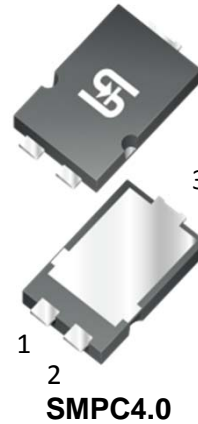


## 5A, 100V - 150V Trench Schottky Rectifiers

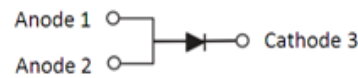
### FEATURES

- 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



### 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:** SMPC4.0

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:** Indicated by cathode band

**Weight:** 90mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25°C unless otherwise noted)										
PARAMETER		SYMBOL	TSPB5H 100S		TSPB5H 120S		TSPB5H 150S		UNIT	
Marking code			B5H100		B5H120		B5H150			
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	100		120		150		V	
Maximum average forward rectified current		I <sub>F(AV)</sub>	5		5		5		A	
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load		I <sub>FSM</sub>	100		100		100		A	
Voltage rate of change (Rated V <sub>R</sub> )		dV/dt	10000		10000		10000		V/μs	
			TYP	MAX	TYP	MAX	TYP	MAX		
Instantaneous forward voltage (Note1)	I <sub>F</sub> = 5A	V <sub>F</sub>	T <sub>J</sub> = 25°C	0.59	0.66	0.66	0.74	0.74	0.84	V
	I <sub>F</sub> = 5A		T <sub>J</sub> = 125°C	0.53	0.60	0.56	0.64	0.60	0.70	
Instantaneous reverse current at rated reverse voltage		I <sub>R</sub>	T <sub>J</sub> = 25°C	-	150	-	150	-	100	μA
			T <sub>J</sub> = 125°C	8	18	8	18	2	12	mA
Typical thermal resistance		R <sub>θJL</sub>	15		15		15		°C/W	
Operating junction temperature range		T <sub>J</sub>	- 55 to +150		- 55 to +150		- 55 to +150		°C	
Storage temperature range		T <sub>STG</sub>	- 55 to +150		- 55 to +150		- 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
TSPB5H1xxS (Note 1, 2)	S1	G	SMPC4.0	1,500/ 7" Plastic reel
	S2		SMPC4.0	6,000/ 13" Plastic reel

Note 1: "xx" defines voltage from 100V (TSPB5H100S) to 150V (TSPB5H150S)

Note 2: Whole series with green compound

**EXAMPLE**

PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSPB5H100S S1G	TSPB5H100S	S1	G	Green compound

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

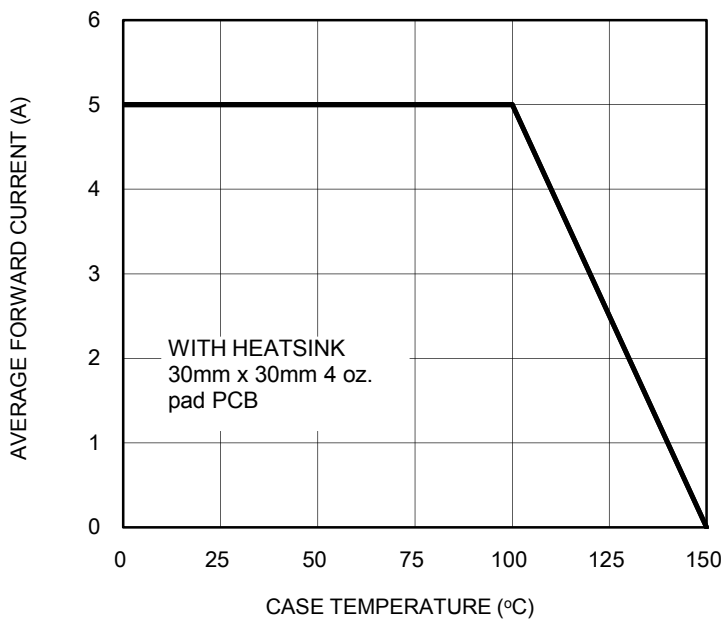


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

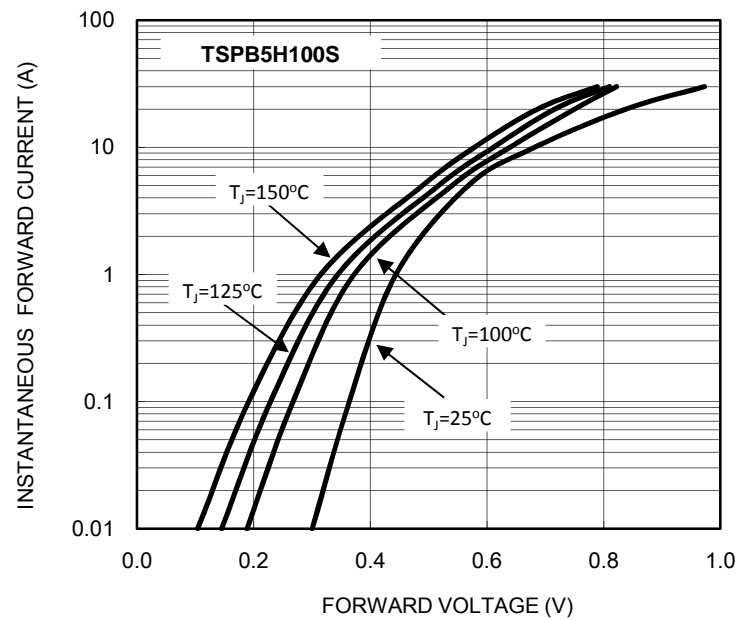


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

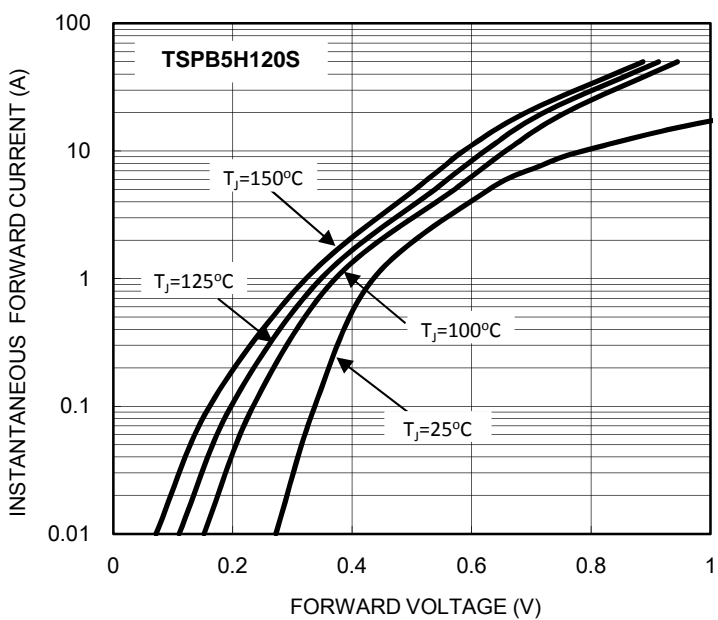


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

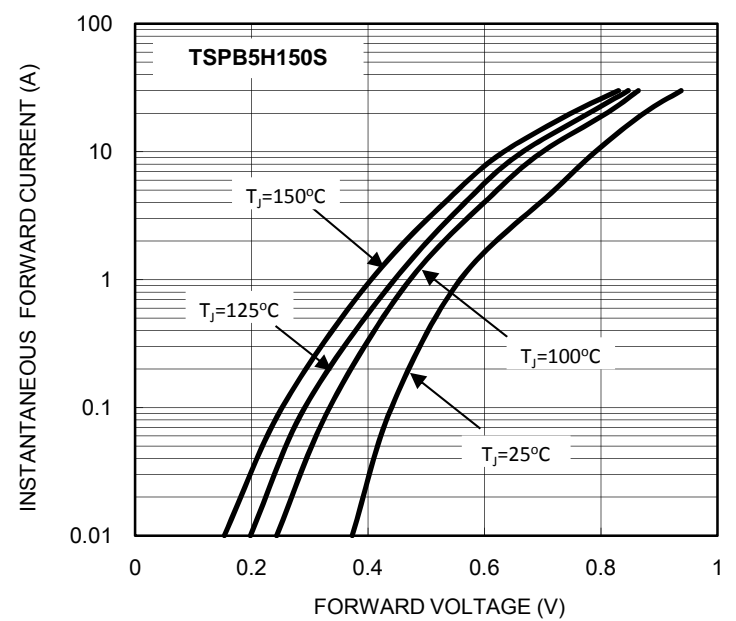


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

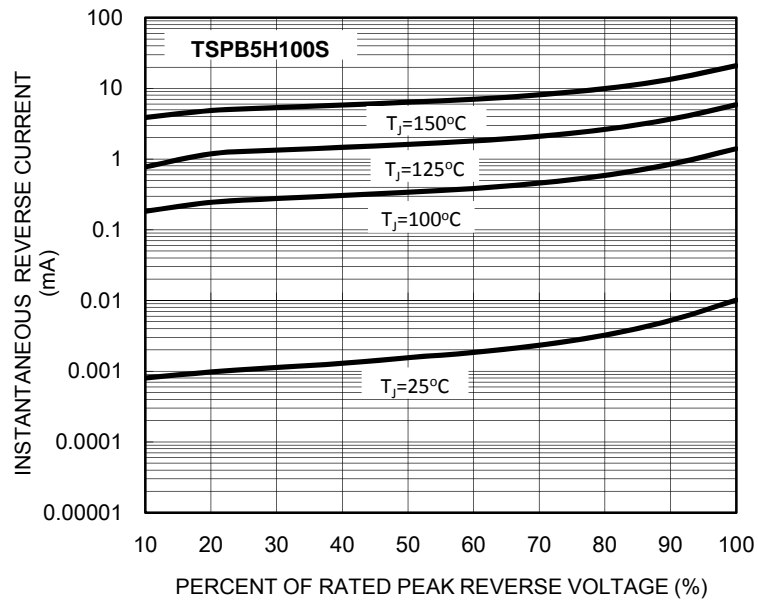


FIG. 6 TYPICAL REVERSE CHARACTERISTICS

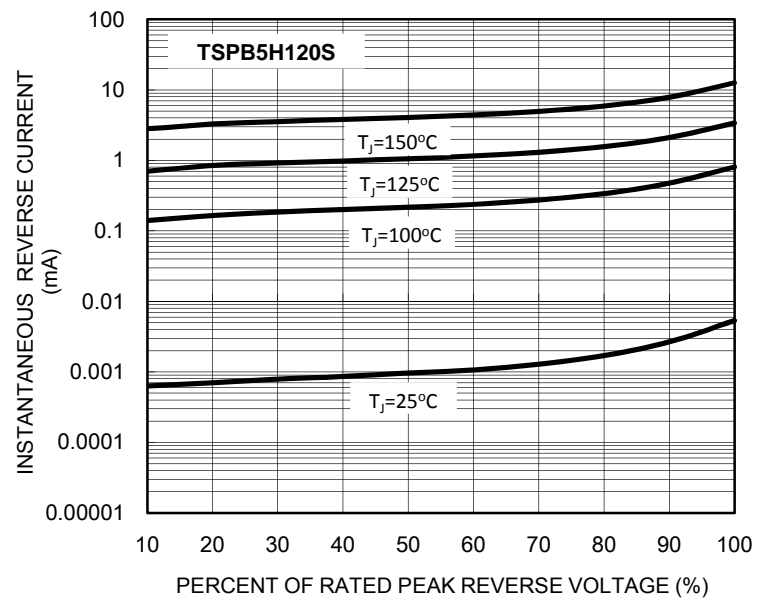


FIG. 7 TYPICAL REVERSE CHARACTERISTICS

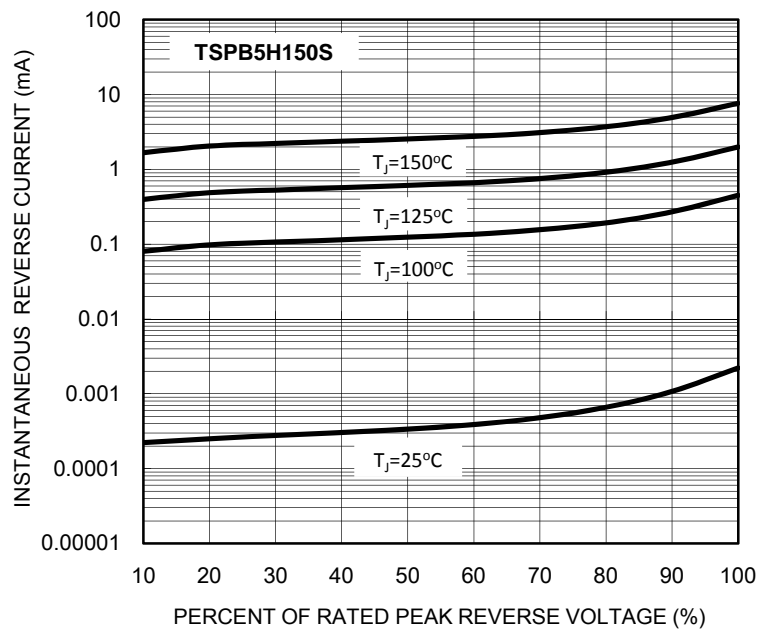
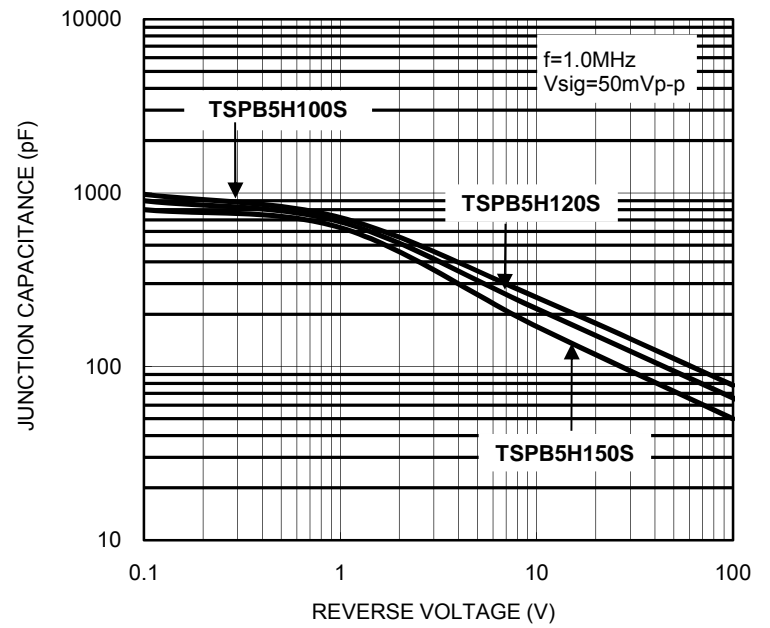
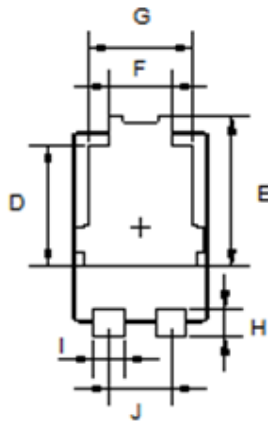
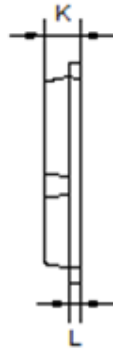
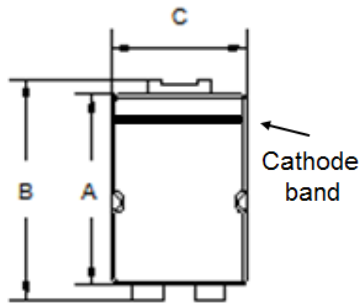


FIG. 8 TYPICAL JUNCTION CAPACITANCE

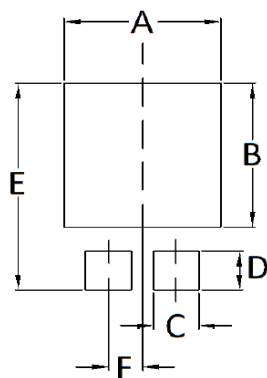


PACKAGE OUTLINE DIMENSIONS  
**SMPC4.0**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.55	5.65	0.219	0.222
B	6.35	6.65	0.250	0.262
C	3.95	4.05	0.156	0.159
D	3.40	3.70	0.134	0.146
E	4.25	4.55	0.167	0.179
F	1.69	1.99	0.067	0.078
G	2.95	3.25	0.116	0.128
H	0.70	1.00	0.028	0.039
I	0.75	1.05	0.030	0.041
J	1.69	1.99	0.067	0.078
K	1.00	1.20	0.039	0.047
L	0.20	0.40	0.008	0.016

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	0.92	0.036

MARKING DIAGRAM



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

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