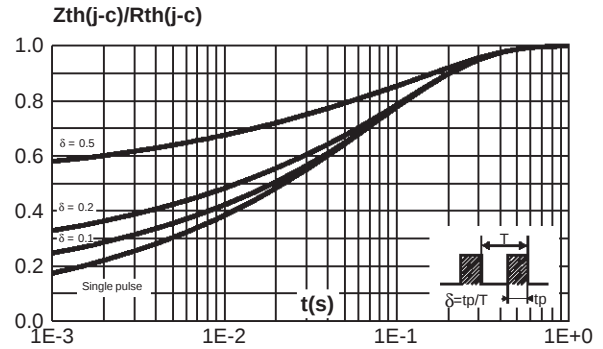


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values) (per diode).

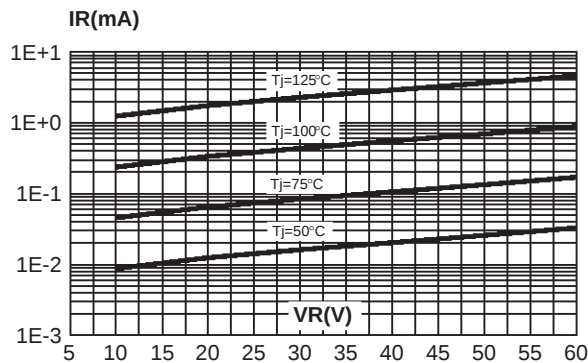


Fig. 6: Junction capacitance versus reverse voltage applied (typical values) (per diode).

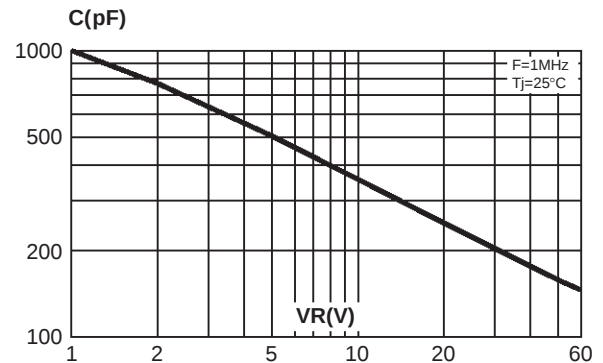
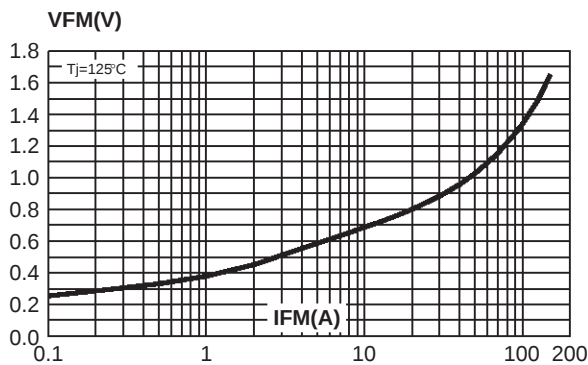
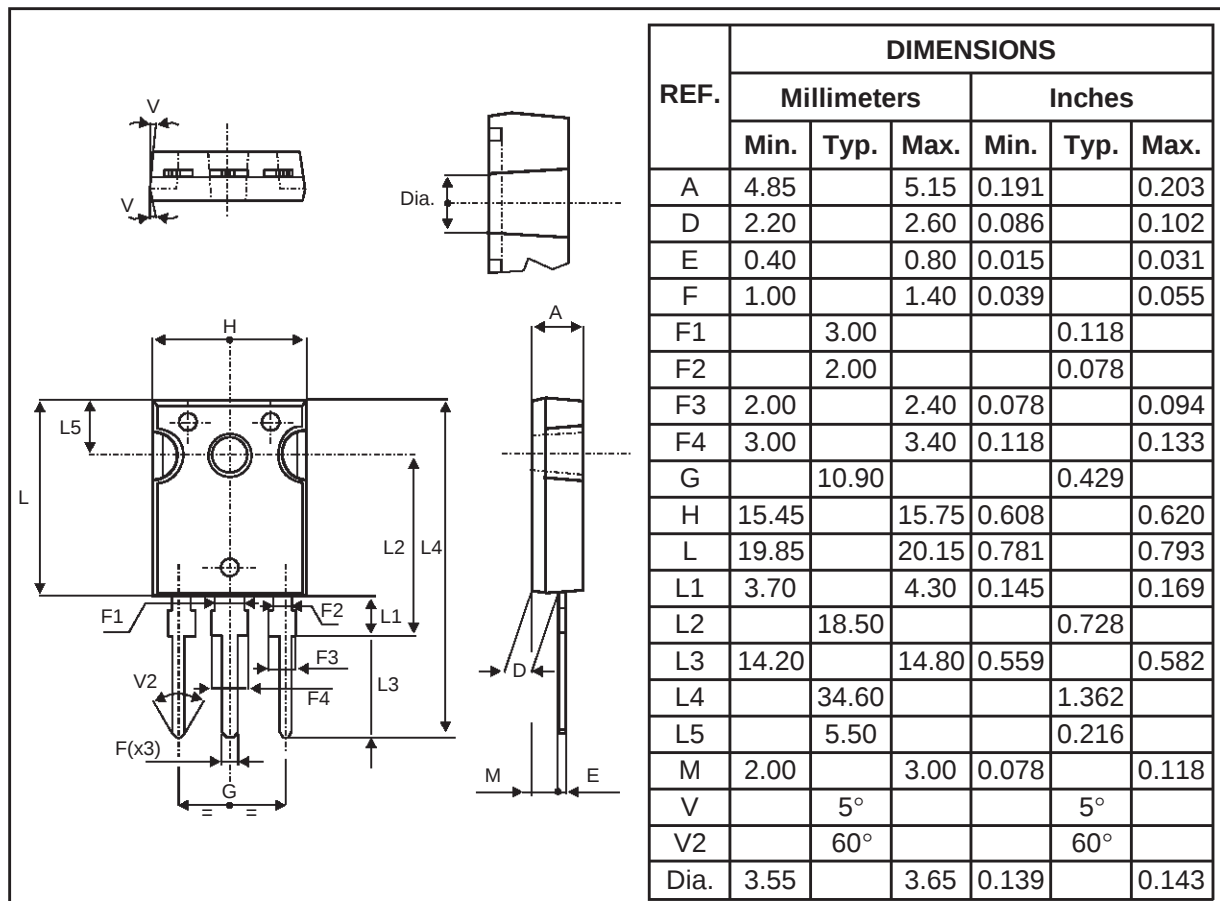


Fig. 7: Forward voltage drop versus forward current (maximum values) (per diode).



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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

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