

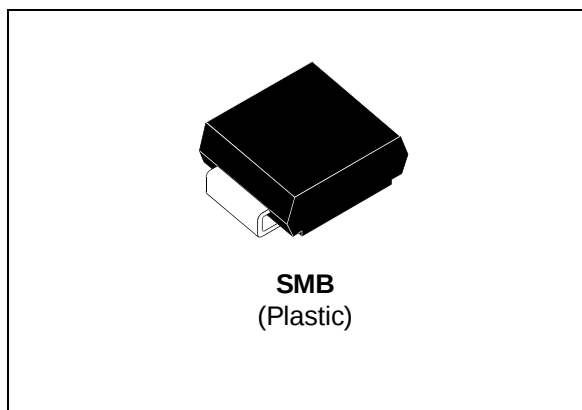
POWER SCHOTTKY RECTIFIERS

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	1.5 A
V_{RRM}	100 V
V_F (max)	0.70 V

FEATURES AND BENEFITS

- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- LOW CAPACITANCE
- HIGH REVERSE AVALANCHE SURGE CAPABILITY



DESCRIPTION

High voltage Schottky rectifier suited for SLIC protection during the card insertion operation.

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	$T_L = 90^\circ\text{C}$ $\delta = 0.5$ $V_R = 60\text{V}$	1.5	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10\text{ ms}$ Sinusoidal	75	A
I_{RRM}	Peak Repetitive Reverse Current	$t_p = 2\text{ }\mu\text{s}$ $F = 1\text{KHz}$	1	A
I_{RSM}	Non Repetitive Peak Reverse Current	$t_p = 100\text{ }\mu\text{s}$	1	A
T_{stg} T_J	Storage Temperature Range Max. Operating Junction Temperature		- 65 to + 150 115	$^\circ\text{C}$
dV/dt	Critical Rate of Rise of Reverse Voltage		1000	V/ μs

STPS1100U

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
Rth (j-l)	Junction-leads	20	°C/W

ELECTRICAL CHARACTERISTICS
STATIC CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	T _j = 25°C	V _R = V _{RRM}			30	μA
		T _j = 100°C			1	5	mA
V _F **	Forward voltage drop	T _j = 25°C	I _F = 100 mA			0.43	V
		T _j = 25°C	I _F = 3 A			0.95	
		T _j = 100°C	I _F = 1.5 A		0.57	0.71	
		T _j = 100°C	I _F = 3 A		0.67	0.85	

Pulse test : * tp = 5 ms, duty cycle < 2 %
 ** tp = 380 μs, duty cycle < 2%

To evaluate the conduction losses use the following equation:

$$P = 0.65 \times I_{F(AV)} + 0.067 \times I_{F(RMS)}^2$$

Typical junction capacitance, V_R = 0V F = 1MHz T_j = 25°C C = 365pF

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

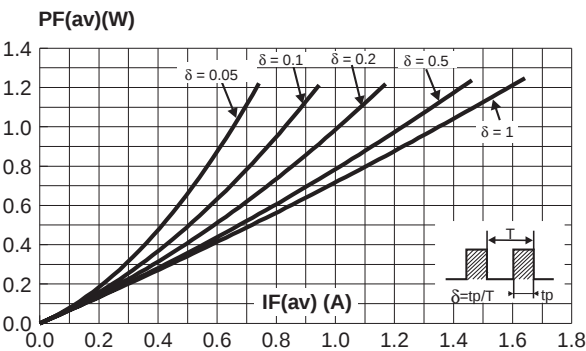


Fig. 2: Average forward current versus ambient temperature (delta=0.5).

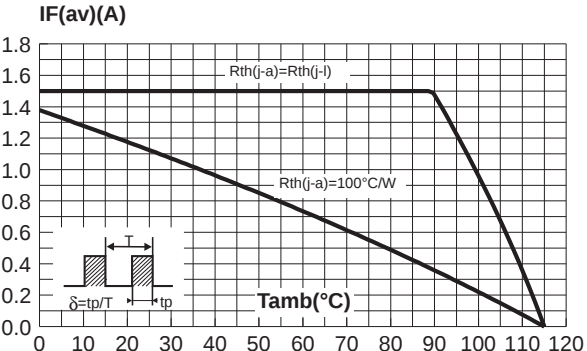


Fig. 3: Non repetitive surge peak forward current versus overload duration; device mounted on printed circuit board $S(\text{Cu})=1\text{cm}^2$ (maximum values).

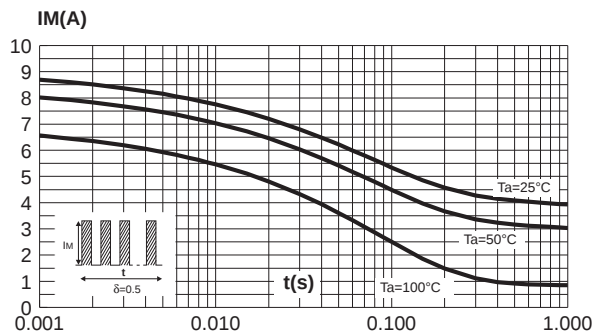


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

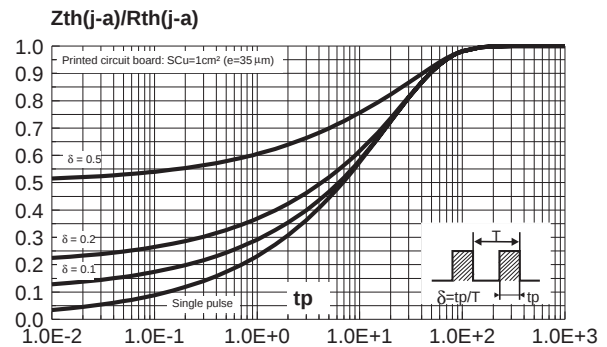


Fig. 5: Variation of thermal resistance junction to ambient versus copper surface under each lead.

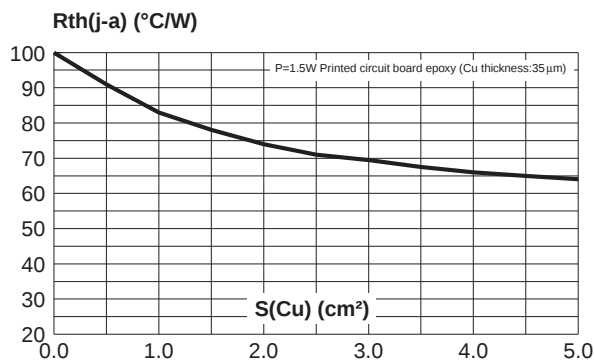


Fig. 6: Reverse leakage current versus reverse voltage applied (typical values).

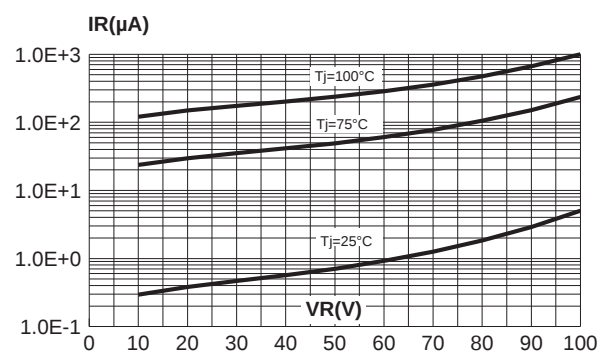


Fig. 7: Junction capacitance versus reverse voltage applied (typical values).

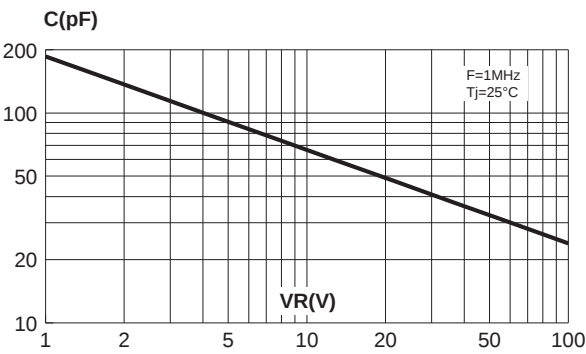
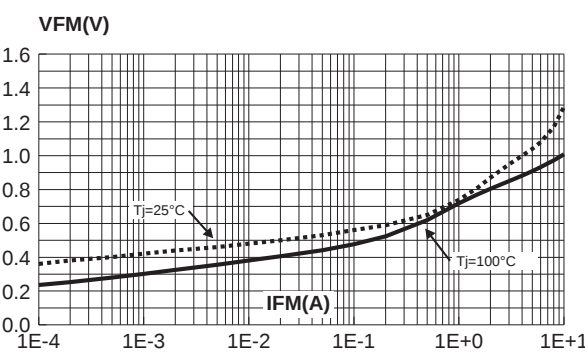
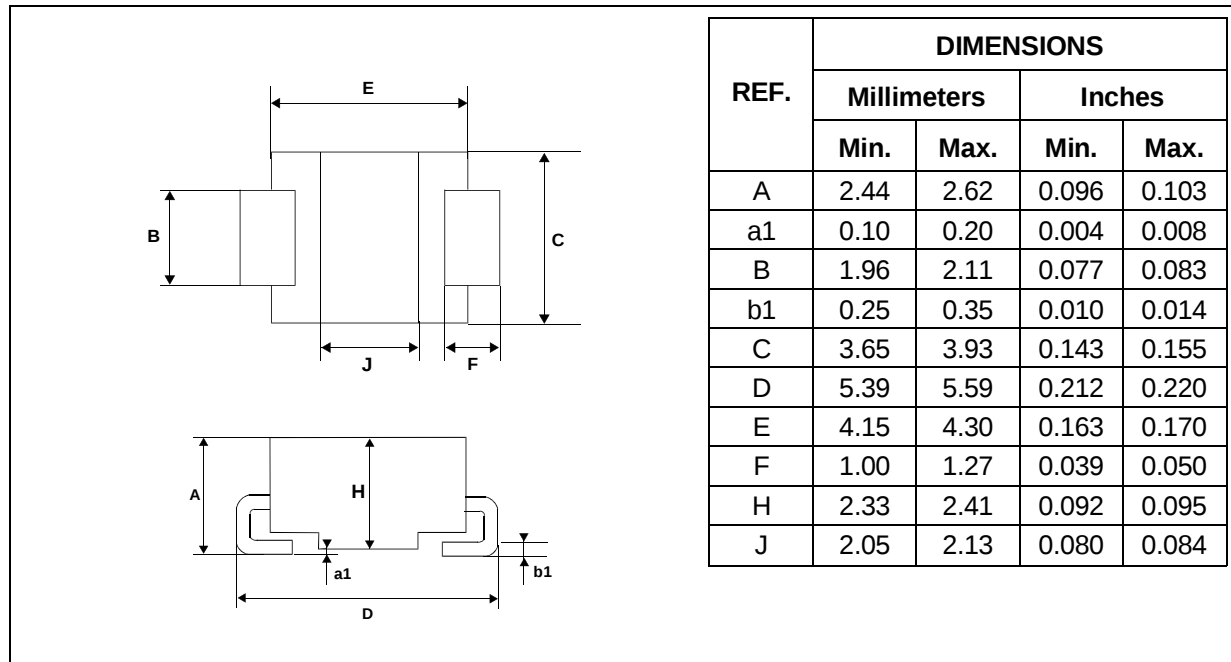
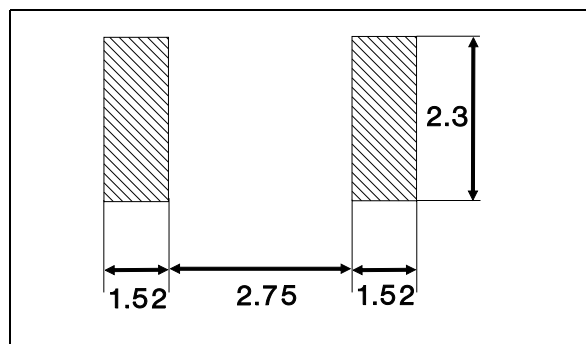


Fig. 8: Forward voltage drop versus forward current (maximum values).



PACKAGE MECHANICAL DATA
 SMB (plastic)

FOOTPRINT DIMENSIONS (in millimeters)
 SMB (plastic)


Voltage (V)	100
Marking	E11

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.