

## Trench MOS Barrier Schottky Rectifier

### FEATURES

- Patented Trench MOS Barrier Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Lower 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



**TO-277A(SMPC)**



### MECHANICAL DATA

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

Molding compound, UL flammability classification rating 94V-0  
Base P/N with suffix "G" on packing code - halogen-free, RoHS compliant

**Terminal :** Matte tin plated leads, solderable per JESD22-B102  
Meet JESD 201 class 1A whisker test

**Polarity :** Indicated by cathode band

**Weight :** 0.095 gram (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)						
PARAMETER	Symbol	TSP15U50S			UNIT	
Marking code		15U50				
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50			V	
Maximum average forward rectified current	I <sub>F(AV)</sub>	15			A	
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	200			A	
Maximum instantaneous forward voltage per diode (Note 1)	V <sub>F</sub>	T <sub>J</sub> = 25°C	MIN	TYP	MAX	V
			-	0.37	-	
		T <sub>J</sub> = 125°C	-	0.40	-	
			-	0.48	0.56	
		T <sub>J</sub> = 25°C	-	0.26	-	
			-	0.31	-	
Maximum instantaneous reverse current per diode at rated reverse voltage	I <sub>R</sub>	T <sub>J</sub> = 25°C	-	140	2000	uA
		T <sub>J</sub> = 125°C	-	60	140	mA
Maximum DC reverse voltage	V <sub>DC</sub>	35			V	
Typical thermal resistance per diode	R <sub>θJC</sub>	11			°C/W	
Operating temperature range	T <sub>J</sub>	- 40 to + 150			°C	
Storage temperature range	T <sub>STG</sub>	- 40 to + 150			°C	

Note1 : Pulse Test with Pulse Width=300μs, 1% Duty Cycle

ORDERING INFORMATION				
PART NO.	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
TSP15U50S	S1	Suffix "G"	SMPC	1500/ 7" Plastic reel
	S2		SMPC	6000/ 13" Plastic reel

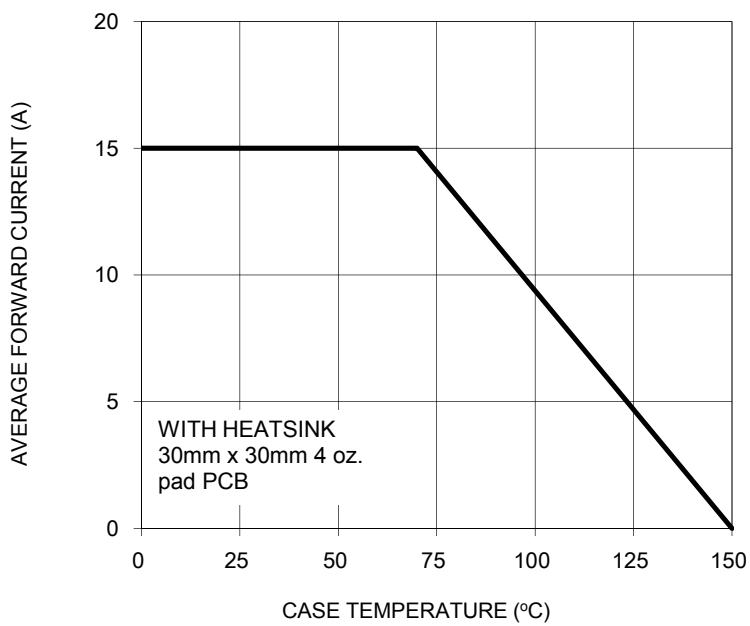
Note : For SMPC: Packing code (Whole series with green compound)

EXAMPLE				
PREFERRED P/N	PART NO.	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
TSP15U50S S1G	TSP15U50S	S1	G	Green compound

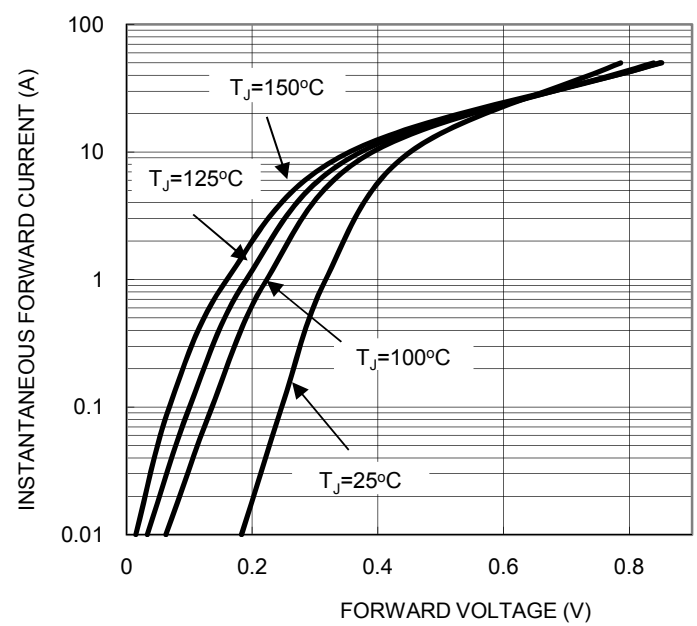
**RATINGS AND CHATACTERISTICS CURVES**

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

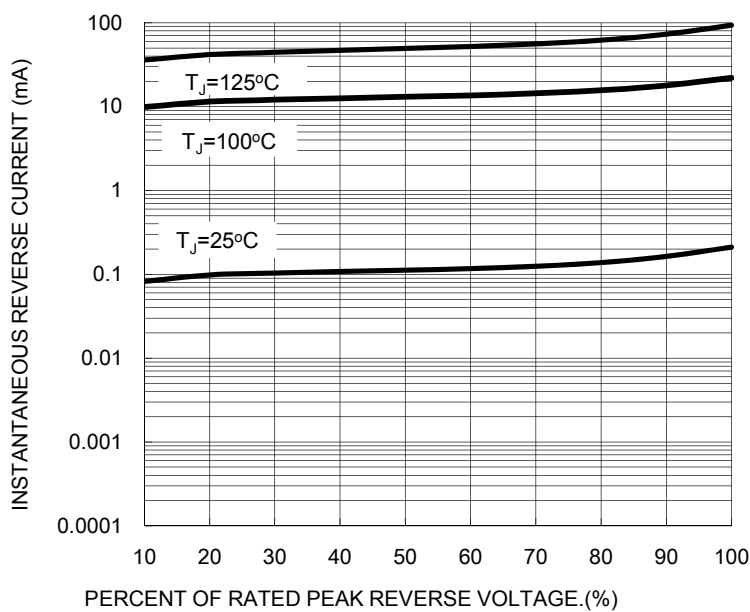
**FIG.1 FORWARD CURRENT DERATING CURVE**



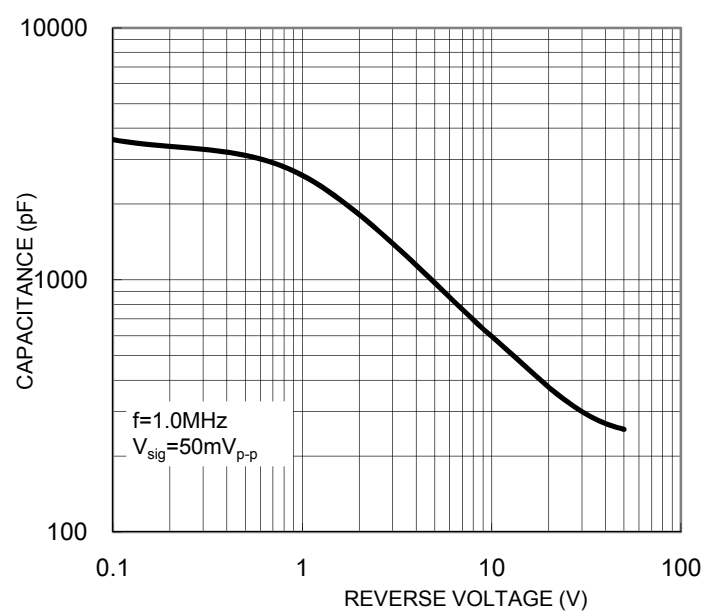
**FIG. 2 TYPICAL FORWARD CHARACTERISTICS**



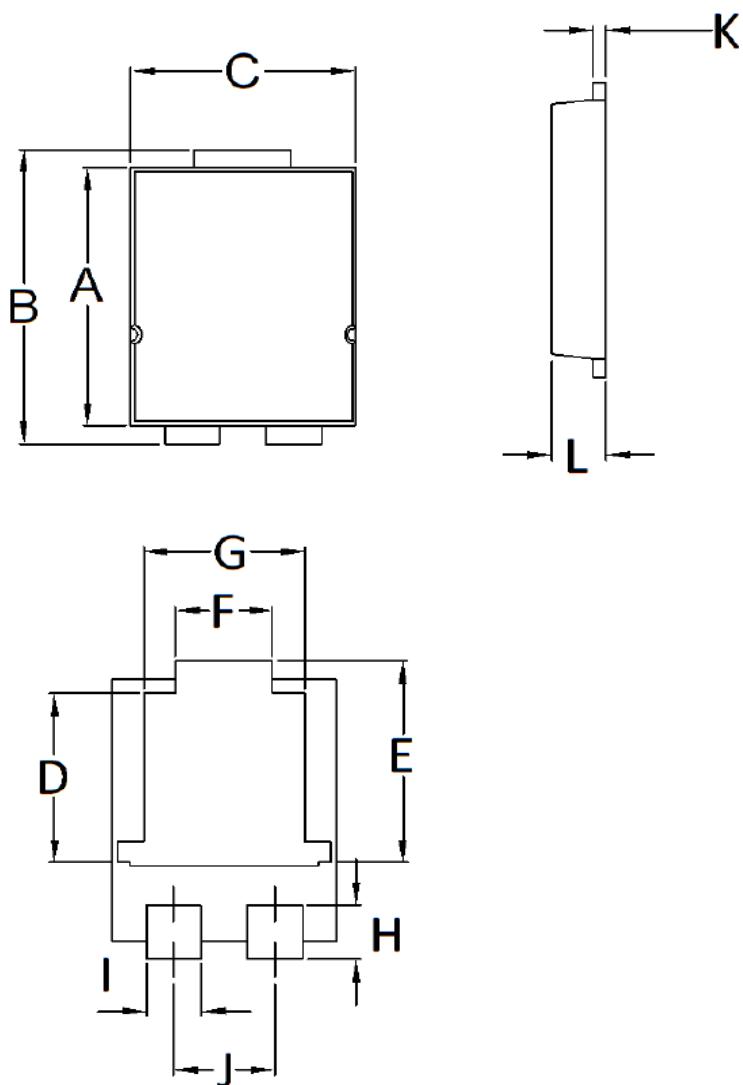
**FIG. 3 TYPICAL REVERSE CHARACTERISTICS**



**FIG. 4 TYPICAL JUNCTION CAPACITANCE**

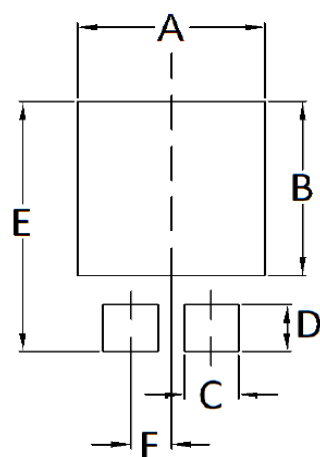


PACKAGE OUTLINE DIMENSIONS



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)
A	4.8
B	4.72
C	1.4
D	1.27
E	6.8
F	1.04

MARKING DIAGRAM



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