



# STPS2H100A/U

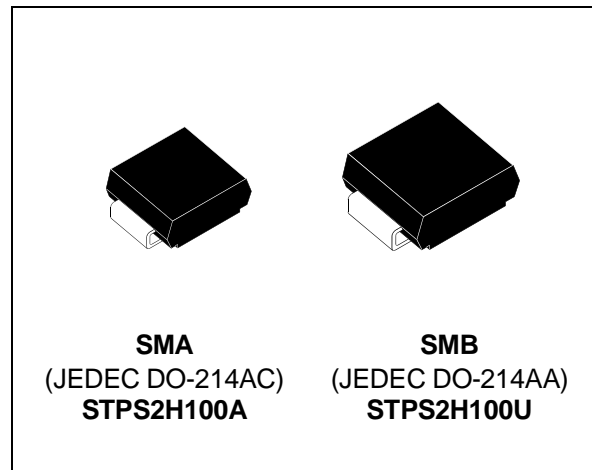
## HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

<b>I<sub>F(AV)</sub></b>	<b>2 A</b>
<b>V<sub>RRM</sub></b>	<b>100 V</b>
<b>T<sub>j (max)</sub></b>	<b>175 °C</b>
<b>V<sub>F (max)</sub></b>	<b>0.65 V</b>

### FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- HIGH JUNCTION TEMPERATURE CAPABILITY
- LOW LEAKAGE CURRENT
- GOOD TRADE OFF BETWEEN LEAKAGE CURRENT AND FORWARD VOLTAGE DROP
- AVALANCHE RATED



### DESCRIPTION

Schottky rectifier designed for high frequency miniature Switched Mode Power Supplies such as adaptors and on board DC/DC converters.

Packaged in SMA or SMB.

### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V <sub>RRM</sub>	Repetitive peak reverse voltage	100	V
I <sub>F(RMS)</sub>	RMS forward current	10	A
I <sub>F(AV)</sub>	Average forward current	T <sub>L</sub> = 130°C δ = 0.5 2	A
I <sub>FSM</sub>	Surge non repetitive forward current	t <sub>p</sub> = 10 ms sinusoidal 75	A
I <sub>RRM</sub>	Repetitive peak reverse current	t <sub>p</sub> =2 μs F=1kHz square 1	A
I <sub>RSM</sub>	Non repetitive peak reverse current	t <sub>p</sub> = 100 μs square 1	A
T <sub>stg</sub>	Storage temperature range	- 65 to + 175	°C
T <sub>j</sub>	Maximum operating junction temperature	175	°C
dV/dt	Critical rate of rise of reverse voltage	10000	V/μs

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## THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to lead	SMA	30
		SMB	25

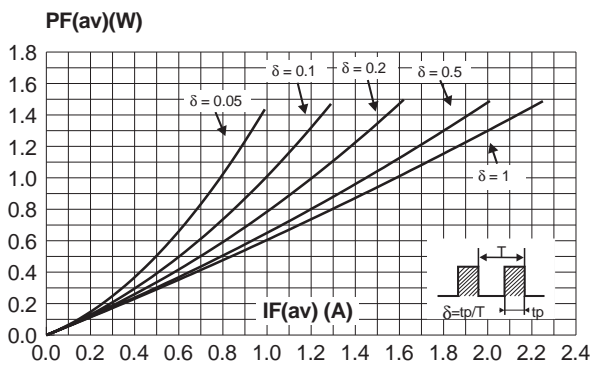
## STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests conditions	Min.	Typ.	Max.	Unit	
$I_R^*$	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$		1	$\mu\text{A}$	
		$T_j = 125^\circ\text{C}$		0.4	1	$\text{mA}$	
$V_F^{**}$	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 2\text{ A}$		0.79	V	
		$T_j = 125^\circ\text{C}$		0.6	0.65		
		$T_j = 25^\circ\text{C}$		$I_F = 4\text{ A}$			0.88
		$T_j = 125^\circ\text{C}$			0.69		0.74

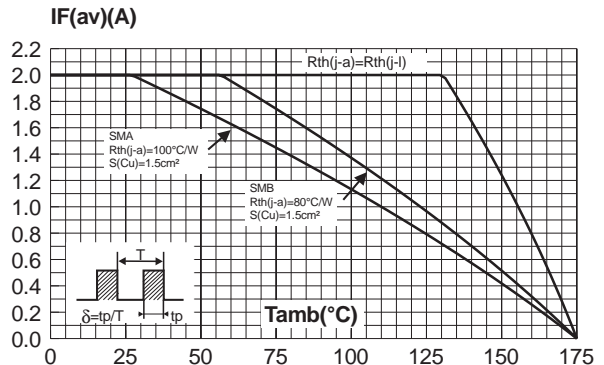
Pulse test : \*  $t_p = 5\text{ ms}$ ,  $\delta < 2\%$   
 \*\*  $t_p = 380\text{ }\mu\text{s}$ ,  $\delta < 2\%$

To evaluate the maximum conduction losses use the following equation :  
 $P = 0.56 I_{F(AV)} + 0.045 I_F^2(RMS)$

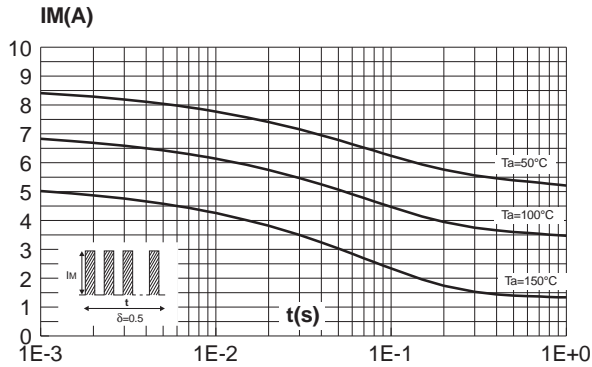
**Fig. 1:** Average forward power dissipation versus average forward current.



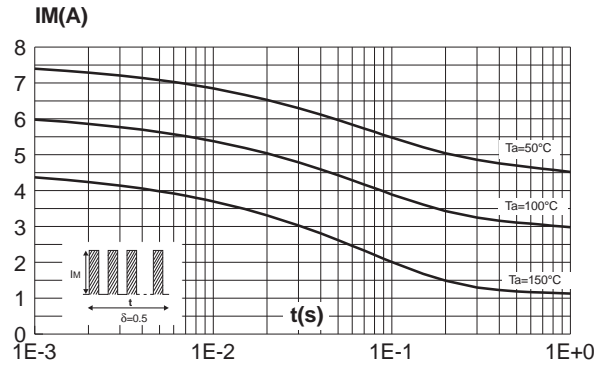
**Fig. 2:** Average forward current versus ambient temperature ( $\delta=0.5$ ).



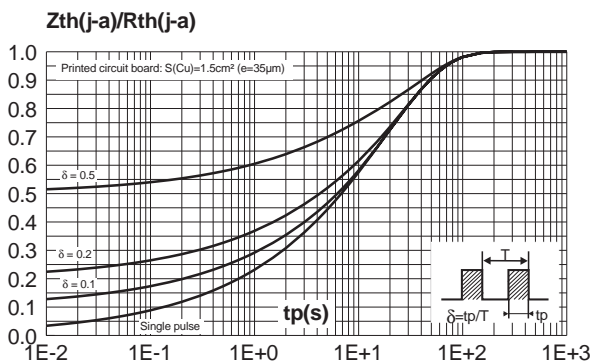
**Fig. 3:** Non repetitive surge peak forward current versus overload duration (maximum values) (SMB).



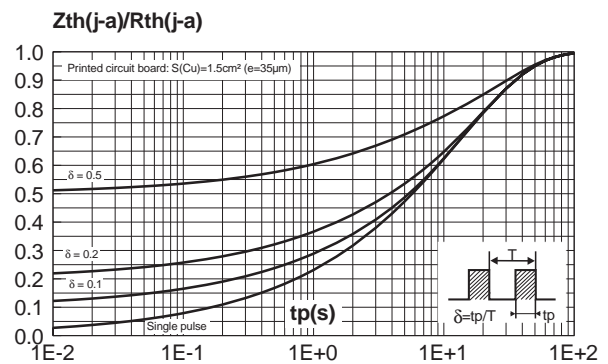
**Fig. 4:** Non repetitive surge peak forward current versus overload duration (maximum values) (SMA).



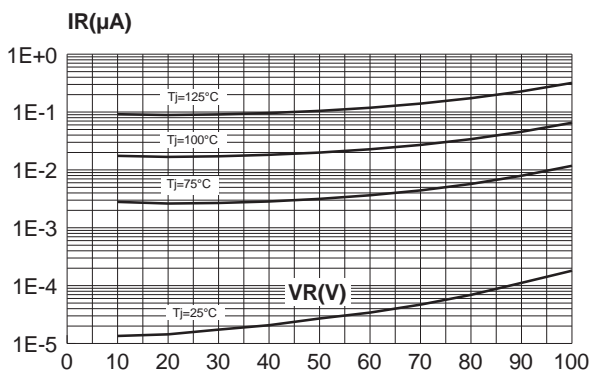
**Fig. 5:** Relative variation of thermal impedance junction to ambient versus pulse duration (SMB).



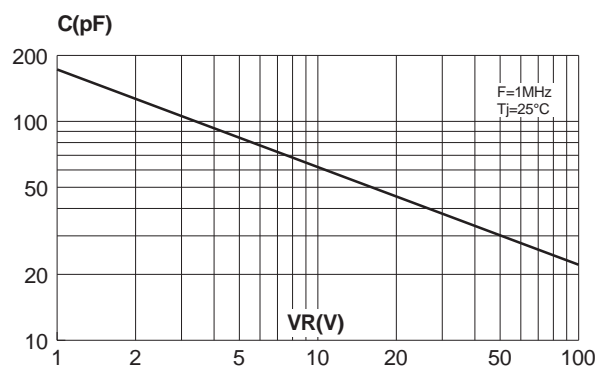
**Fig. 6:** Relative variation of thermal impedance junction to ambient versus pulse duration (SMA).



**Fig. 7:** Reverse leakage current versus reverse voltage applied (typical values).

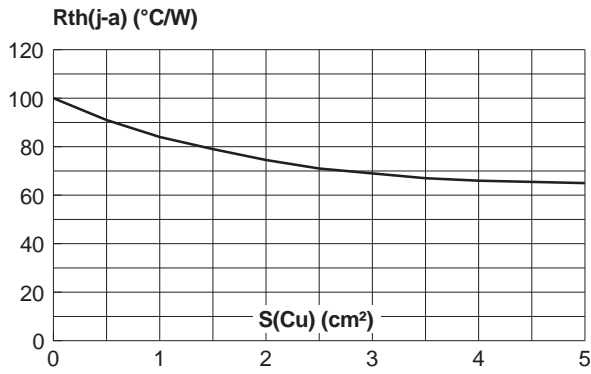


**Fig. 8:** Junction capacitance versus reverse voltage applied (typical values).

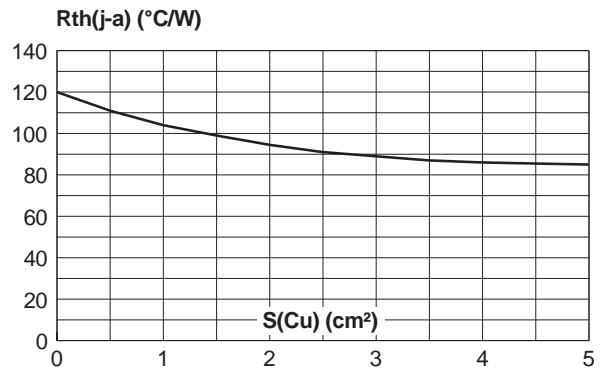


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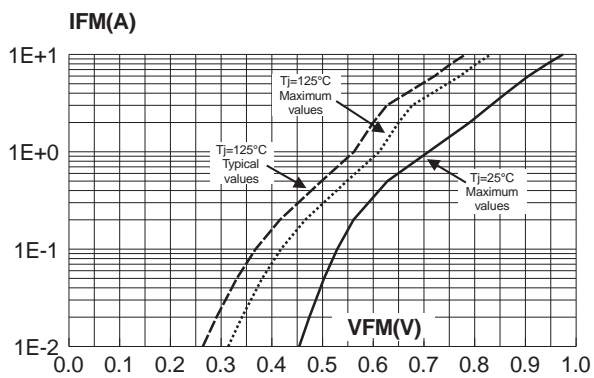
**Fig. 9:** Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35 $\mu$ m) (SMB).



**Fig. 10:** Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35 $\mu$ m) (SMA).

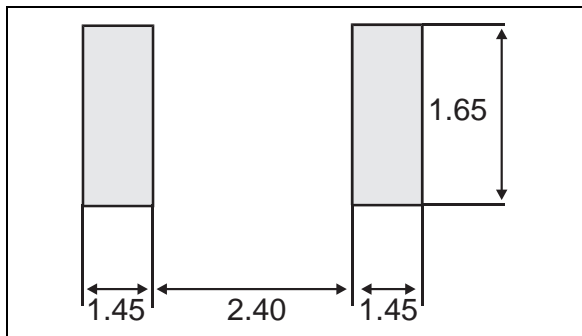


**Fig. 11:** Forward voltage drop versus forward current.



**PACKAGE MECHANICAL DATA**  
 SMA

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	1.90	2.70	0.075	0.106
A2	0.05	0.20	0.002	0.008
b	1.25	1.65	0.049	0.065
c	0.15	0.41	0.006	0.016
E	4.80	5.60	0.189	0.220
E1	3.95	4.60	0.156	0.181
D	2.25	2.95	0.089	0.116
L	0.75	1.60	0.030	0.063

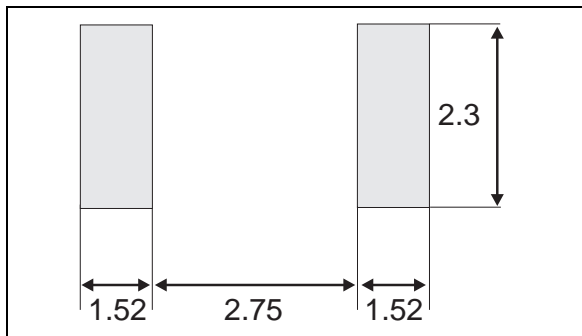
**FOOT PRINT (in millimeters)**


# STPS2H100A/U

## PACKAGE MECHANICAL DATA SMB

	DIMENSIONS				
	REF.	Millimeters		Inches	
		Min.	Max.	Min.	Max.
A1	1.90	2.45	0.075	0.096	
A2	0.05	0.20	0.002	0.008	
b	1.95	2.20	0.077	0.087	
c	0.15	0.41	0.006	0.016	
E	5.10	5.60	0.201	0.220	
E1	4.05	4.60	0.159	0.181	
D	3.30	3.95	0.130	0.156	
L	0.75	1.60	0.030	0.063	

### FOOT PRINT (in millimeters)



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS2H100A	S21	SMA	0.068g	5000	Tape & reel
STPS2H100U	G21	SMB	0.107g	2500	Tape & reel

- Band indicates cathode
- Epoxy meets UL94, V0

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