



STPS30H100CW

HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

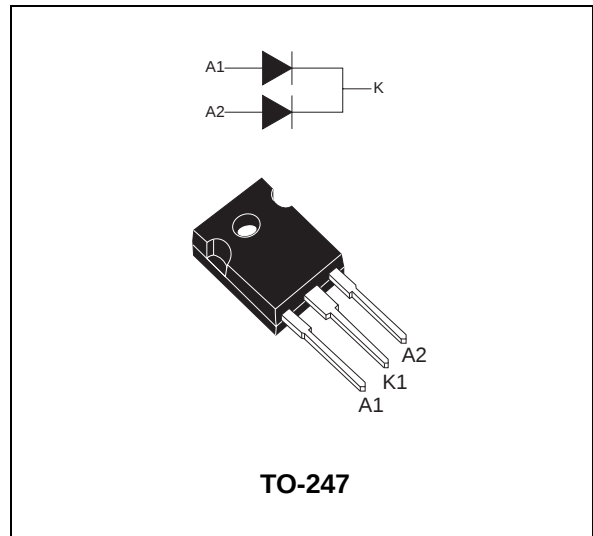
$I_{F(AV)}$	2 x 15 A
V_{RRM}	100 V
$T_j (max)$	175 °C
$V_F (max)$	0.67 V

FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW LEAKAGE CURRENT
- GOOD TRADE OFF BETWEEN LEAKAGE CURRENT AND FORWARD VOLTAGE DROP
- LOW THERMAL RESISTANCE
- AVALANCHE RATED

DESCRIPTION

Dual center tap Schottky rectifier suited for Switch Mode Power Supplies 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, per diode)

Symbol	Parameter			Value	Unit
V _{RRM}	Repetitive peak reverse voltage			100	V
I _{F(RMS)}	RMS forward current			30	A
I _{F(AV)}	Average forward current	T _c = 155°C δ = 0.5	Per diode Per device	15 30	A
I _{FSM}	Surge non repetitive forward current	t _p = 10 ms sinusoidal		250	A
I _{RRM}	Repetitive peak reverse current	t _p = 2 μs F = 1kHz square		1	A
I _{RSM}	Non repetitive peak reverse current	t _p = 100 μs square		3	A
E _{AS}	Non repetitive avalanche energy	T _j = 25°C L = 60 mH I _{as} = 2 A per diode		24	mJ
T _{stg}	Storage temperature range			- 65 to + 175	°C
T _j	Maximum operating junction temperature			175	°C
dV/dt	Critical rate of rise of rise 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	°C/W
		Total	0.9	
R _{th(c)}		Coupling	0.1	

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

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	T _j = 25°C	V _R = V _{RRM}			5	μA
		T _j = 125°C			2	6	mA
V _F **	Forward voltage drop	T _j = 25°C	I _F = 15 A			0.80	V
		T _j = 125°C	I _F = 15 A		0.64	0.67	
		T _j = 25°C	I _F = 30 A			0.93	
		T _j = 125°C	I _F = 30 A		0.74	0.80	

Pulse test : * t_p = 5 ms, δ < 2%
 ** t_p = 380 μs, δ < 2%

To evaluate the maximum conduction losses use the following equation :
 $P = 0.54 \times I_{F(AV)} + 0.0086 \times I_F^2(\text{RMS})$

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

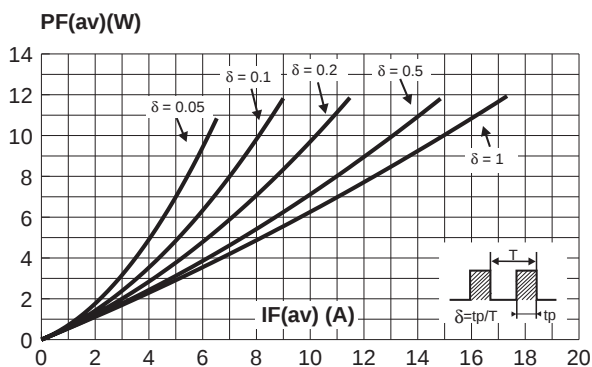


Fig. 2: Average forward current versus ambient temperature (δ=0.5, per diode).

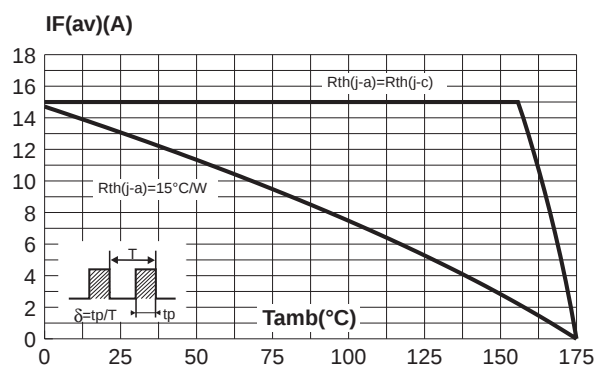


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

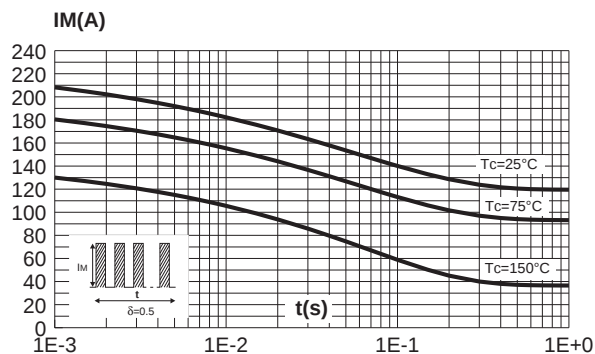


Fig. 4: Relative variation of thermal impedance junction to case versus pulse duration.

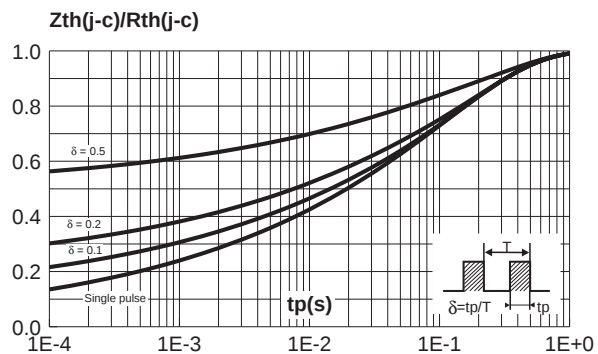


Fig. 5: Reverse leakage current versus reverse voltage applied (typical values, per diode).

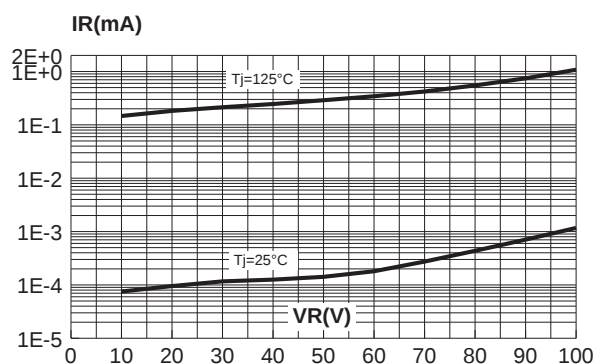


Fig. 6: Junction capacitance versus reverse voltage applied (typical values, per diode).

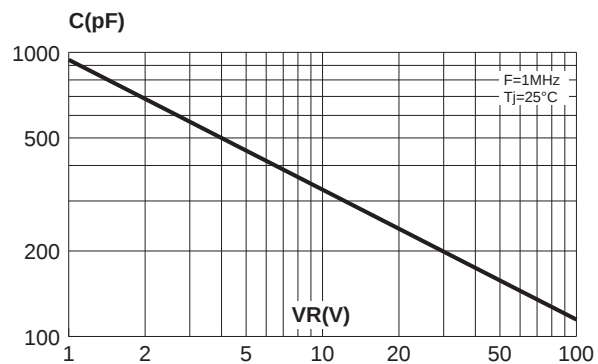
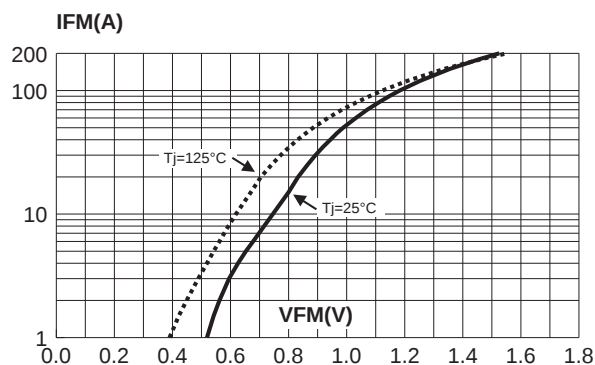


Fig. 7: Forward voltage drop versus forward current (maximum values, per diode).



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PACKAGE MECHANICAL DATA TO-247

REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.85		5.15	0.191		0.203
D	2.20		2.60	0.086		0.102
E	0.40		0.80	0.015		0.031
F	1.00		1.40	0.039		0.055
F1		3.00			0.118	
F2		2.00			0.078	
F3	2.00		2.40	0.078		0.094
F4	3.00		3.40	0.118		0.133
G		10.90			0.429	
H	15.45		15.75	0.608		0.620
L	19.85		20.15	0.781		0.793
L1	3.70		4.30	0.145		0.169
L2		18.50			0.728	
L3	14.20		14.80	0.559		0.582
L4		34.60			1.362	
L5		5.50			0.216	
M	2.00		3.00	0.078		0.118
V		5°			5°	
V2		60°			60°	
Dia.	3.55		3.65	0.139		0.143

- Cooling method: C
- Recommended torque value: 0.8 N.m.
- Maximum torque value: 1 N.m.

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS30H100CW	STPS30H100CW	TO-247	4.36g	30	Tube

- Epoxy meets UL94,V0

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