Surface Mount Schottky Barrier Rectifiers

eSMP™ Series

Top View Bottom View

MicroSMP

FEATURES

- Very low profile - typical height of 0.68 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- **"Green" molding compound (GMC)**
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 A
V_{RRM}	20 V, 30 V
I_{FSM}	30 A
V_F at I_F = 2.0 A	0.47 V
T_J max.	150 °C

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: MicroSMP

Molding compound meets UL 94V-0 flammability rating.

"G" vs. "E" suffix defines molding as none green, "E", or green molding compound (GMC) "G".

"G" is defined as halogen-free (HF) and antimony-free molding compound that is < 50 ppm for F, Cl, Br, I and At, and < 5 ppm for Sb.

Note:
- There is no industry standard for definition of HF, or GMC for components.

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test. "E3" terminal finish per J-STD-609

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**MSS2P2**	**MSS2P3**	**UNIT**
Device marking code		22	23	
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30		A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Maximum instantaneous forward voltage (1)	I_F = 1.0 A I_F = 2.0 A	T_A = 25 °C	V_F	0.44 0.52	- 0.60	V
	I_F = 1.0 A I_F = 2.0 A	T_A = 125 °C		0.36 0.47	- 0.55	
Maximum reverse current (1)	rated V_R	T_A = 25 °C T_A = 125 °C	I_R	15 6.0	250 20	µA mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	65	-	pF

Note:

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**MSS2P2**	**MSS2P3**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$ $R_{\theta JC}$	105 15 20		°C/W

Note:

(1) Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 6.0 x 6.0 mm copper pad areas. $R_{\theta JL}$ is measured at the terminal of cathode band. $R_{\theta JC}$ is measured at the top center of the body

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
MSS2P3-E3/89A	0.006	89A	4500	7" diameter plastic tape and reel
MSS2P3-G3/89A	0.006	89A	4500	7" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

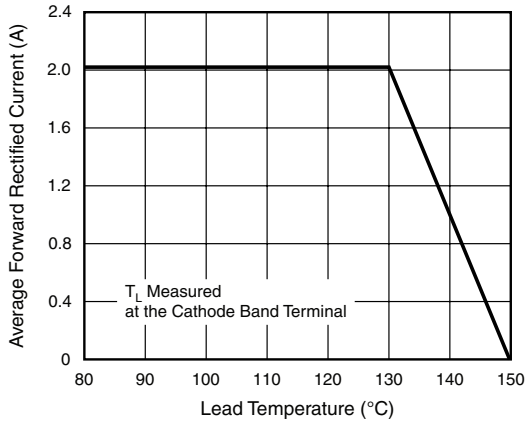


Figure 1. Forward Current Derating Curve

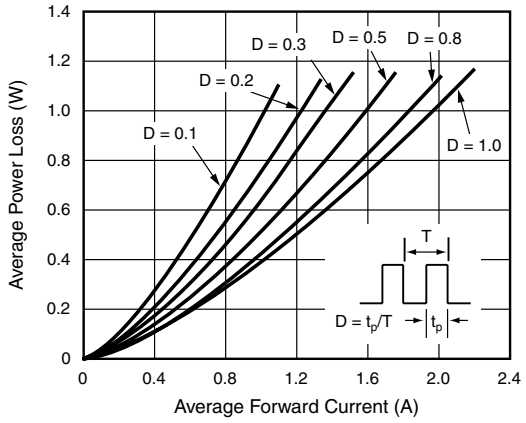


Figure 2. Forward Power Loss Characteristics

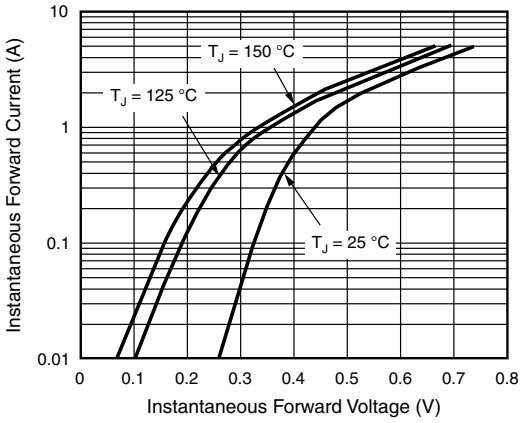


Figure 3. Typical Instantaneous Forward Characteristics

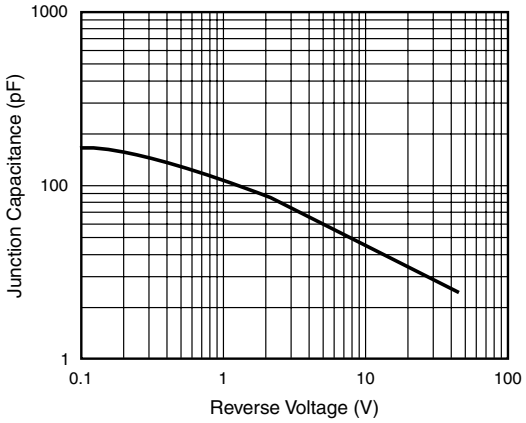


Figure 5. Typical Junction Capacitance

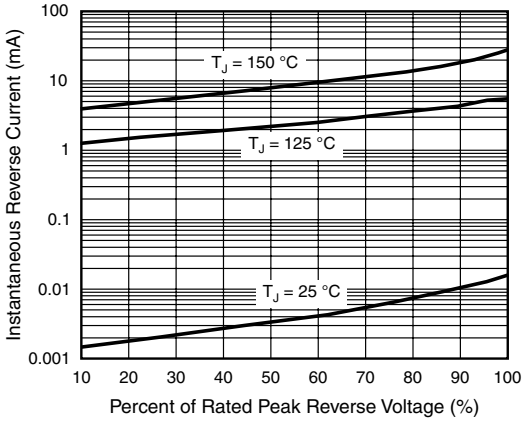


Figure 4. Typical Reverse Characteristics

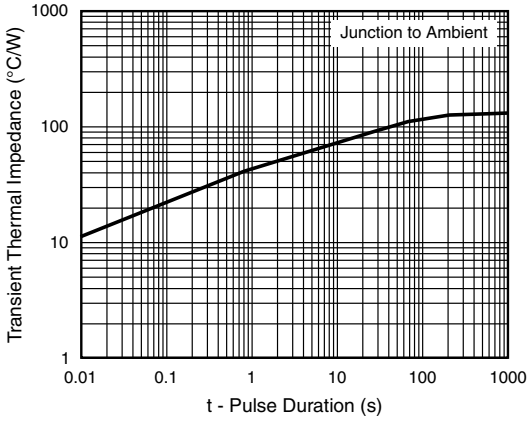
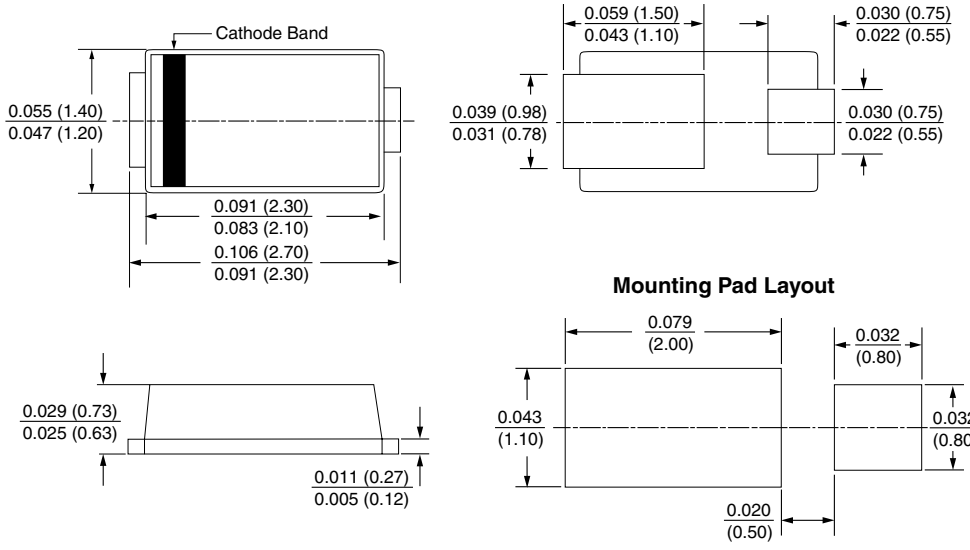


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

MicroSMP



Mounting Pad Layout

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