



STPS2H100A/U

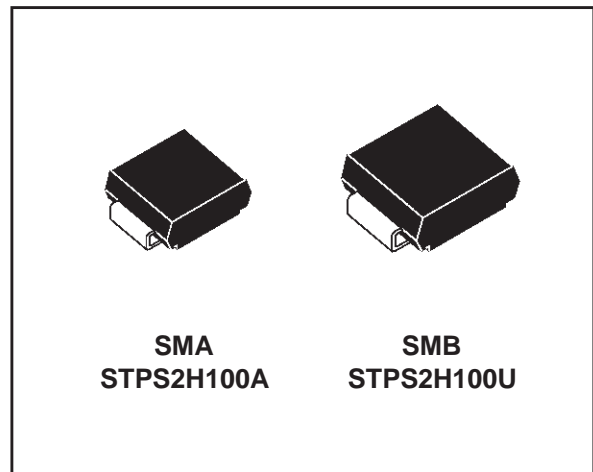
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

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/ 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°C	V _R = V _{RRM}			1	μA	
		T _j = 125°C			0.4	1	mA	
V _F **	Forward voltage drop	T _j = 25°C	I _F = 2 A			0.79	V	
		T _j = 125°C			0.6	0.65		
		T _j = 25°C		I _F = 4 A				0.88
		T _j = 125°C				0.69		0.74

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

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

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

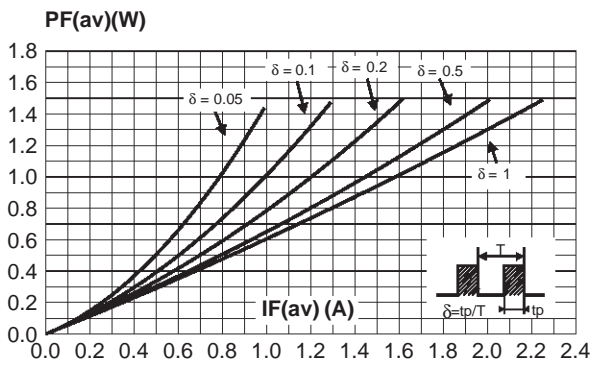


Fig. 2: Average forward current versus ambient temperature (δ=0.5).

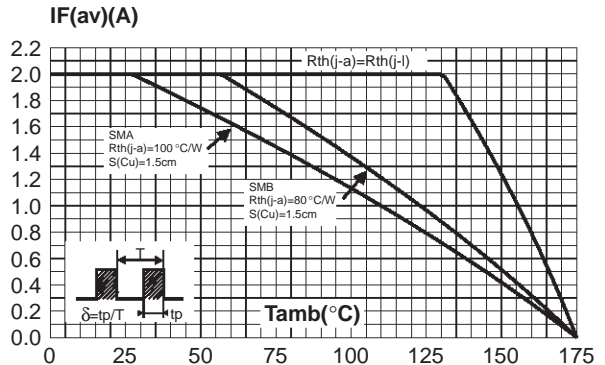


Fig. 3: Non repetitive surge peak forward current versus overload duration (maximum values) (SMB).

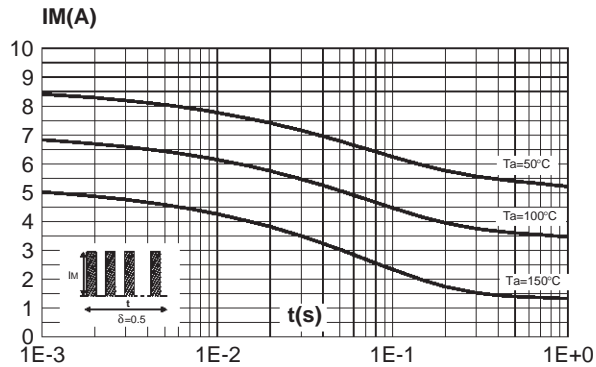


Fig. 4: Non repetitive surge peak forward current versus overload duration (maximum values) (SMA).

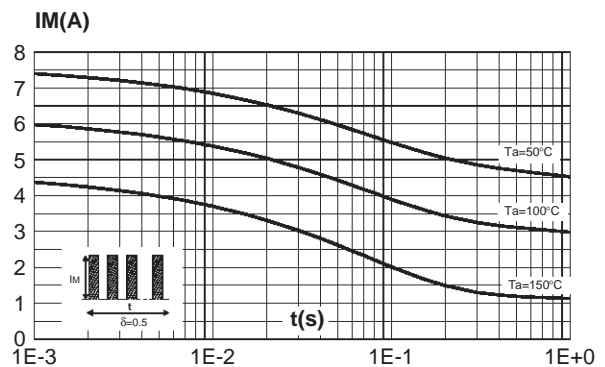


Fig. 5: Relative variation of thermal impedance junction to ambient versus pulse duration (SMB).

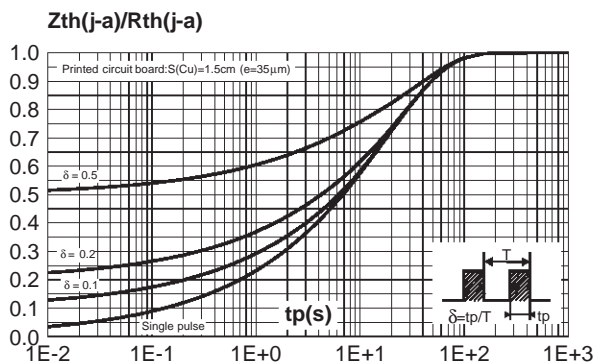


Fig. 6: Relative variation of thermal impedance junction to ambient versus pulse duration (SMA).

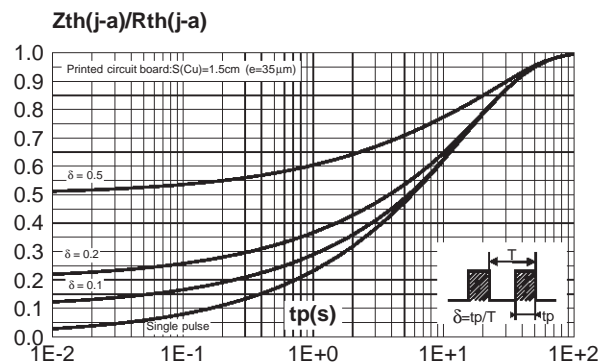


Fig. 7: Reverse leakage current versus reverse voltage applied (typical values).

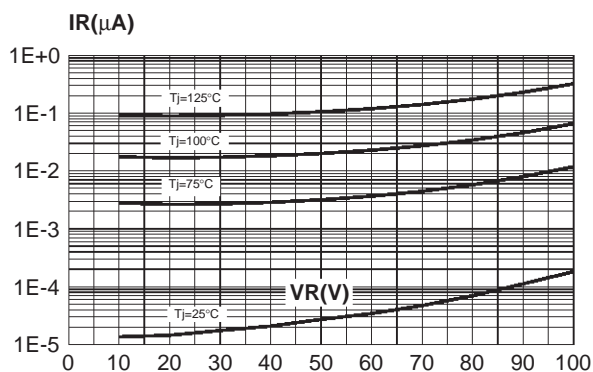
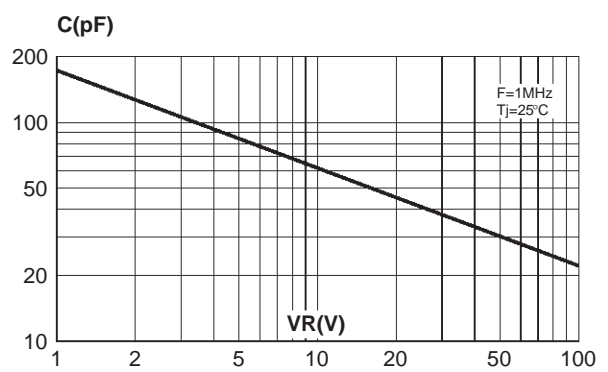


Fig. 8: Junction capacitance versus reverse voltage applied (typical values).



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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 μ m) (SMB).

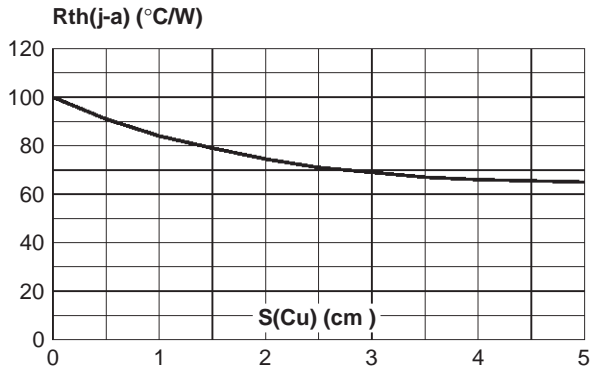


Fig. 10: Thermal resistance junction to ambient versus copper surface under each lead (Epoxy printed circuit board FR4, copper thickness: 35 μ m) (SMA).

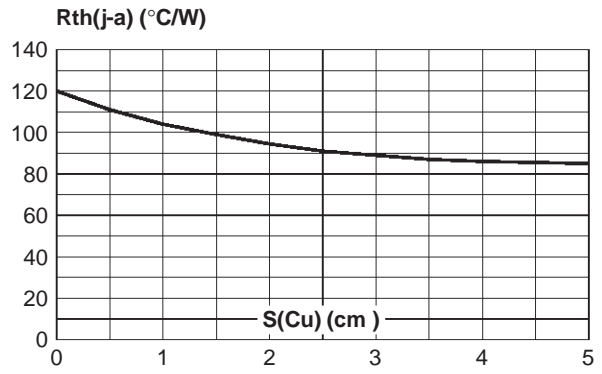
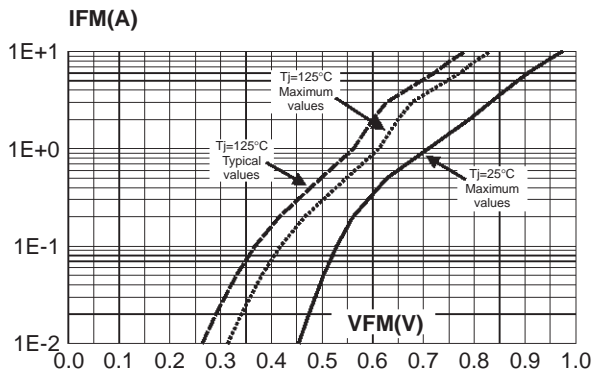


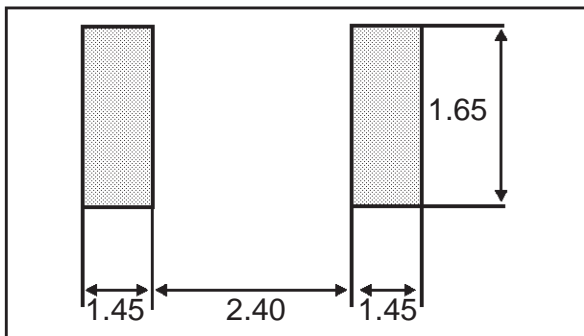
Fig. 11: Forward voltage drop versus forward current.



PACKAGE MECHANICAL DATA
SMA

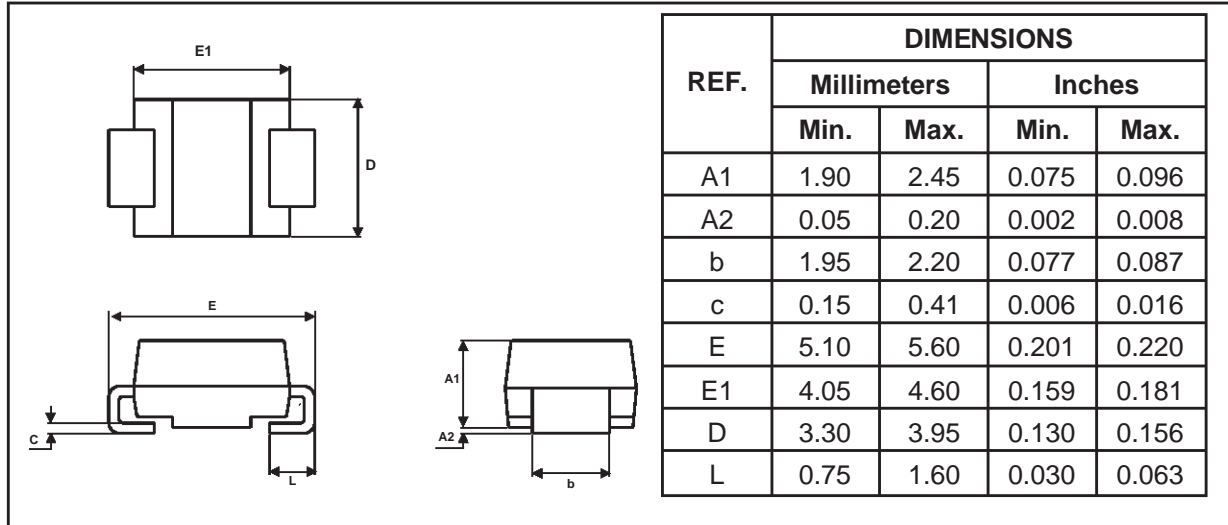
REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	1.90	2.70	0.075	0.106
A2	0.05	0.20	0.002	0.008
b	1.25	1.65	0.049	0.065
c	0.15	0.41	0.006	0.016
E	4.80	5.60	0.189	0.220
E1	3.95	4.60	0.156	0.181
D	2.25	2.95	0.089	0.116
L	0.75	1.60	0.030	0.063

FOOT PRINT (in millimeters)

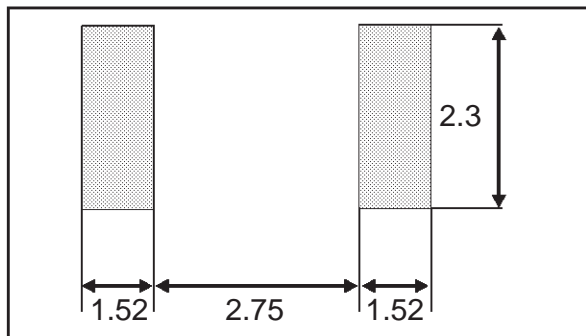


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PACKAGE MECHANICAL DATA SMB



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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