

## 1A, 30V - 60V Surface Mount Schottky Barrier Rectifiers

### FEATURES

- Very low profile - typical height of 0.68mm
- Low power loss, high efficiency
- 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



**Micro SMA**



### MECHANICAL DATA

**Case:** Micro SMA

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Part No. with suffix "H" means AEC-Q101 qualified

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:** 6 mg (approximately)

<b>MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS</b> ( $T_A=25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SS13M	SS14M	SS16M	UNIT
Marking code		A	B	C	
Maximum repetitive peak reverse voltage	$V_{RRM}$	30	40	60	V
Maximum average forward rectified current	$I_{F(AV)}$	1			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	25			A
Maximum instantaneous forward voltage (Note 1) @ 0.5A / $T_J=25^\circ\text{C}$ @ 0.5A / $T_J=125^\circ\text{C}$ @ 1.0A / $T_J=25^\circ\text{C}$ @ 1.0A / $T_J=125^\circ\text{C}$	$V_F$	TYP	MAX	TYP	MAX
		0.45	-	0.51	-
		0.35	-	0.46	-
		0.52	0.55	0.64	0.68
		0.46	0.50	0.57	0.60
Maximum reverse current @ rated $V_R$ @ $T_J=25^\circ\text{C}$ @ $T_J=125^\circ\text{C}$ @ $T_J=150^\circ\text{C}$	$I_R$	TYP	MAX	TYP	MAX
		5	50	5	50
		3	10	3	10
		5.3	-	6.7	-
Typical junction capacitance (Note 2)	$C_J$	50		40	pF
Typical thermal resistance	$R_{\theta JL}$	30			$^\circ\text{C/W}$
	$R_{\theta JC}$	40			
	$R_{\theta JA}$	125			
Operating junction temperature range	$T_J$	-55 to +150			$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150			$^\circ\text{C}$

Note 1: Pulse test with  $PW=300\mu\text{s}$ , 1% duty cycle

Note 2: Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
SS1xM (Note 1, 2)	H	RS	G	Micro SMA	3,000 / 7" Plastic reel

Note 1: "x" defines voltage from 30V (SS13M) to 60V (SS16M)

Note 2: Whole series with green compound

EXAMPLE					
PREFERRED P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SS16MHRSG	SS16M	H	RS	G	Automotive grade Green compound

**RATINGS AND CHARACTERISTICS CURVES**

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

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

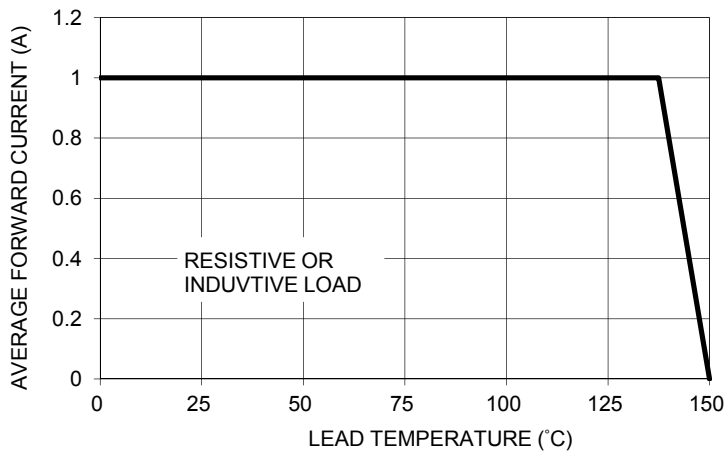


FIG. 2 MAXIMUM FORWARD SURGE CURRENT

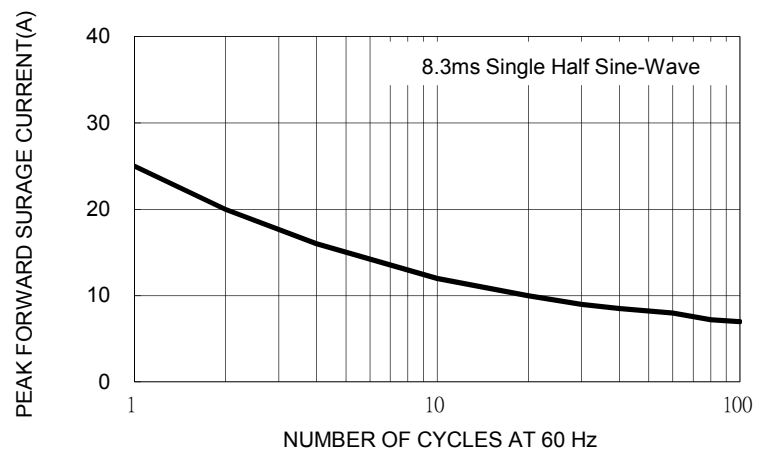


FIG. 3 TYPICAL FORWARD CHARACTERISTICS - SS13M/14M

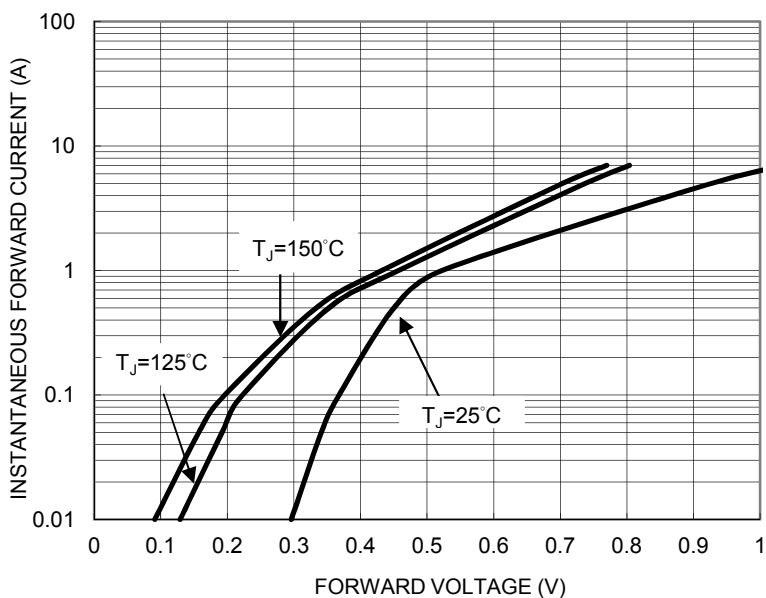


FIG. 4 TYPICAL FORWARD CHARACTERISTICS - SS16M

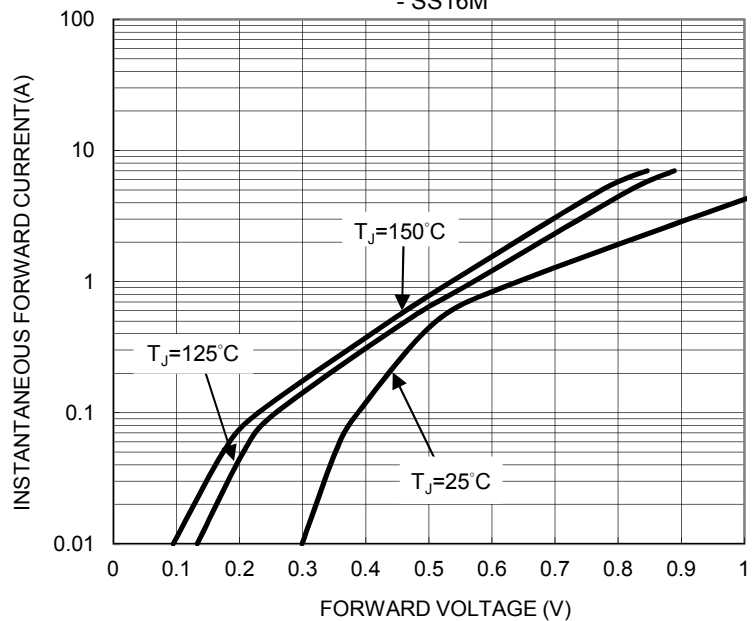


FIG. 5 TYPICAL REVERSE CHARACTERISTICS  
- SS13M/14M

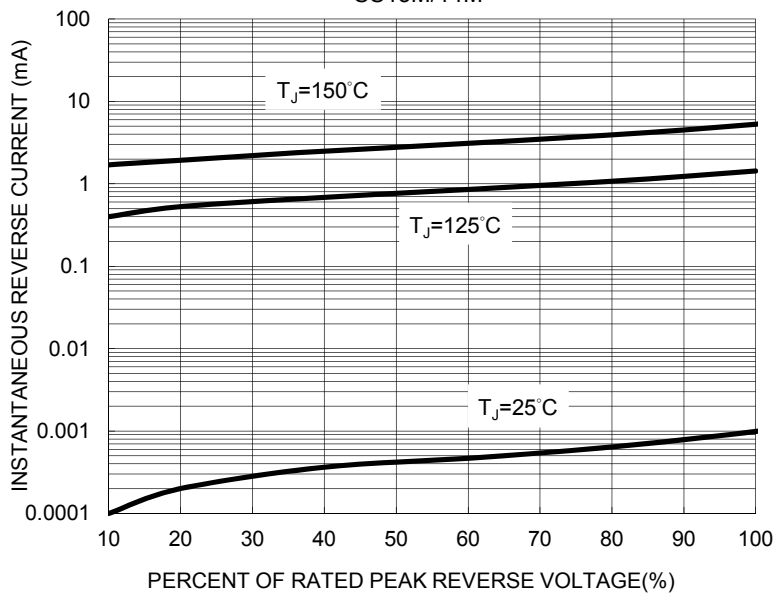


FIG. 6 TYPICAL REVERSE CHARACTERISTICS  
- SS16M

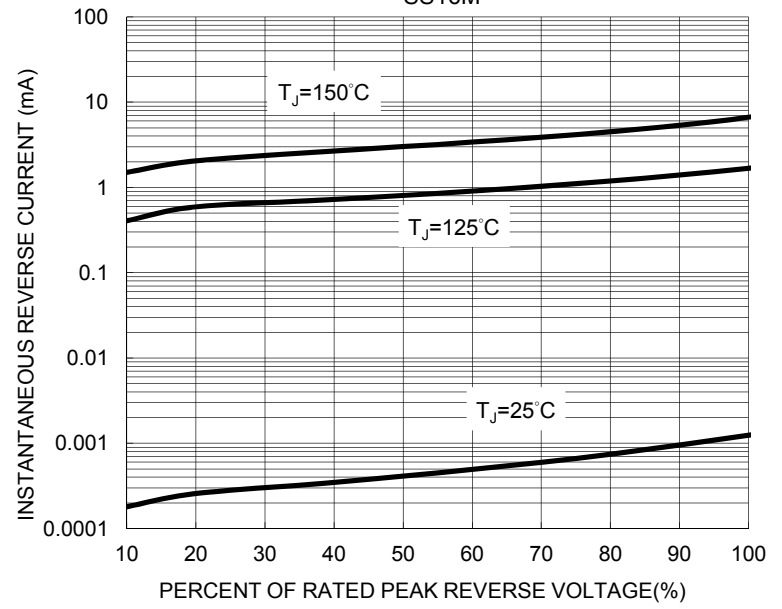


FIG. 7 TYPICAL JUNCTION CAPACITANCE

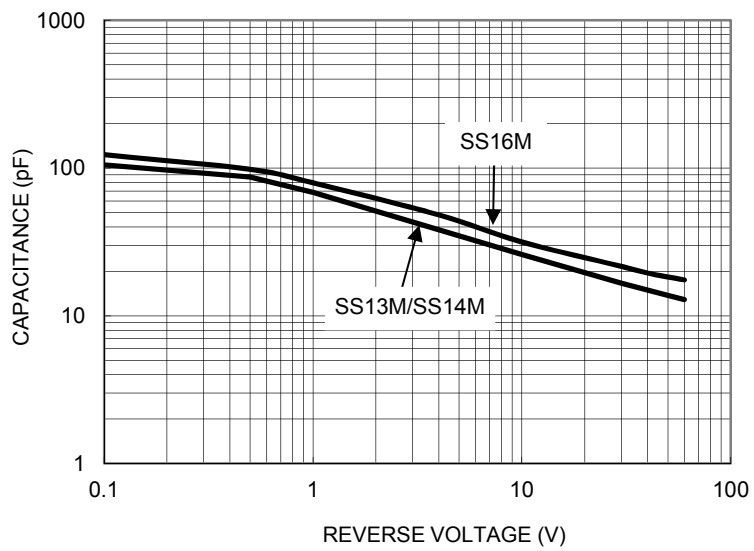
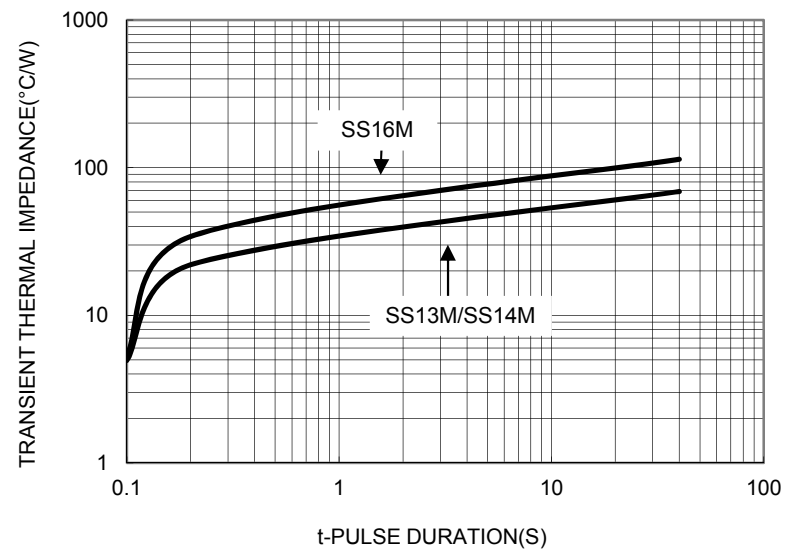
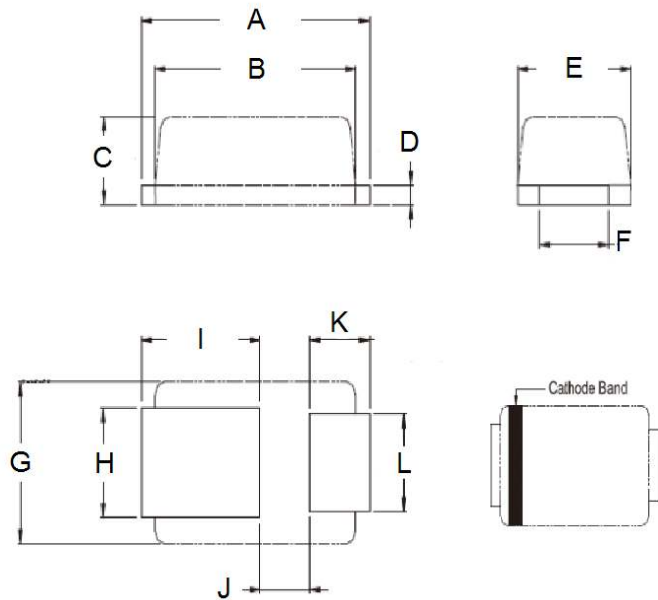


FIG. 8 TYPICAL TRANSIENT THERMAL IMPEDANCE



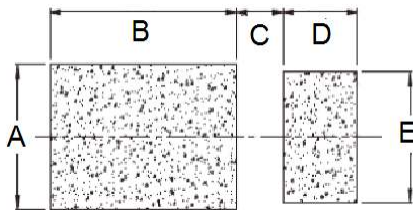
**PACKAGE OUTLINE DIMENSIONS**

**Micro SMA**



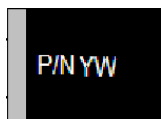
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.30	2.70	0.091	0.106
B	2.10	2.30	0.083	0.091
C	0.63	0.73	0.025	0.029
D	0.10	0.20	0.004	0.008
E	1.15	1.35	0.045	0.053
F	0.65	0.85	0.026	0.034
G	1.15	1.35	0.045	0.053
H	0.75	0.95	0.030	0.037
I	1.10	1.50	0.043	0.059
J	0.55	0.75	0.022	0.030
K	0.55	0.75	0.022	0.030
L	0.65	0.85	0.026	0.034

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.1	0.043
B	2.0	0.079
C	0.5	0.020
D	0.8	0.031
E	1.0	0.039

**MARKING DIAGRAM**



P/N = Marking code  
YW = Date Code

### **Notice**

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.