

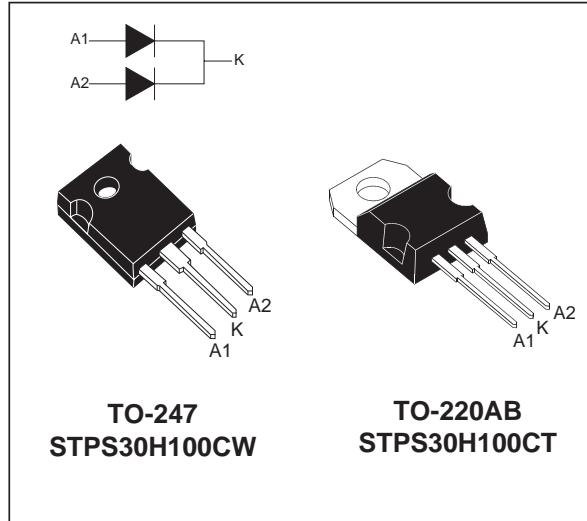
## HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

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

### FEATURES AND BENEFITS

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



### 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	$T_c = 155^\circ\text{C}$	Per diode	15	A
		$\delta = 0.5$	Per device	30	
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10 \text{ ms}$ sinusoidal		250	A
$I_{RRM}$	Repetitive peak reverse current	$t_p = 2 \mu\text{s}$ square $F = 1\text{kHz}$		1	A
$I_{RSR}$	Non repetitive peak reverse current	$t_p = 100 \mu\text{s}$ square		3	A
$P_{ARM}$	Repetitive peak avalanche power	$t_p = 1\mu\text{s}$	$T_j = 25^\circ\text{C}$	10800	W
$T_{stg}$	Storage temperature range			- 65 to + 175	°C
$T_j$	Maximum operating junction temperature *			175	°C
$dV/dt$	Critical rate of rise of reverse voltage			10000	V/ $\mu\text{s}$

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

## STPS30H100CW/CT

### THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode	1.6
		Total	0.9
$R_{th(c)}$	Coupling	0.1	

When the diodes 1 and 2 are used simultaneously :  
 $\Delta T_j(\text{diode 1}) = P(\text{diode1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$

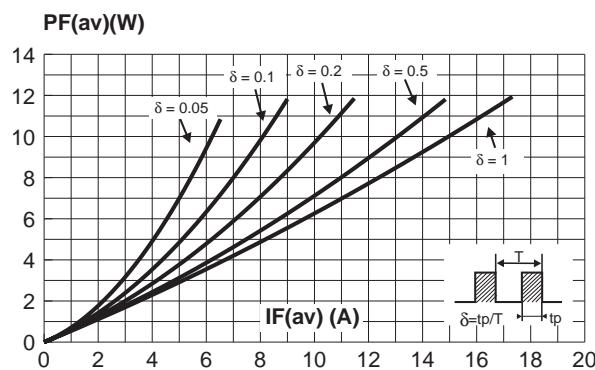
### STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
$I_R$ *	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			5	$\mu\text{A}$
		$T_j = 125^\circ\text{C}$			2	6	$\text{mA}$
$V_F$ **	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 15 \text{ A}$			0.80	$\text{V}$
		$T_j = 125^\circ\text{C}$	$I_F = 15 \text{ A}$		0.64	0.67	
		$T_j = 25^\circ\text{C}$	$I_F = 30 \text{ A}$			0.93	
		$T_j = 125^\circ\text{C}$	$I_F = 30 \text{ A}$		0.74	0.80	

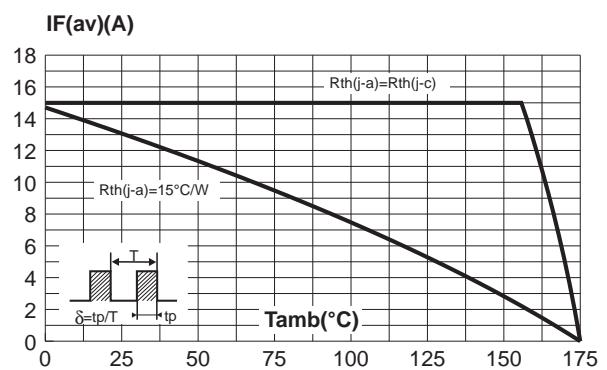
Pulse test : \*  $t_p = 5 \text{ ms}, \delta < 2\%$   
\*\*  $t_p = 380 \mu\text{s}, \delta < 2\%$

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

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



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



**PACKAGE MECHANICAL DATA**  
TO-220AB

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
C	1.23	1.32	0.048	0.051
D	2.40	2.72	0.094	0.107
E	0.49	0.70	0.019	0.027
F	0.61	0.88	0.024	0.034
F1	1.14	1.70	0.044	0.066
F2	1.14	1.70	0.044	0.066
G	4.95	5.15	0.194	0.202
G1	2.40	2.70	0.094	0.106
H2	10	10.40	0.393	0.409
L2	16.4 typ.		0.645 typ.	
L4	13	14	0.511	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.20	6.60	0.244	0.259
L9	3.50	3.93	0.137	0.154
M	2.6 typ.		0.102 typ.	
Diam.	3.75	3.85	0.147	0.151

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS30H100CW	STPS30H100CW	TO-247	4.36g	30	Tube
STPS30H100CT	STPS30H100CT	TO-220AB	2.20 g	50	Tube

- EPOXY MEETS UL94,V0