

STPS1H100A/U

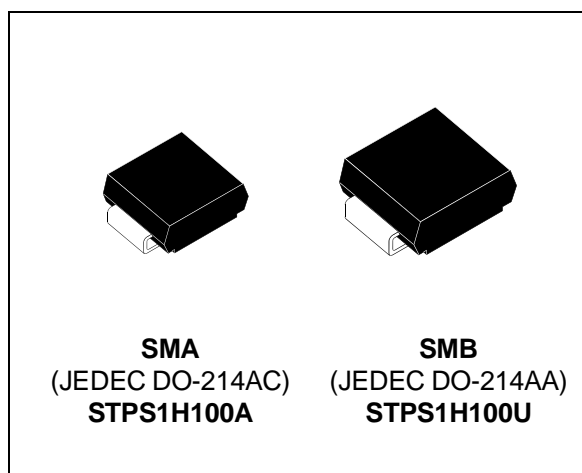
HIGH VOLTAGE POWER SCHOTTKY RECTIFIER

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	1 A
V_{RRM}	100 V
$T_j(max)$	175 °C
$V_F(max)$	0.62 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	$T_L = 160^\circ\text{C} \quad \delta = 0.5$	1	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10 \text{ ms sinusoidal}$	50	A
I_{RRM}	Repetitive peak reverse current	$t_p = 2 \mu\text{s square } F = 1\text{kHz}$	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

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

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THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-l)}	Junction to lead	SMA	30	°C/W
		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			0.2	0.5	mA
V _F **	Forward voltage drop	T _j = 25°C	I _F = 1 A			0.77	V
		T _j = 125°C	I _F = 1 A		0.58	0.62	
		T _j = 25°C	I _F = 2 A			0.86	
		T _j = 125°C	I _F = 2 A		0.65	0.7	

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

To evaluate the maximum conduction losses use the following equation :
 $P = 0.54 I_{F(AV)} + 0.08 I_{F(RMS)}^2$

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

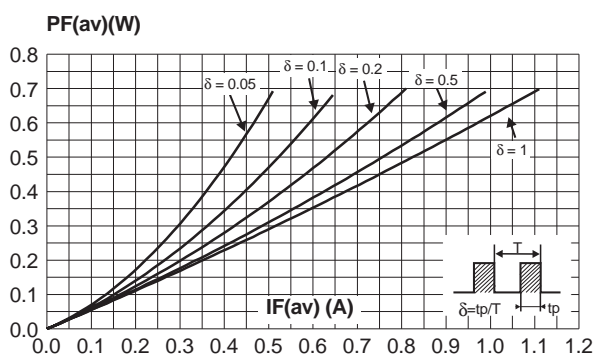
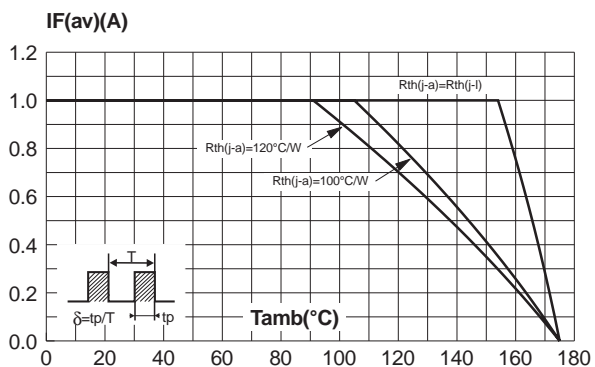


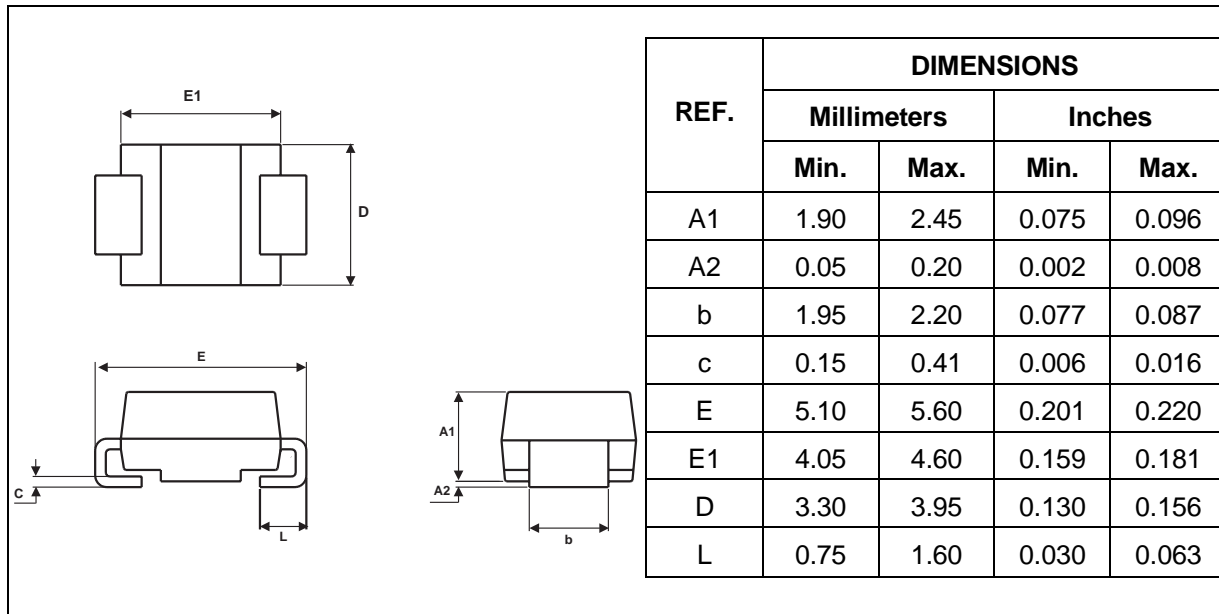
Fig. 2: Average forward current versus ambient temperature (δ=0.5).



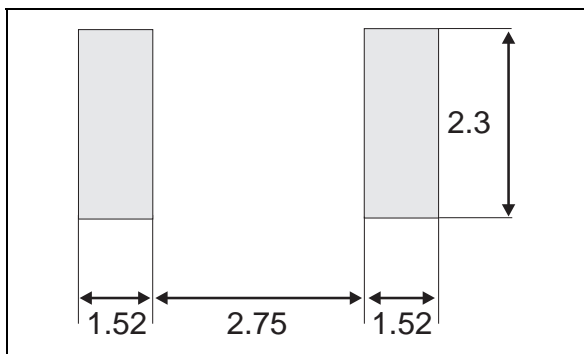
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PACKAGE MECHANICAL DATA

SMB



FOOT PRINT (in millimeters)



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS1H100A	S11	SMA	0.068g	5000	Tape & reel
STPS1H100U	G11	SMB	0.107g	2500	Tape & reel

- Band indicates cathode
- Epoxy meets UL94,V0