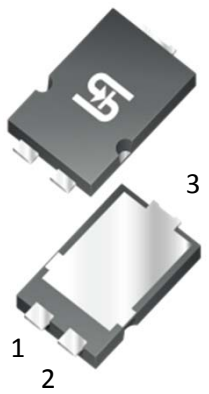
5A, 100V - 150V Trench Schottky Rectifiers

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
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



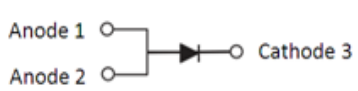
SMPC4.0

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: SMPC4.0

Molding compound, UL flammability classification rating 94V-0

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_A = 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_{RRM}	100		120		150		V
Maximum average forward rectified current			$I_{F(AV)}$	5						A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode			I_{FSM}	100						A
Voltage rate of change (Rated V_R)			dV/dt	10000						V/μs
				TYP	MAX	TYP	MAX	TYP	MAX	
Instantaneous forward voltage per diode (Note1)	I_F = 5A	T_J = 25°C	V_F	0.59	0.66	0.66	0.74	0.74	0.84	V
	I_F = 5A	T_J = 125°C		0.53	0.60	0.56	0.64	0.60	0.70	
Instantaneous reverse current per diode at rated reverse voltage		T_J = 25°C	I_R	-	150	-	150	-	100	μA
		T_J = 125°C		8	18	8	18	2	12	mA
Typical thermal resistance per diode			$R_{\theta JL}$	15						°C/W
Operating junction 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

ORDER INFORMATION (EXAMPLE)

TSPB5H100S S1G

- Green compound code
- Packing code
- Part no.

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

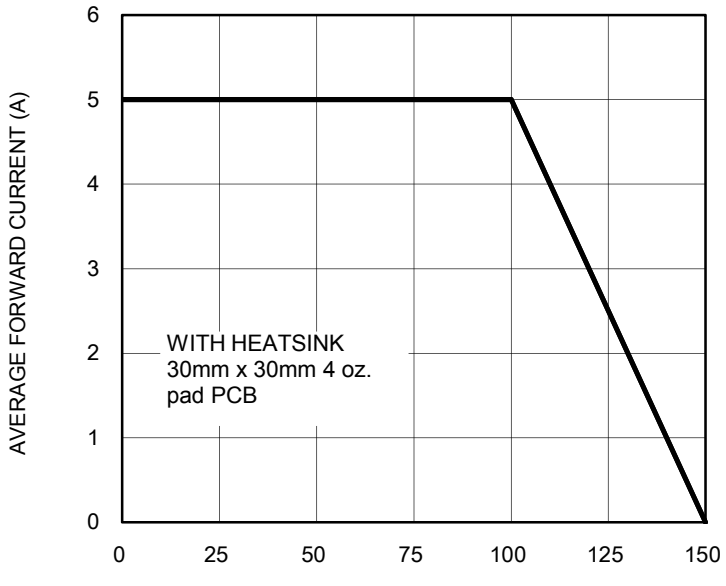


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

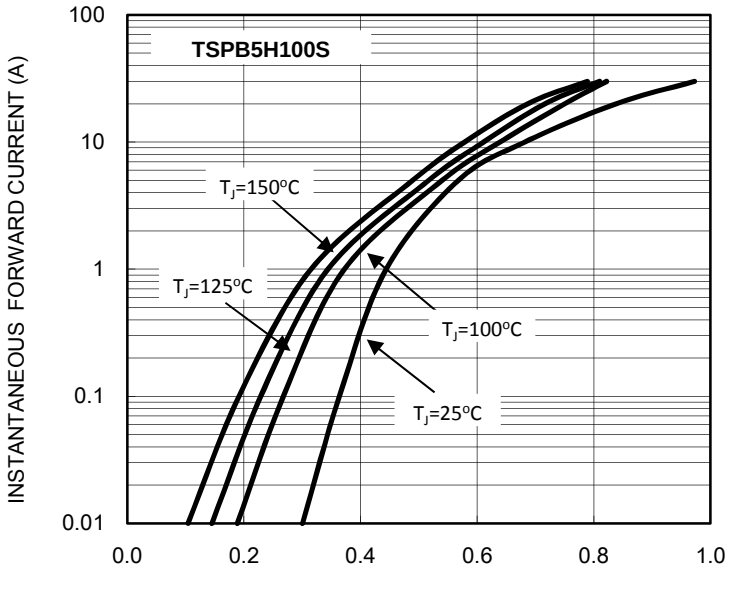


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

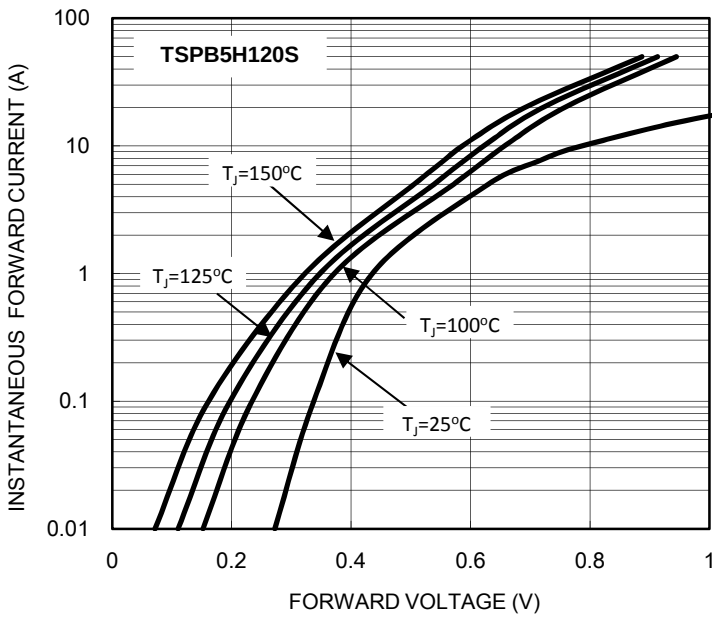


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

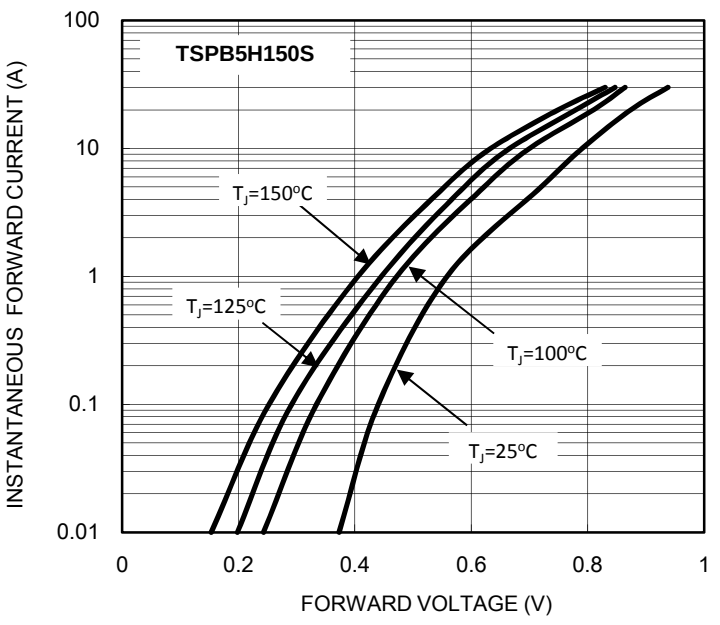


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

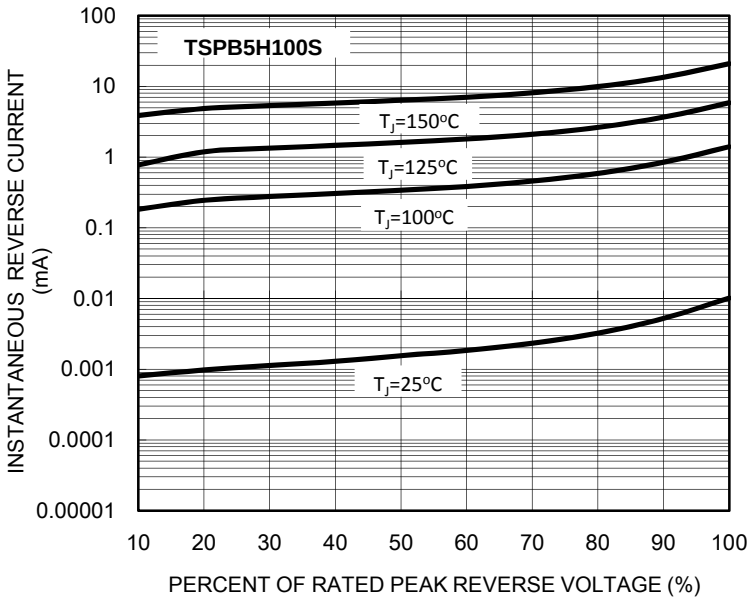


FIG. 6 TYPICAL REVERSE CHARACTERISTICS

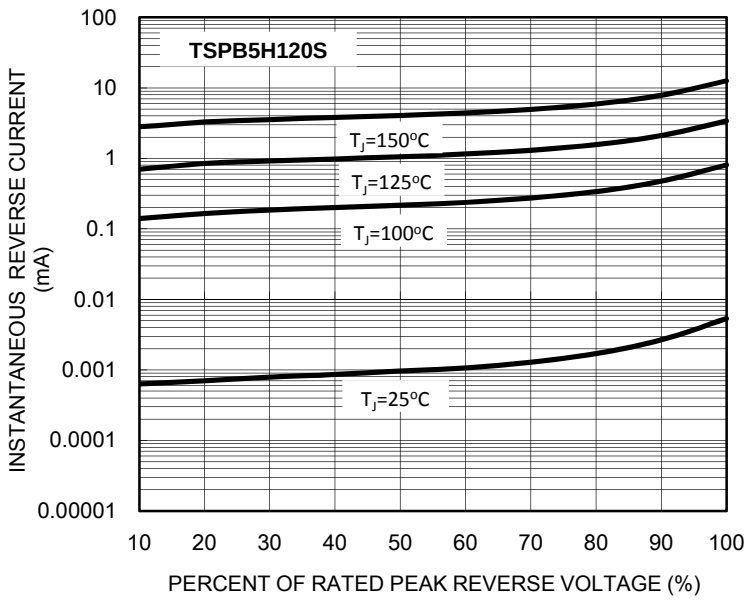


FIG. 7 TYPICAL REVERSE CHARACTERISTICS

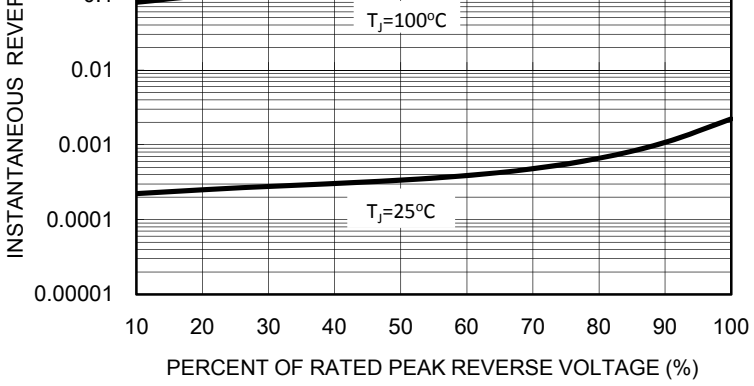
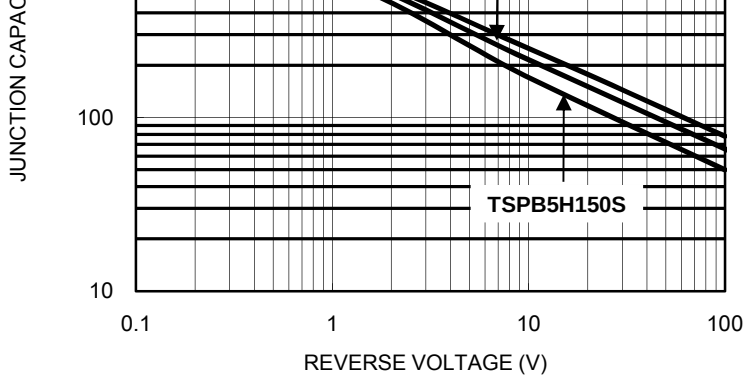
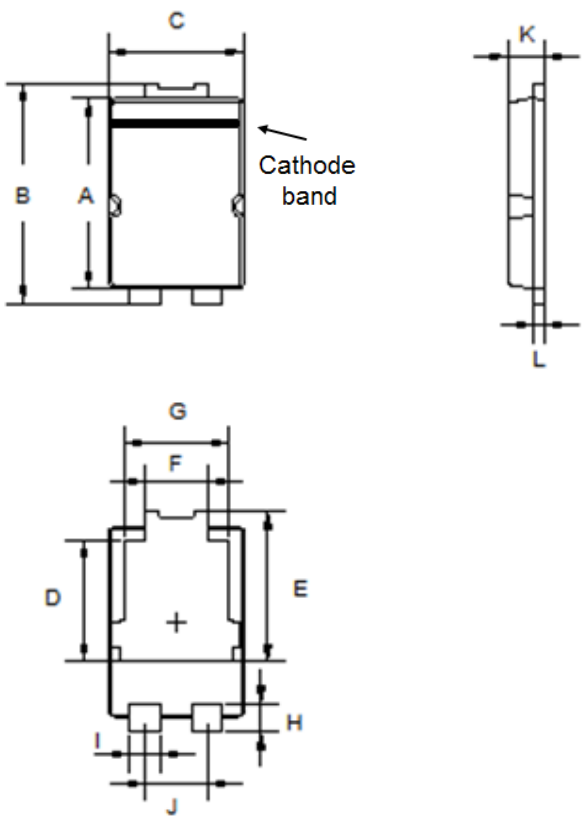


FIG. 8 TYPICAL JUNCTION CAPACITANCE



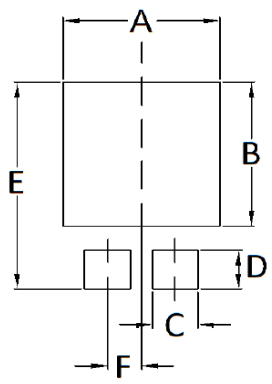
PACKAGE OUTLINE DIMENSIONS

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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.