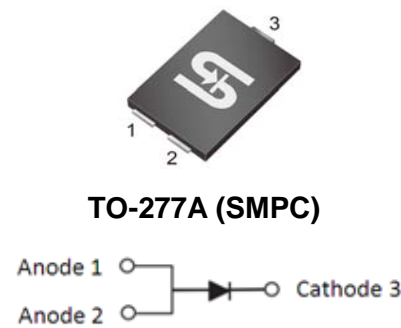


## Trench Schottky Rectifier

### 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



### 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:** TO-277A (SMPC)

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:** 95mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)								
PARAMETER			SYMBOL	TSP10H45S	TSP10H60S			UNIT
Maximum repetitive peak reverse voltage			V <sub>RRM</sub>	45	60			V
Maximum RMS voltage			V <sub>RMS</sub>	32	42			V
Maximum average forward rectified current			I <sub>F(AV)</sub>	10				A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load			I <sub>FSM</sub>	180				A
				TYP	MAX	TYP	MAX	
Instantaneous forward voltage (Note 1)	I <sub>F</sub> = 5A	T <sub>J</sub> = 25°C	V <sub>F</sub>	0.44	-	0.45	-	V
	I <sub>F</sub> = 10A			0.48	0.57	0.52	0.64	
	I <sub>F</sub> = 5A	T <sub>J</sub> = 125°C		0.34	-	0.36	-	
	I <sub>F</sub> = 10A			0.41	0.5	0.46	0.63	
Maximum instantaneous reverse current at rated reverse voltage		T <sub>J</sub> = 25°C	I <sub>R</sub>	150				μA
		T <sub>J</sub> = 125°C		25				mA
Typical thermal resistance			R <sub>θJL</sub>	10				°C/W
Operating junction temperature range			T <sub>J</sub>	- 55 to +150				°C
Storage temperature range			T <sub>STG</sub>	- 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
TSP10HXXS (Note 1, 2)	S1	G	SMPC	1,500/ 7" Plastic reel
	S2		SMPC	6,000/ 13" Plastic reel

Note 1: "XX" defines voltage from 45V (TSP10H45S) to 60V (TSP10H60S)

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

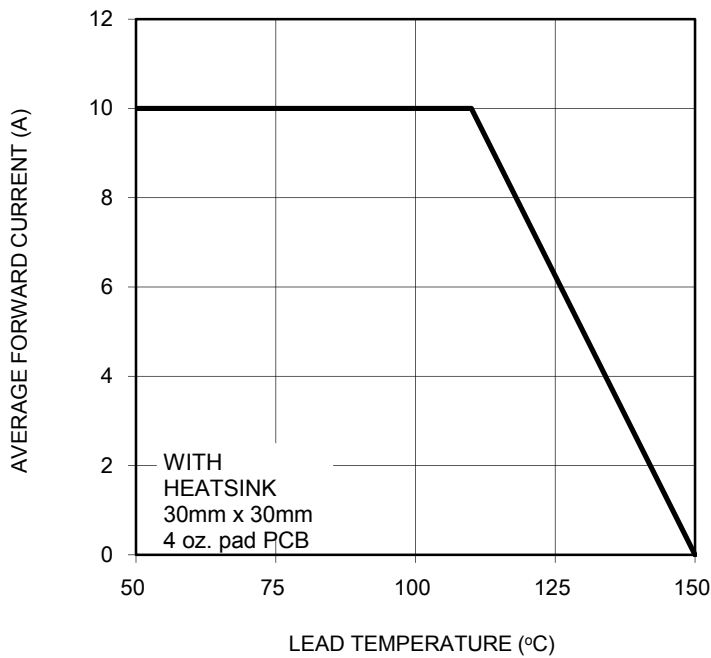
**EXAMPLE**

PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSP10H45S S1G	TSP10H45S	S1	G	Green compound

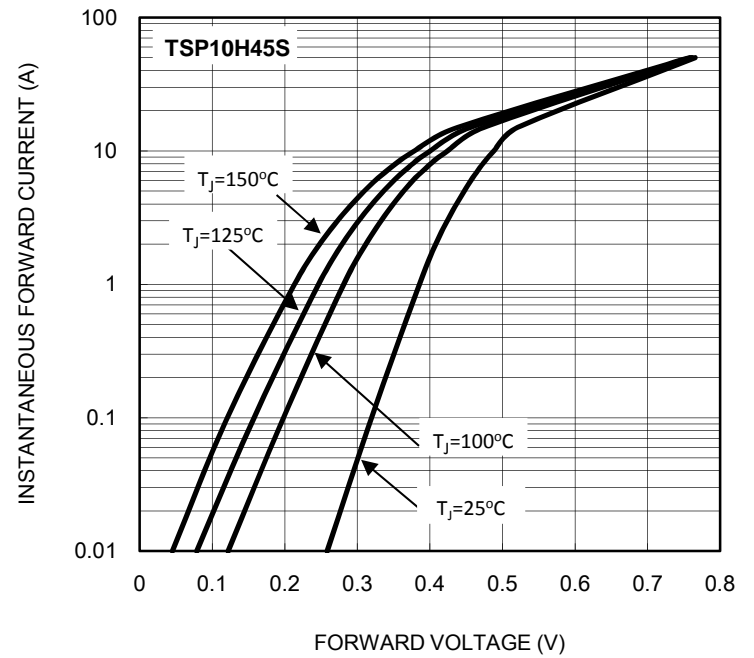
**RATINGS AND CHARACTERISTICS CURVES**

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

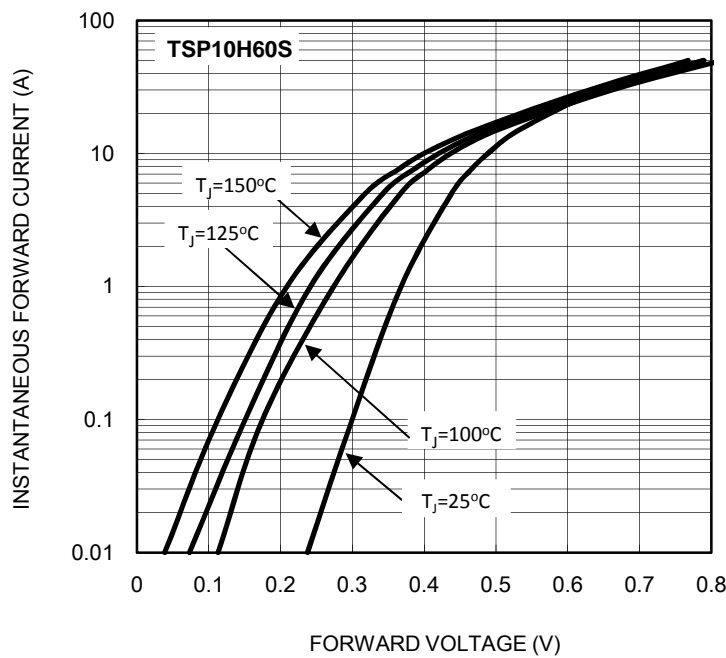
**FIG.1 FORWARD CURRENT DERATING CURVE**



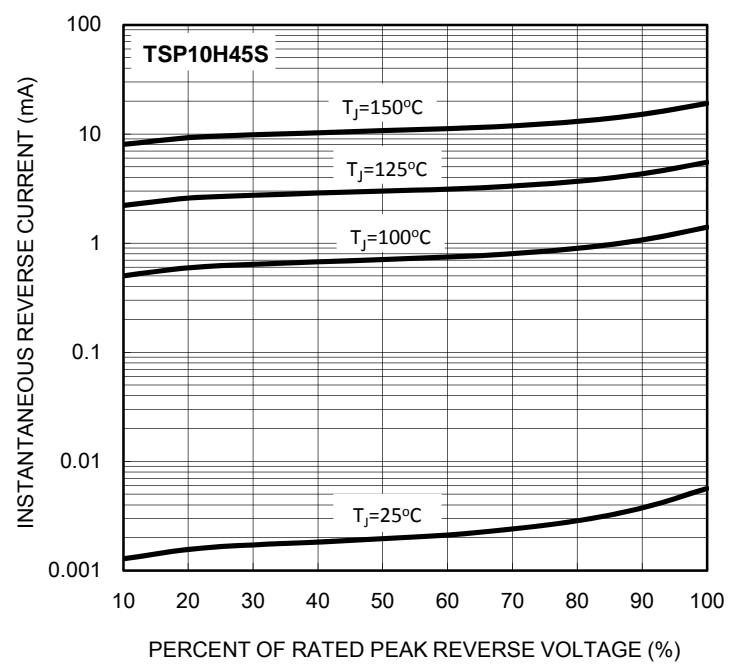
**FIG.2 TYPICAL FORWARD CHARACTERISTICS**



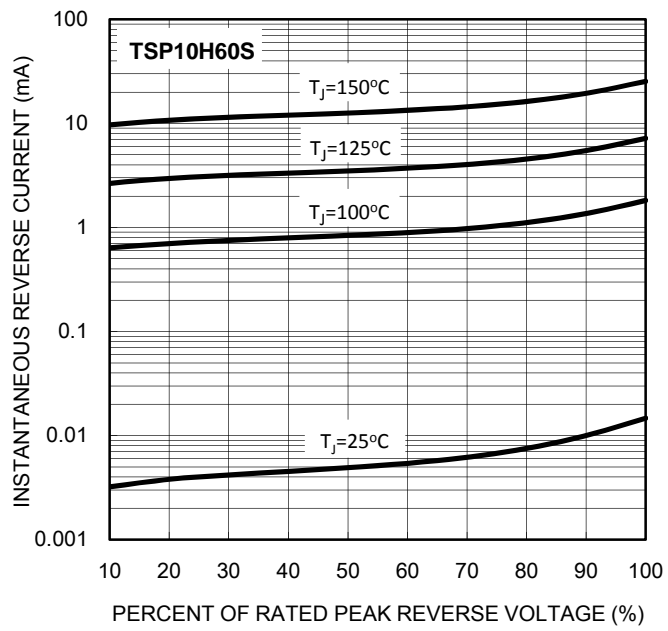
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



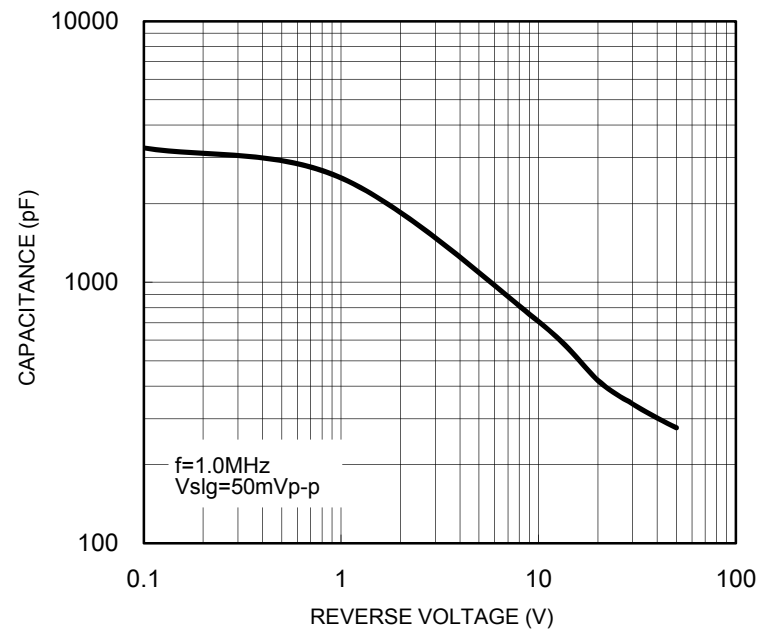
**FIG.4 TYPICAL REVERSE CHARACTERISTICS**



**FIG.5 TYPICAL REVERSE CHARACTERISTICS**

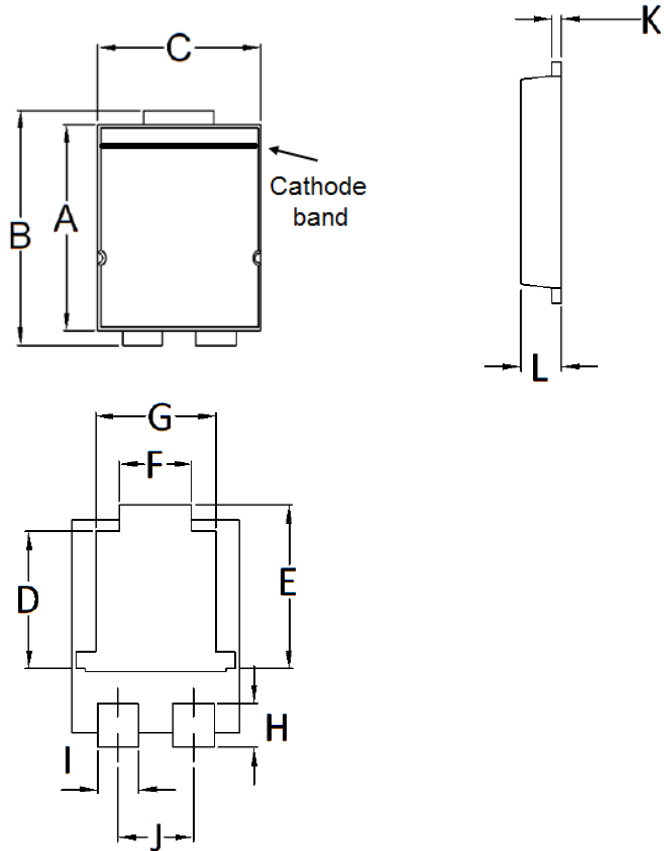


**FIG.6 TYPICAL JUNCTION CAPACITANCE**



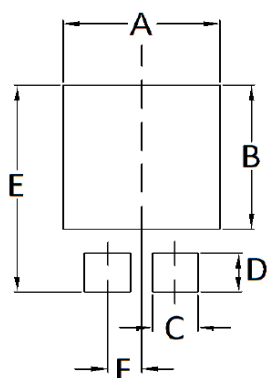
PACKAGE OUTLINE DIMENSIONS

**TO-277A (SMPC)**



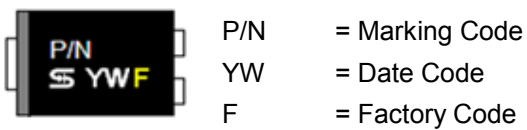
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.650	5.750	0.222	0.226
B	6.350	6.650	0.250	0.262
C	4.550	4.650	0.179	0.183
D	3.540	3.840	0.139	0.151
E	4.235	4.535	0.167	0.179
F	1.850	2.150	0.073	0.085
G	3.170	3.470	0.125	0.137
H	1.043	1.343	0.041	0.053
I	1.000	1.300	0.039	0.051
J	1.930	2.230	0.076	0.088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



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