10A, 100V - 120V 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 meets UL 94 V-0 flammability rating

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 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	TSP10U100S		TSP10U120S		UNIT
Marking code				10U100		10U120		
Maximum repetitive peak reverse voltage			V_{RRM}	100		120		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 per diode			I_{FSM}	140				A
				TYP	MAX	TYP	MAX	
Maximum instantaneous forward voltage per diode (Note 1)	I_F = 5A	T_J = 25°C	V_F	0.51	-	0.56	-	V
	I_F = 10A			0.60	0.68	0.68	0.78	
	I_F = 5A	T_J = 125°C		0.42	-	0.49	-	
	I_F = 10A			0.52	0.60	0.57	0.67	
Maximum instantaneous reverse current per diode at rated reverse voltage		T_J = 25°C	I_R	10	150	10	150	μA
		T_J = 125°C		6	30	6	30	mA
Typical thermal resistance			$R_{\theta JL}$	11				°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
TSP10U1xxS (Note 1,2)	S1	G	SMPC	1,500/ 7" Plastic reel
	S2		SMPC	6,000/ 13" Plastic reel

Note 1: "xx" defines voltage from 100V (TSP10U100S) to 120V (TSP10U120S)

Note 2: Whole series with green compound

EXAMPLE				
PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSP10U100S S1G	TSP10U100S	S1	G	Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

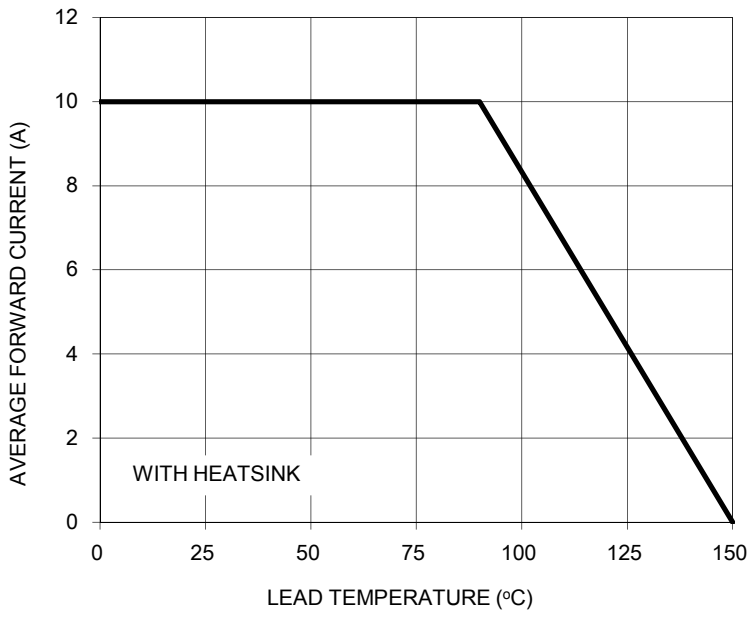


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

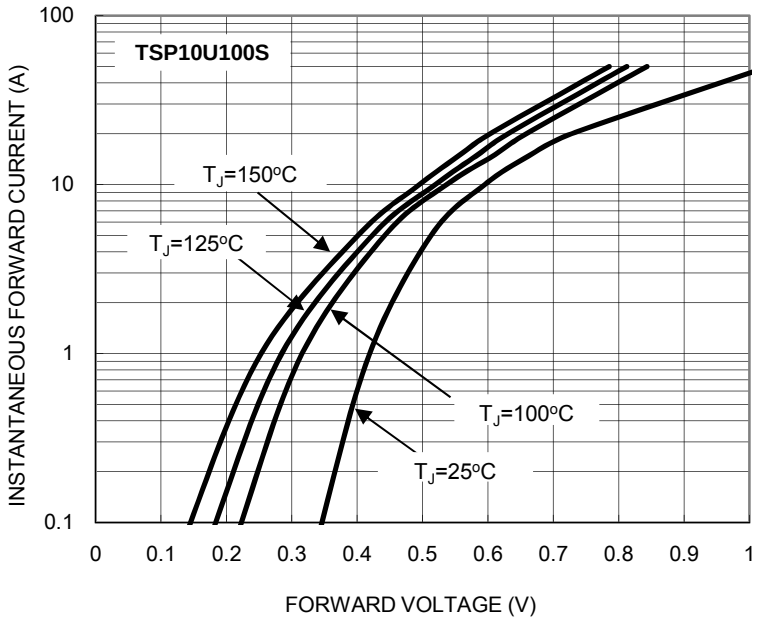


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

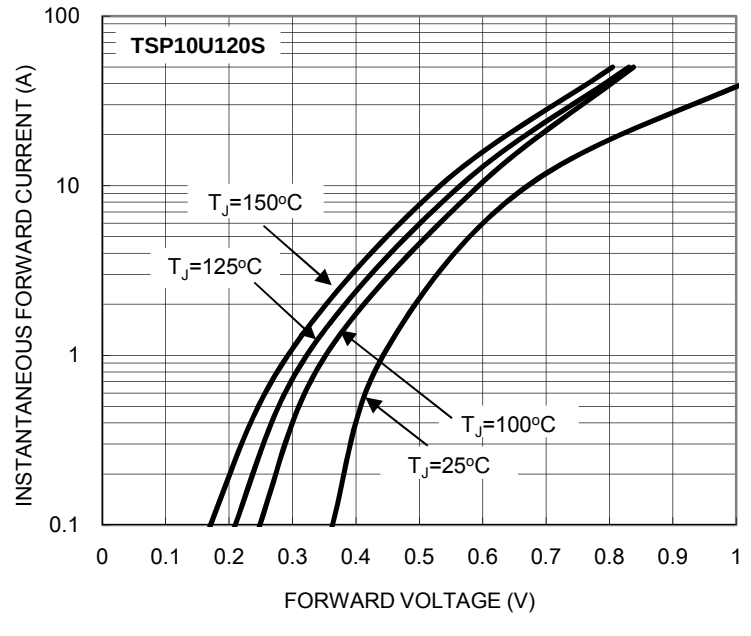


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

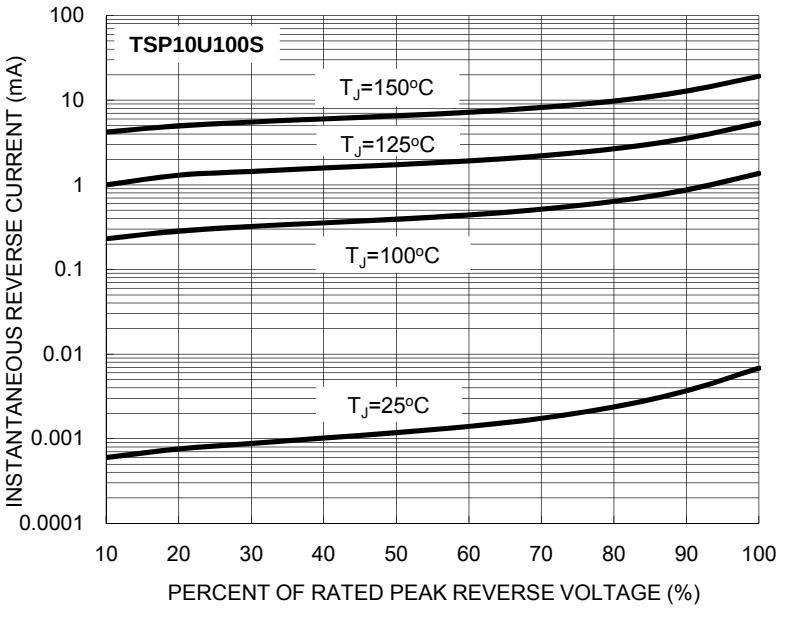


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

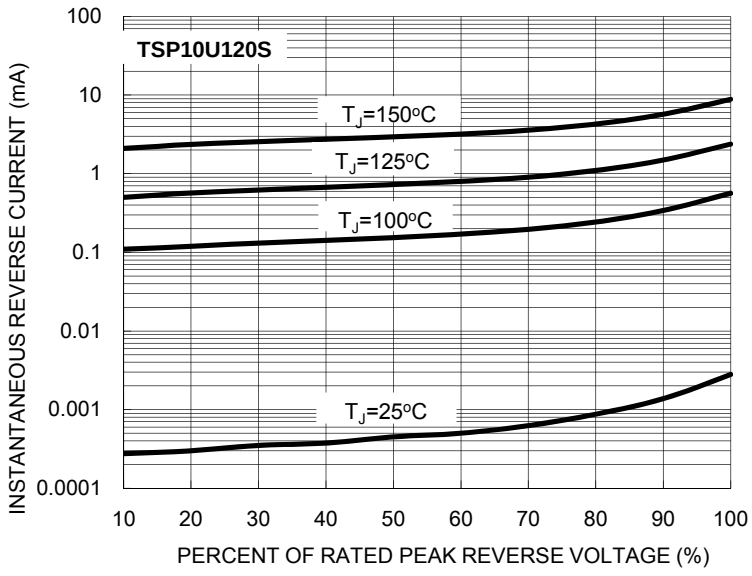


FIG. 6 TYPICAL JUNCTION CAPACITANCE

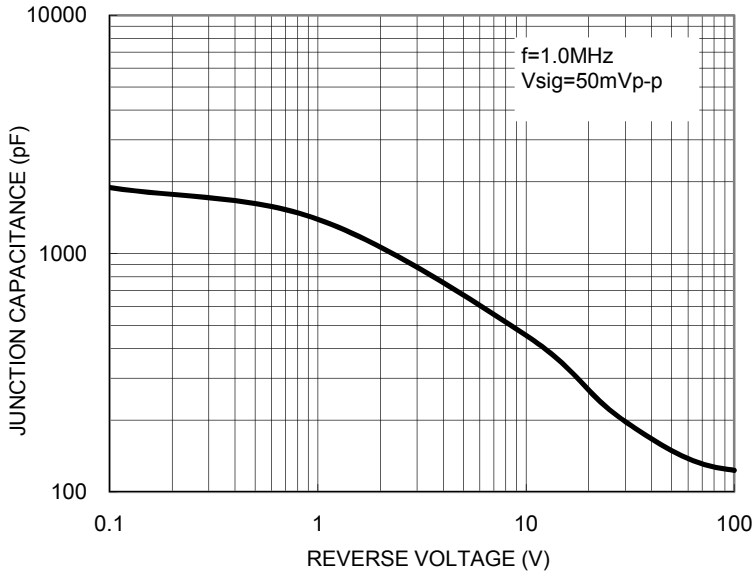
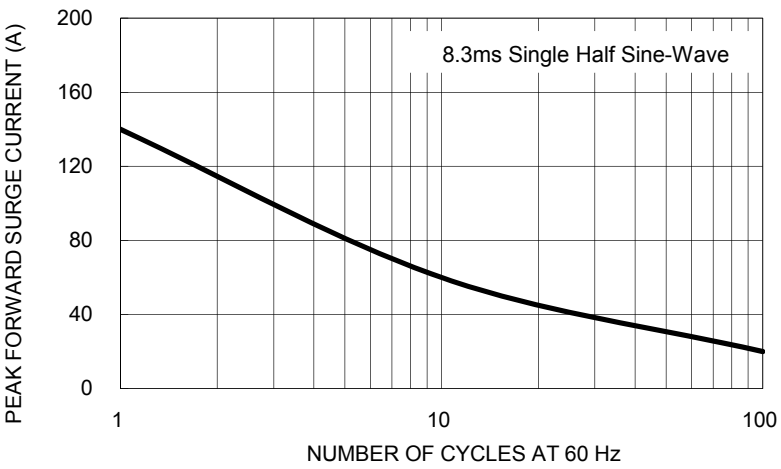
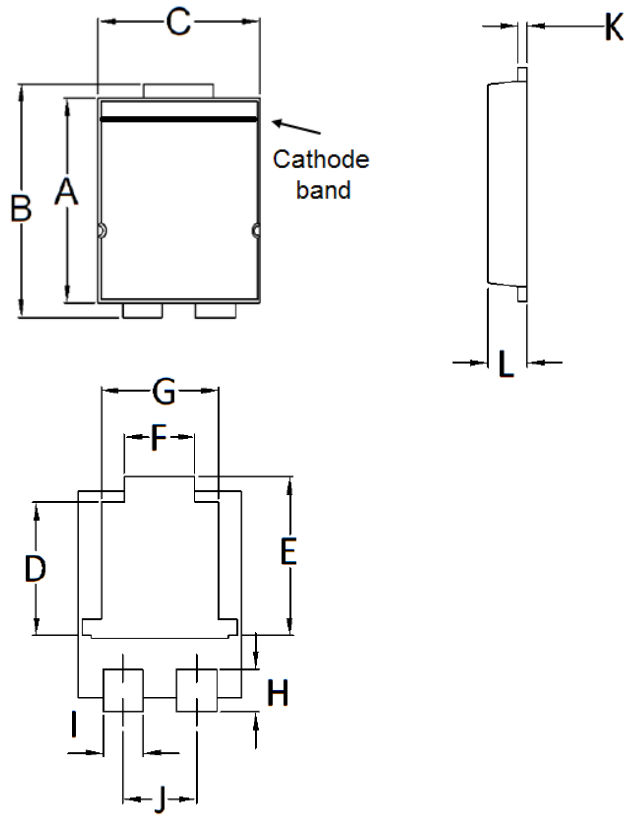


FIG. 7 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



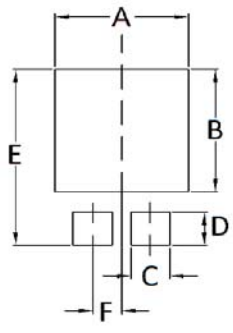
PACKAGE OUTLINE DIMENSIONS

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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