

Trench Schottky Rectifier

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



TYPICAL APPLICATIONS

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

MECHANICAL DATA

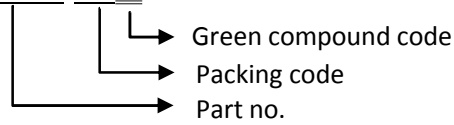
- Case:** SMPC4.0
- Molding compound, UL flammability classification rating 94V-0
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal:** Matte tin plated leads, solderable per JESD22-B102
- Meet JESD 201 class 2 whisker test
- Polarity:** Indicated by cathode band
- Weight:** 0.095g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)							
PARAMETER			SYMBOL	TSPB10U45S			UNIT
Marking code				B10U45			
Maximum repetitive peak reverse voltage			V _{RRM}	45			V
Maximum average forward rectified current			I _{F(AV)}	10			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load			I _{FSM}	275			A
				MIN	TYP	MAX	
Maximum instantaneous forward voltage (Note 1)	I _F = 5A	T _J = 25°C	V _F	-	0.37	-	V
	I _F = 10A			-	0.42	0.46	
	I _F = 5A	T _J = 125°C		-	0.28	-	
	I _F = 10A			-	0.37	0.41	
Maximum instantaneous reverse current at rated reverse voltage		T _J = 25°C	I _R	-	150	300	μA
		T _J = 125°C		-	50	140	mA
Maximum DC reverse voltage			V _{DC}	32			V
Typical thermal resistance per diode			R _{θJL}	25			°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

ORDER INFORMATION (EXAMPLE)

TSPB10U45S S1G



RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 FORWARD CURRENT DERATING CURVE

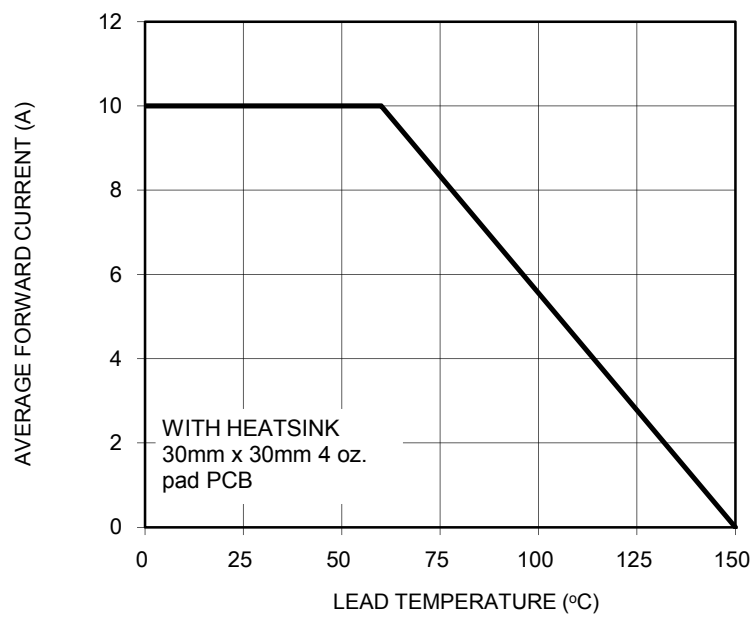


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

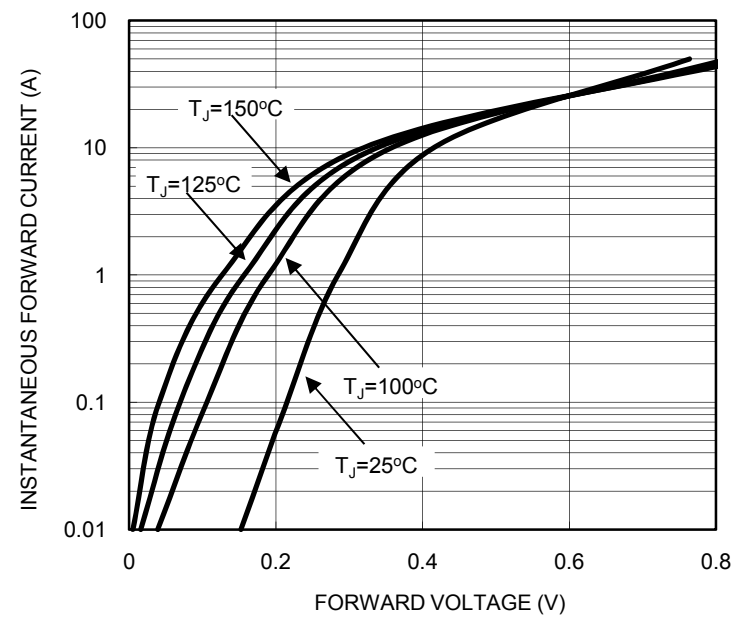


FIG. 3 TYPICAL REVERSE CHARACTERISTICS

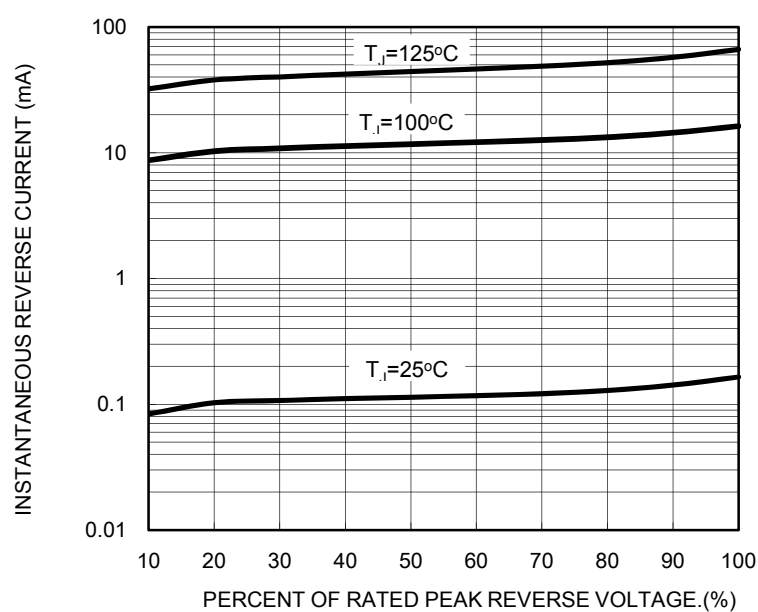
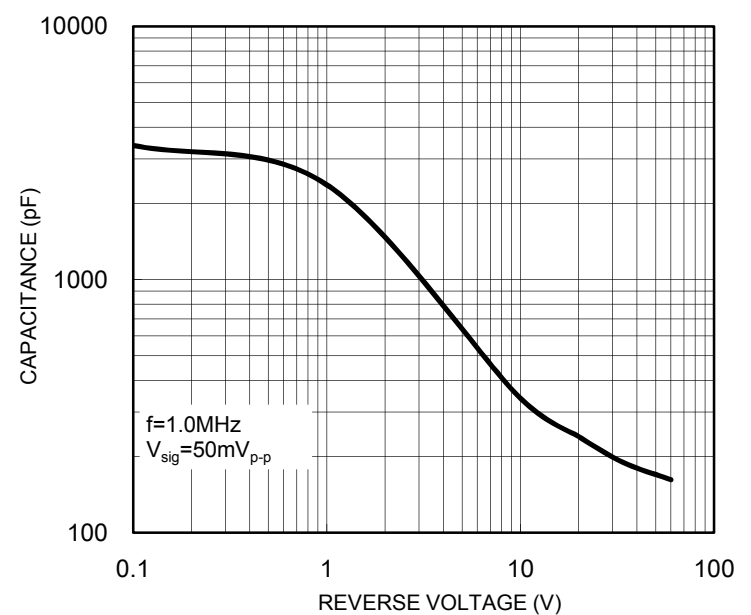
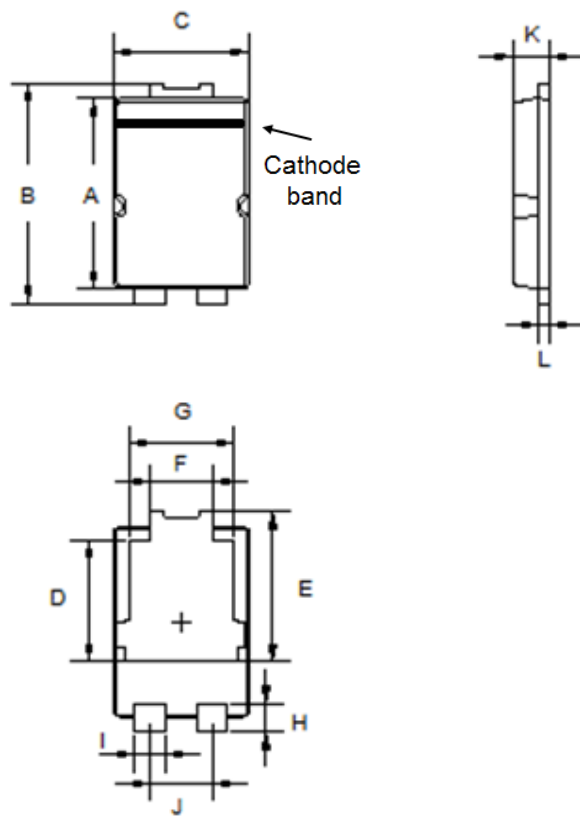


FIG. 4 TYPICAL JUNCTION CAPACITANCE

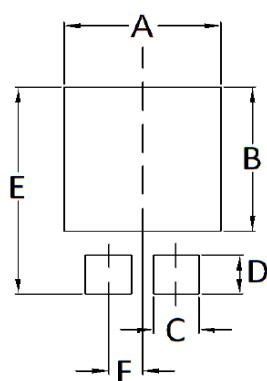


PACKAGE OUTLINE DIMENSIONS
SMPC4.0



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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