



# STPS2H100A/U

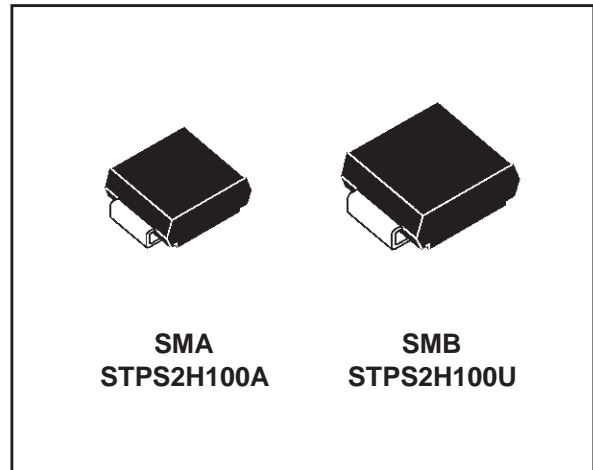
## HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

### MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	2 A
$V_{RRM}$	100 V
$T_j(\text{max})$	175 °C
$V_F(\text{max})$	0.65 V

### 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 adaptators and on board DC/DC converters.

Packaged in SMA or SMB.

### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$V_{RRM}$	Repetitive peak reverse voltage		100	V
$I_{F(RMS)}$	RMS forward current		10	A
$I_{F(AV)}$	Average forward current	$T_L = 130^\circ\text{C} \delta = 0.5$	2	A
$I_{FSM}$	Surge non repetitive forward current	$t_p = 10 \text{ ms sinusoidal}$	75	A
$I_{RRM}$	Repetitive peak reverse current	$t_p = 2 \mu\text{s} F = 1\text{kHz square}$	1	A
$I_{RSM}$	Non repetitive peak reverse current	$t_p = 100 \mu\text{s square}$	1	A
$T_{stg}$	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/ $\mu\text{s}$

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## THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R <sub>th(j-l)</sub>	Junction to lead	SMA	30
		SMB	25

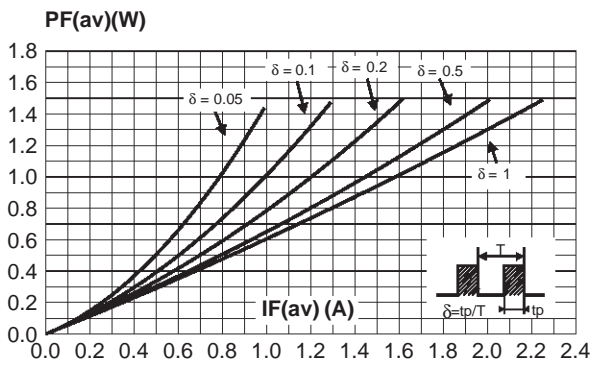
## STATIC ELECTRICAL CHARACTERISTICS

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>			1	μA	
		T <sub>j</sub> = 125°C			0.4	1	mA	
V <sub>F</sub> **	Forward voltage drop	T <sub>j</sub> = 25°C	I <sub>F</sub> = 2 A			0.79	V	
		T <sub>j</sub> = 125°C			0.6	0.65		
		T <sub>j</sub> = 25°C		I <sub>F</sub> = 4 A				0.88
		T <sub>j</sub> = 125°C				0.69		0.74

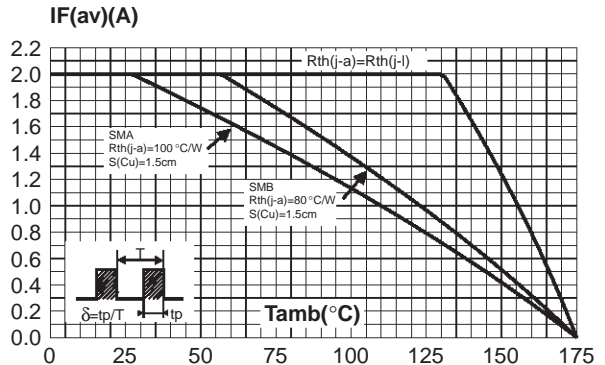
Pulse test : \* t<sub>p</sub> = 5 ms, δ < 2%  
 \*\* t<sub>p</sub> = 380 μs, δ < 2%

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

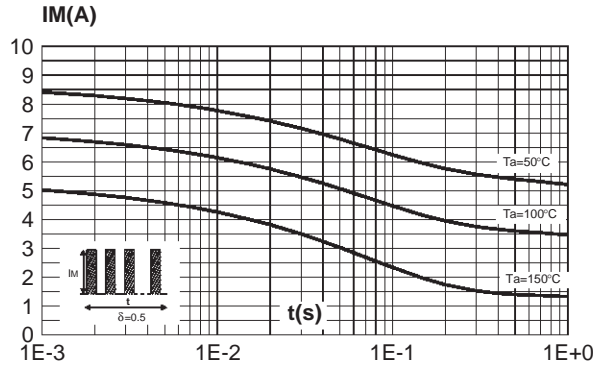
**Fig. 1:** Average forward power dissipation versus average forward current.



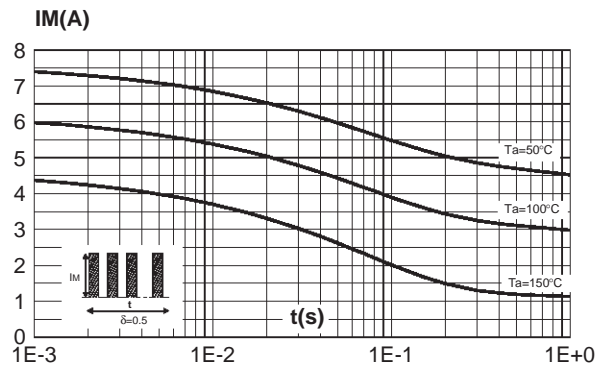
**Fig. 2:** Average forward current versus ambient temperature (δ=0.5).



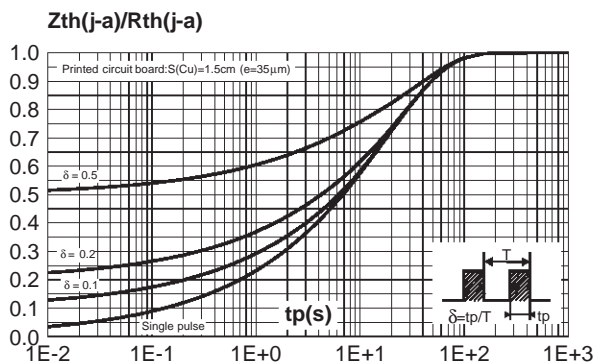
**Fig. 3:** Non repetitive surge peak forward current versus overload duration (maximum values) (SMB).



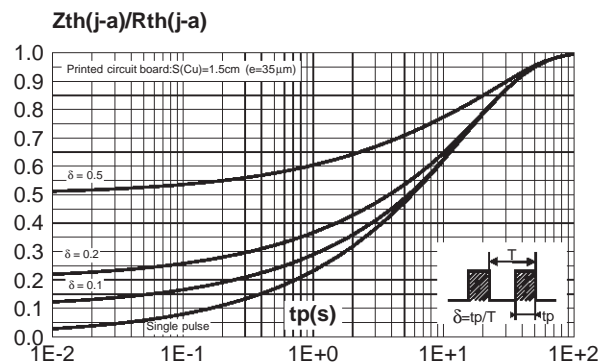
**Fig. 4:** Non repetitive surge peak forward current versus overload duration (maximum values) (SMA).



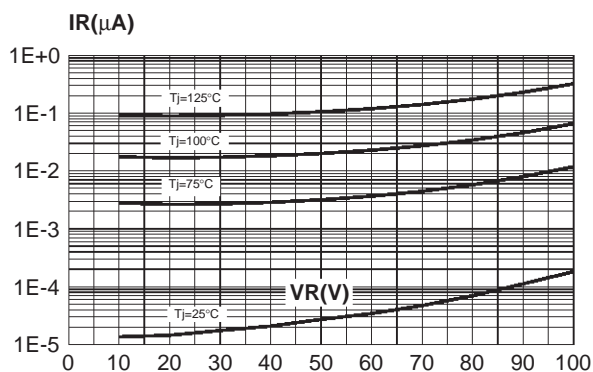
**Fig. 5:** Relative variation of thermal impedance junction to ambient versus pulse duration (SMB).



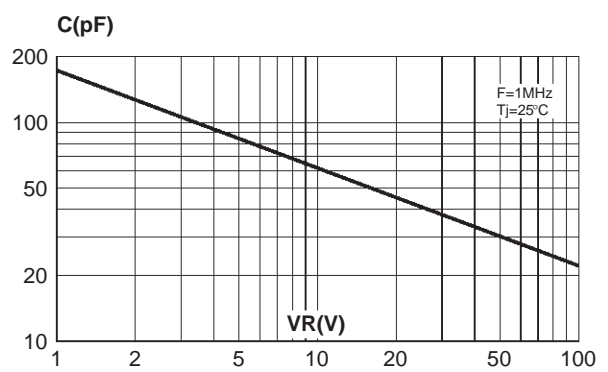
**Fig. 6:** Relative variation of thermal impedance junction to ambient versus pulse duration (SMA).



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

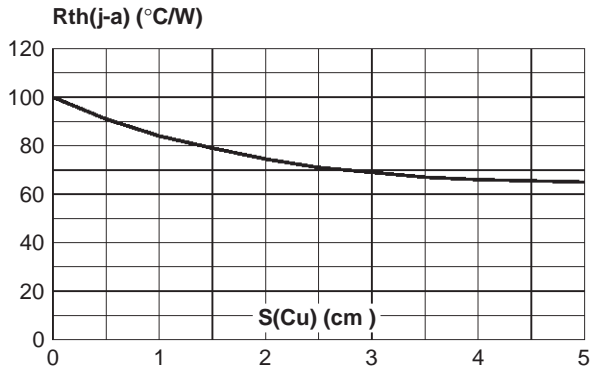


**Fig. 8:** Junction capacitance versus reverse voltage applied (typical values).

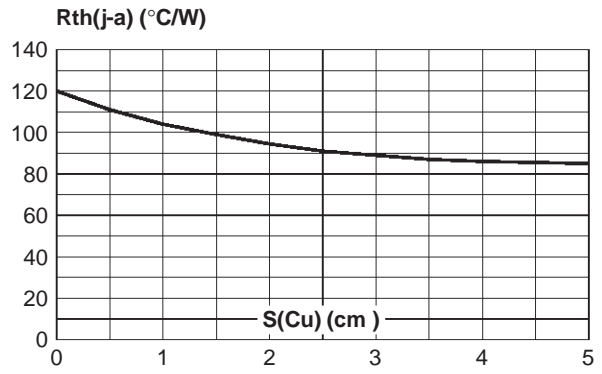


## STPS2H100A/U

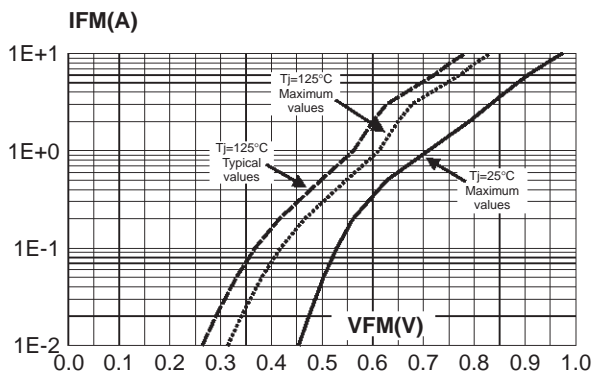
**Fig. 9:** Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35 $\mu$ m) (SMB).



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



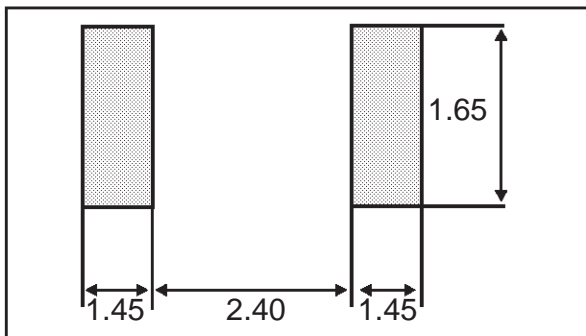
**Fig. 11:** Forward voltage drop versus forward current.



**PACKAGE MECHANICAL DATA**  
SMA

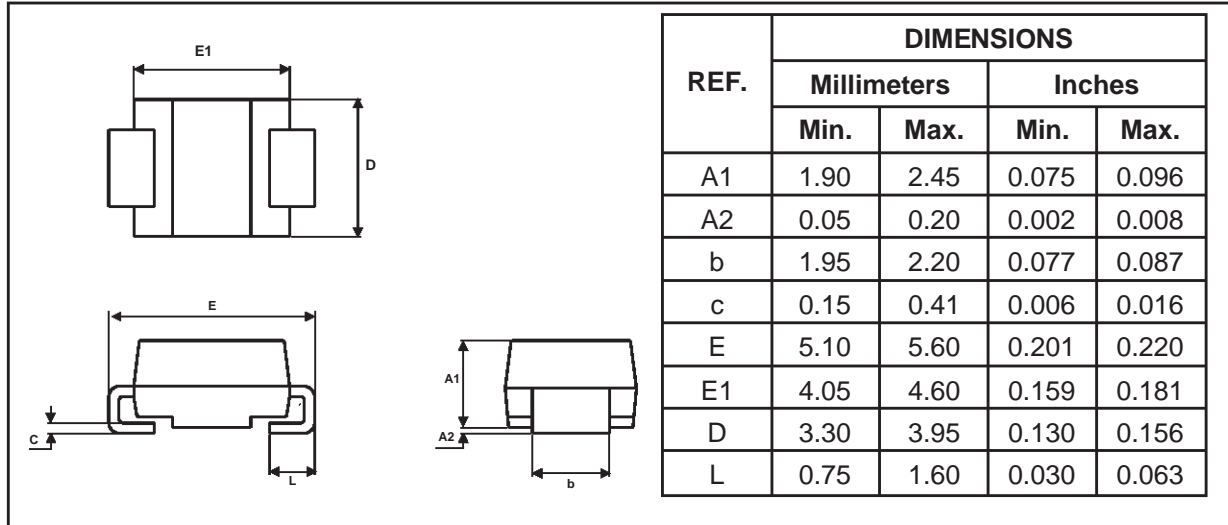
REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	1.90	2.70	0.075	0.106
A2	0.05	0.20	0.002	0.008
b	1.25	1.65	0.049	0.065
c	0.15	0.41	0.006	0.016
E	4.80	5.60	0.189	0.220
E1	3.95	4.60	0.156	0.181
D	2.25	2.95	0.089	0.116
L	0.75	1.60	0.030	0.063

**FOOT PRINT (in millimeters)**

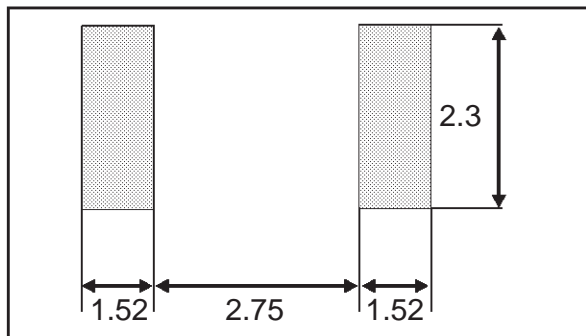


# STPS2H100A/U

## PACKAGE MECHANICAL DATA SMB



### 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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