15A, 120V - 200V Trench Schottky Rectifiers

FEATURES

- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Low power loss/ High efficiency
- High forward surge capability
- Ideal for automated placement
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition

TO-277A (SMPC)

Pb-Free

RoHS COMPLIANT

TYPICAL APPLICATIONS

Trench Schottky barrier rectifier is designed for high frequency miniature switched mode power supplies such as adapters, lighting and on-board DC/DC converters.

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Packing code with suffix "G" means green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102
Meet JESD 201 class 1A whisker test

Polarity: As marked

Weight: 95mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

PARAMETER			SYMBOL	TSP15H120S		TSP15H150S		TSP15H200S		UNIT
Marking code				15H120		15H150		15H200		
Maximum repetitive peak reverse voltage			V_{RRM}	120		150		200		V
Maximum average forward rectified current			$I_{F(AV)}$	15						A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load			I_{FSM}	250						A
				TYP	MAX	TYP	MAX	TYP	MAX	
Instantaneous forward voltage (Note 1)	I_F = 7.5A	T_J = 25°C	V_F	0.57	-	0.69	-	0.73	-	V
	I_F = 15A			0.67	0.75	0.75	0.84	0.79	0.89	
	I_F = 7.5A	T_J = 125°C		0.48	-	0.56	-	0.59	-	
	I_F = 15A			0.58	0.66	0.63	0.73	0.66	0.76	
Instantaneous reverse current at rated reverse voltage		T_J = 25°C	I_R	-	250	6	150	6	150	μA
		T_J = 125°C		15	35	4	25	4	25	mA
Typical thermal resistance			$R_{\theta JL}$	9						°C/W
Operating temperature range			T_J	- 55 to +150						°C
Storage temperature range			T_{STG}	- 55 to +150						°C

Note 1: Pulse Test with Pulse Width = 300μs, 1% duty cycle

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
TSP15HXXXS (Note 1, 2)	S1	G	SMPC	1,500/ 7" Plastic reel
	S2		SMPC	6,000/ 13" Plastic reel

Note 1: "XXX" defines voltage from 120V (TSP15H120S) to 200V (TSP15H200S)

Note 2: Whole series with green compound (halogen-free)

EXAMPLE				
PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSP15H120S S1G	TSP15H120S	S1	G	Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

FIG.1- FORWARD CURRENT DERATING CURVE

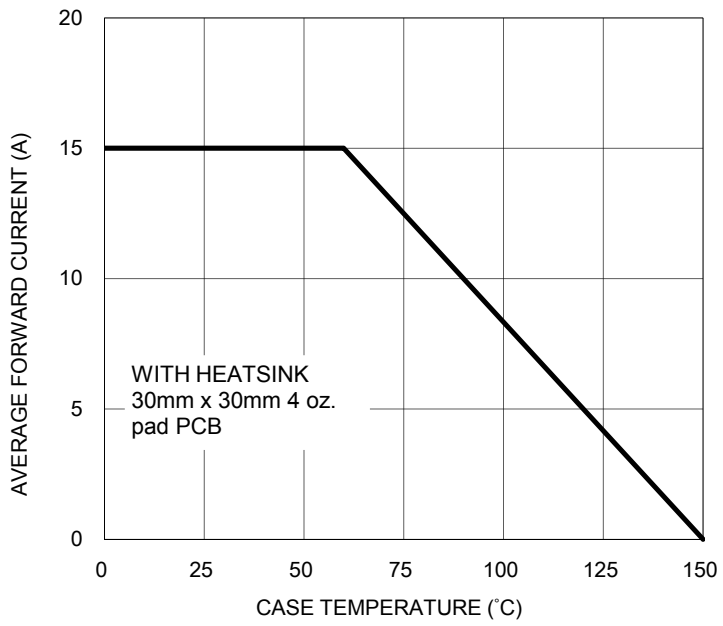


FIG. 2- TYPICAL FORWARD CHARACTERISTICS

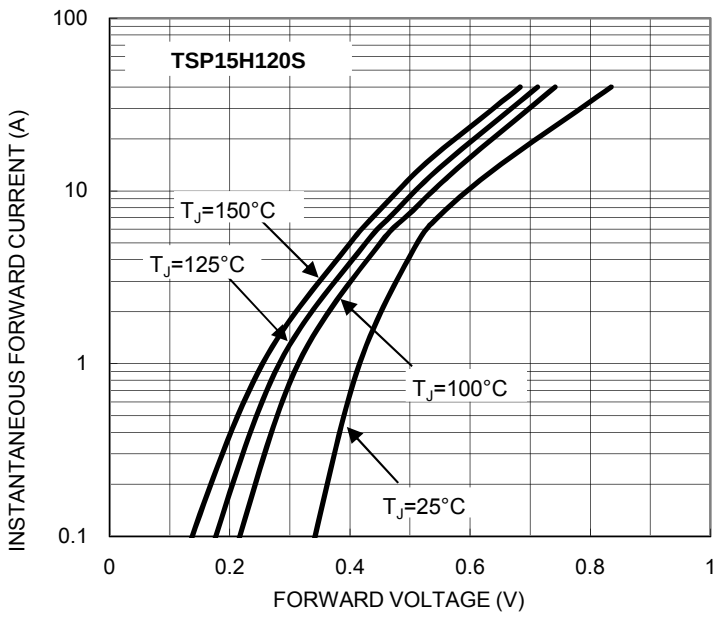


FIG. 3- TYPICAL FORWARD CHARACTERISTICS

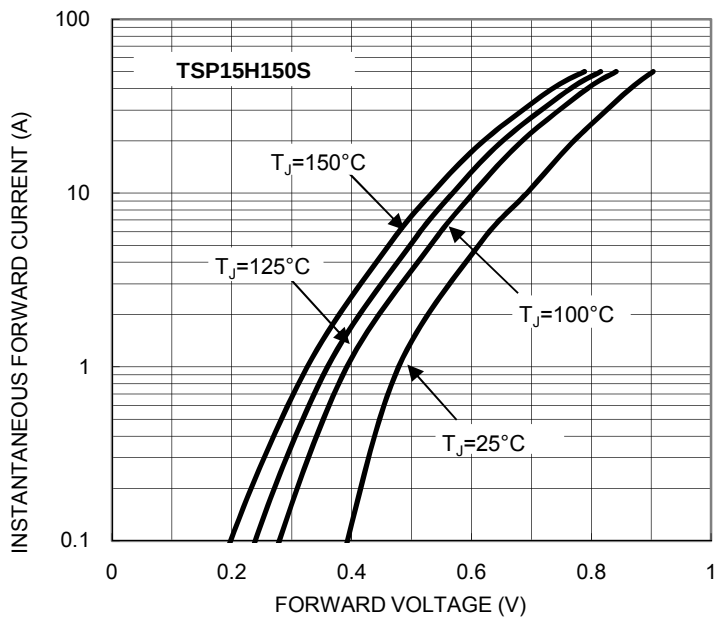


FIG. 4- TYPICAL FORWARD CHARACTERISTICS

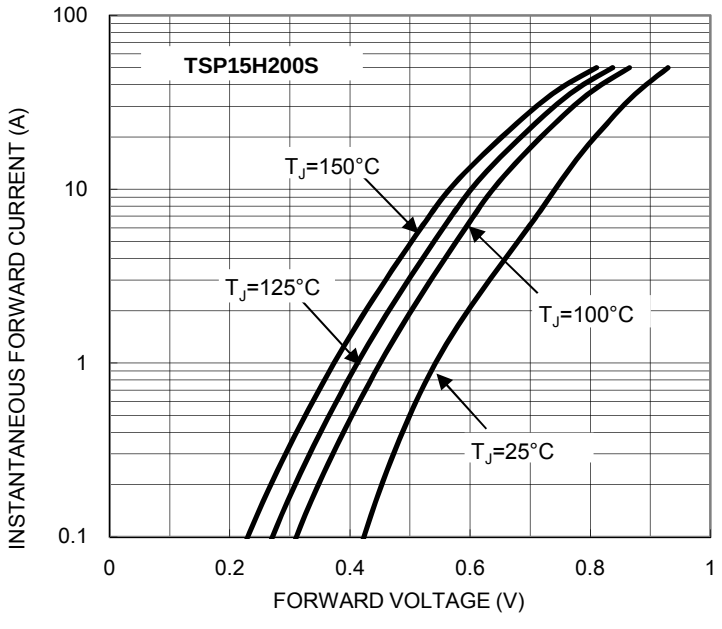


FIG. 5- TYPICAL REVERSE CHARACTERISTICS

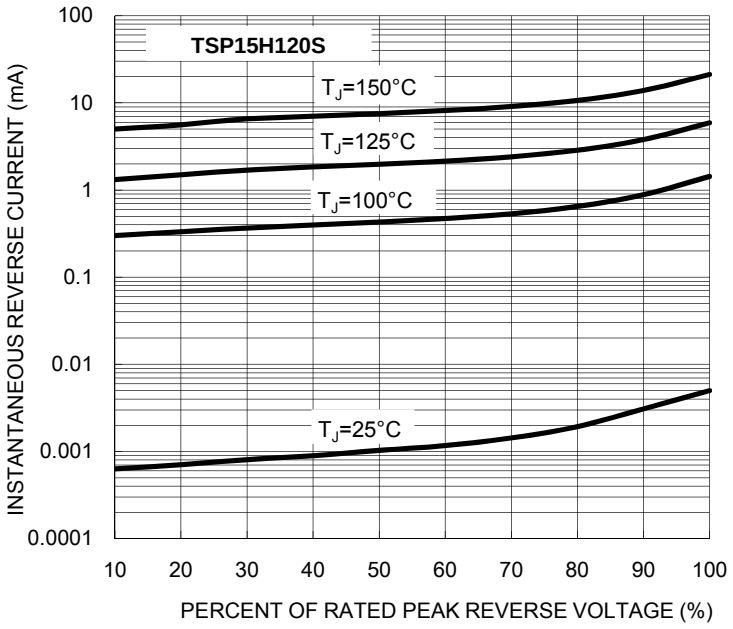


FIG. 6- TYPICAL REVERSE CHARACTERISTICS

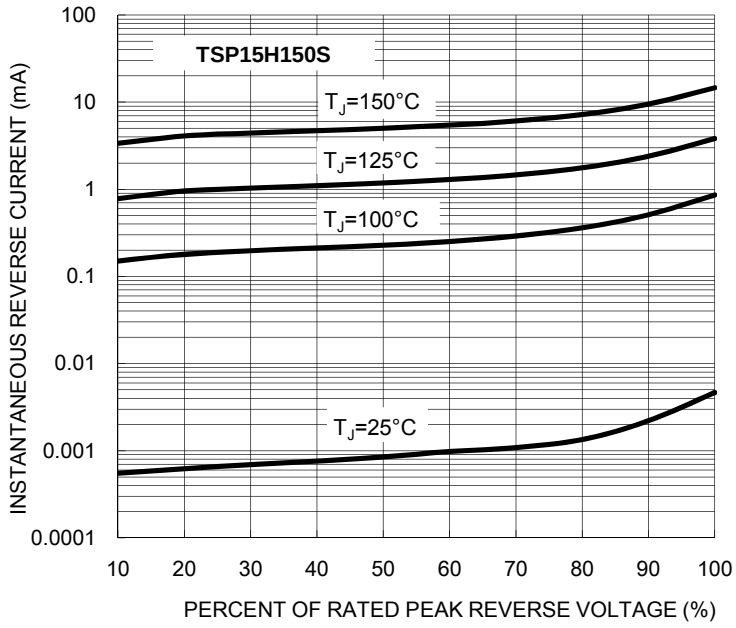


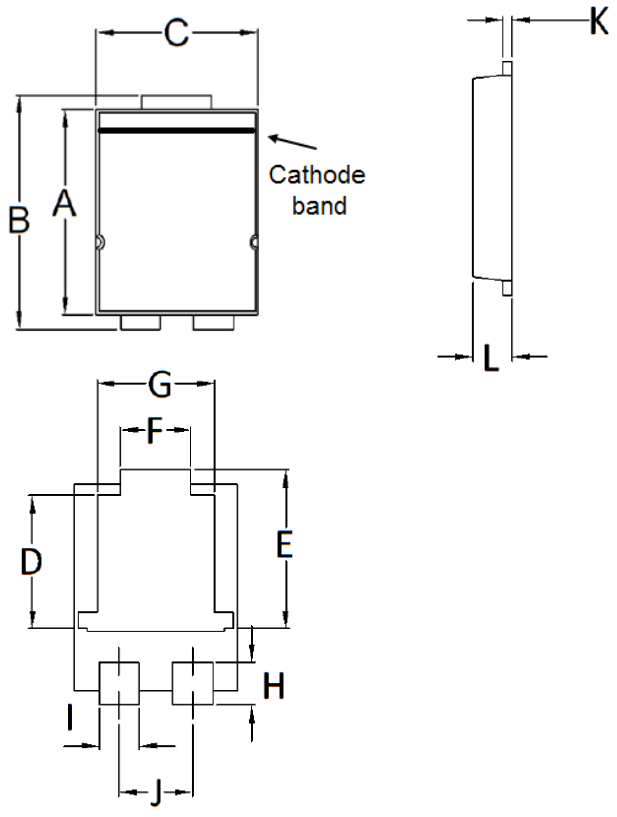
FIG. 7- TYPICAL REVERSE CHARACTERISTICS

FIG. 8- TYPICAL JUNCTION CAPACITANCE

FIG. 9- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

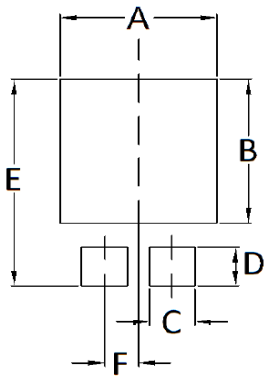
PACKAGE OUTLINE DIMENSIONS

TO-277A (SMPC)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.650	5.750	0.222	0.226
B	6.350	6.650	0.250	0.262
C	4.550	4.650	0.179	0.183
D	3.540	3.840	0.139	0.151
E	4.235	4.535	0.167	0.179
F	1.850	2.150	0.073	0.085
G	3.170	3.470	0.125	0.137
H	1.043	1.343	0.041	0.053
I	1.000	1.300	0.039	0.051
J	1.930	2.230	0.076	0.088
K	0.175	0.325	0.007	0.013
L	1.000	1.200	0.039	0.047

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	4.80	0.189
B	4.72	0.186
C	1.40	0.055
D	1.27	0.050
E	6.80	0.268
F	1.04	0.041

MARKING DIAGRAM

P/N = Marking Code
YW = Date Code
F = Factory Code

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