

1A, 30V - 60V Surface Mount Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified
- Very low profile - typical height of 0.68mm
- Low power loss, high efficiency
- 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

APPLICATIONS

- Converter
- Free wheeling
- LED lighting
- Adapters

MECHANICAL DATA

- Case: Micro SMA
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.006 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	1	A
V_{RRM}	30 - 60	V
I_{FSM}	25	A
$T_{J\ MAX}$	150	°C
Package	Micro SMA	



Micro SMA

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SS13M	SS14M	SS16M	UNIT
Marking code on the device		A	B	C	
Repetitive peak reverse voltage	V_{RRM}	30	40	60	V
Forward current	$I_{F(AV)}$	1			A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	25			A
Junction temperature	T_J	- 55 to +150			°C
Storage temperature	T_{STG}	- 55 to +150			°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP.	UNIT
Junction-to-lead Thermal Resistance	$R_{\theta JL}$	30	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	125	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	40	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Forward voltage per diode ⁽¹⁾	SS13M SS14M	$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.45	-	V
		$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$		0.52	0.55	V
		$I_F = 0.5\text{A}, T_J = 125^\circ\text{C}$		0.35	-	V
		$I_F = 1.0\text{A}, T_J = 125^\circ\text{C}$		0.46	0.50	V
	SS16M	$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.51	-	V
		$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$		0.64	0.68	V
		$I_F = 0.5\text{A}, T_J = 125^\circ\text{C}$		0.46	-	V
		$I_F = 1.0\text{A}, T_J = 125^\circ\text{C}$		0.57	0.60	V
Reverse current @ rated V_R per diode ⁽²⁾	SS13M SS14M	$T_J = 25^\circ\text{C}$	I_R	5	50	μA
		$T_J = 125^\circ\text{C}$		3	10	mA
		$T_J = 150^\circ\text{C}$		5.3	-	mA
	SS16M	$T_J = 25^\circ\text{C}$	I_R	5	50	μA
		$T_J = 125^\circ\text{C}$		3	10	mA
		$T_J = 150^\circ\text{C}$		6	-	mA
Junction capacitance	SS13M SS14M	1 MHz, $V_R = 4.0\text{V}$	C_J	50	-	pF
	SS16M			40	-	pF

Notes:

1. Pulse test with $PW = 0.3\text{ ms}$
2. Pulse test with $PW = 30\text{ ms}$

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
SS13MHRSG	Micro SMA	3000 / 7" Plastic reel
SS14MHRSG	Micro SMA	3000 / 7" Plastic reel
SS16MHRSG	Micro SMA	3000 / 7" Plastic reel
SS13M RSG	Micro SMA	3000 / 7" Plastic reel
SS14M RSG	Micro SMA	3000 / 7" Plastic reel
SS16M RSG	Micro SMA	3000 / 7" Plastic reel

Note: "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

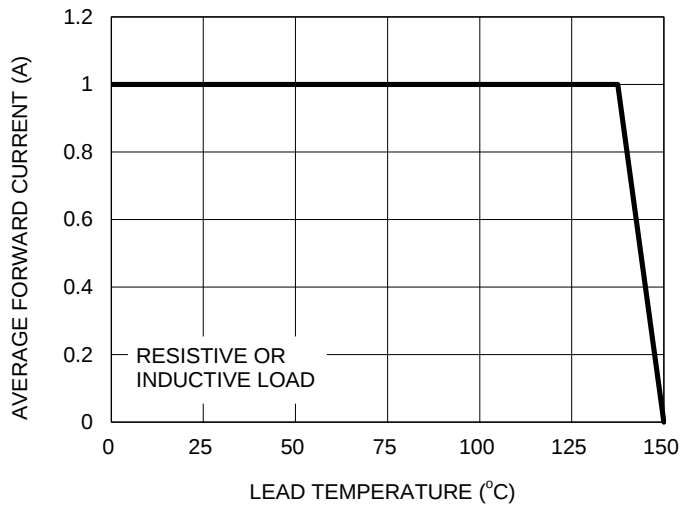


Fig.2 Typical Junction Capacitance

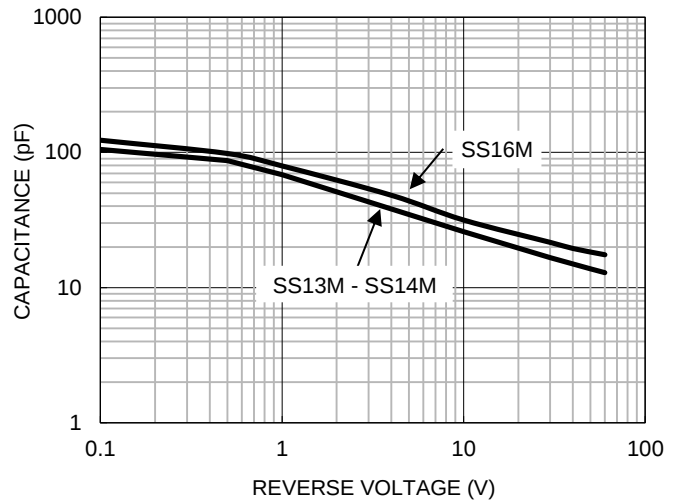


Fig.3 Typical Reverse Characteristics

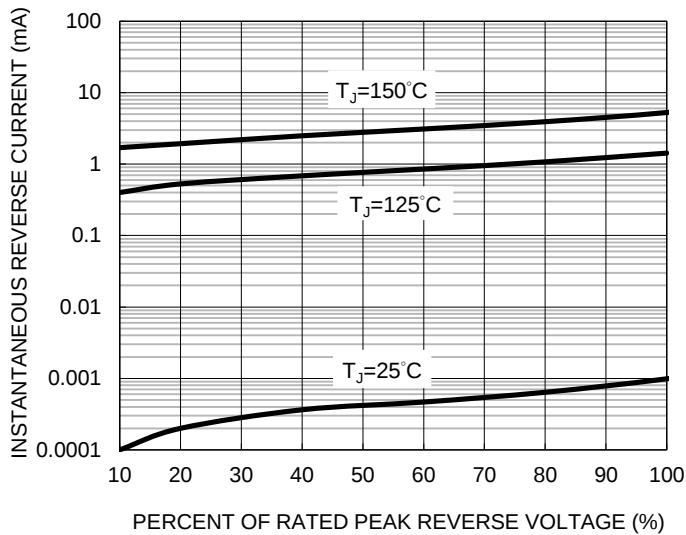
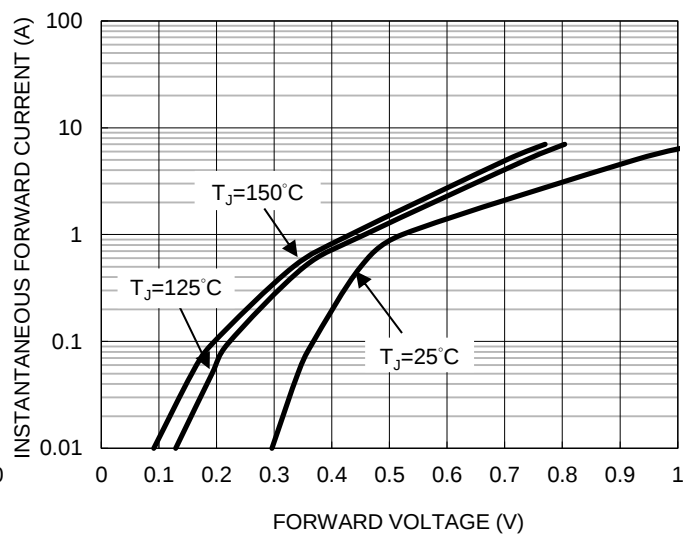


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.5 Typical Reverse Characteristics

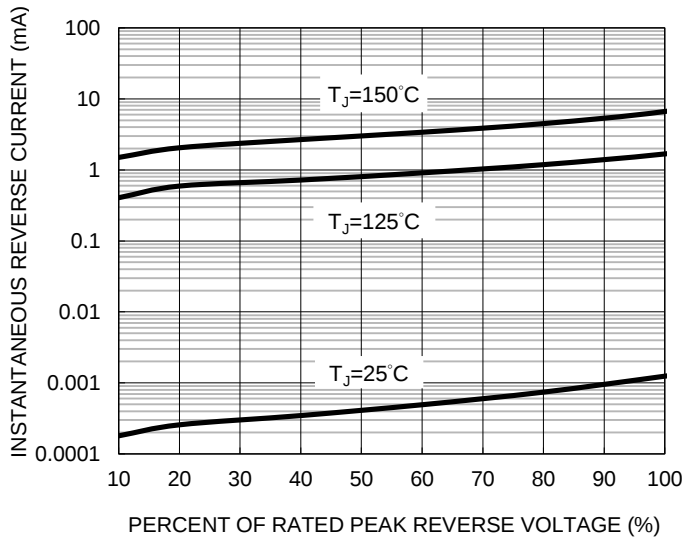


Fig.6 Typical Forward Characteristics

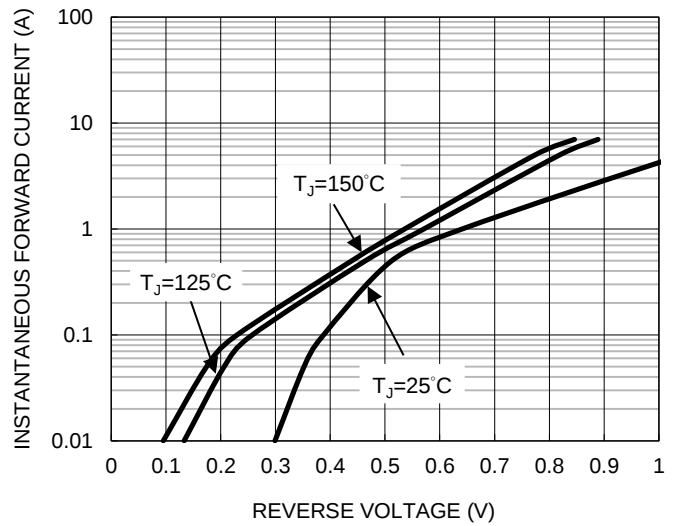


Fig.7 Maximum Forward Surge Current

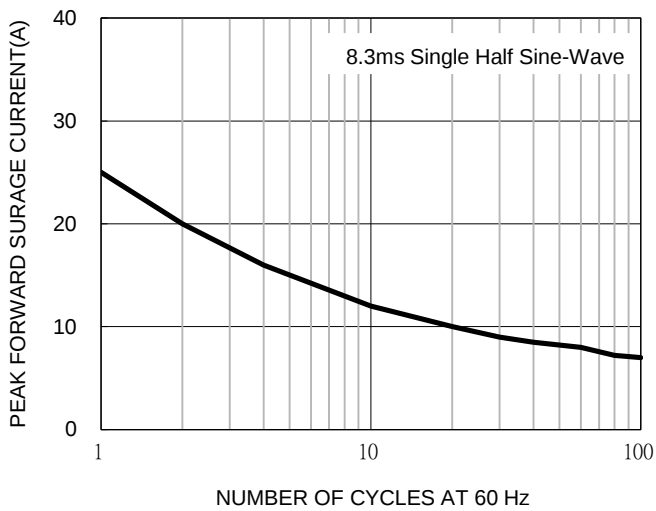
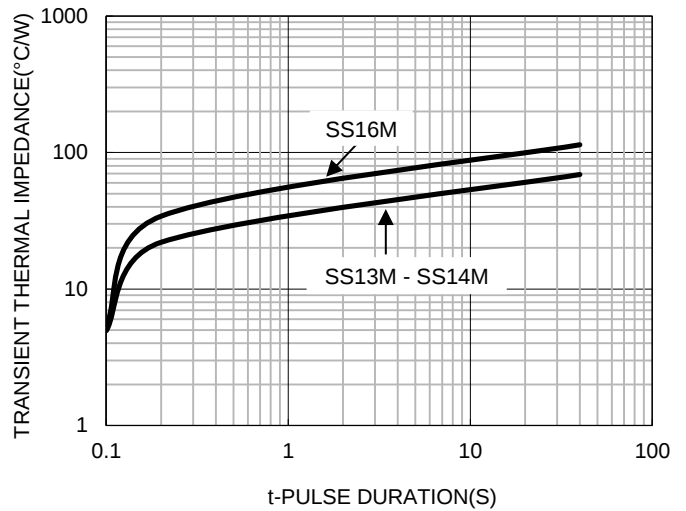
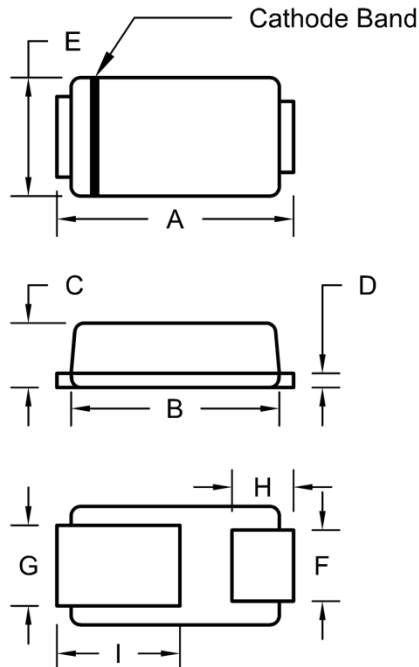


Fig.8 Typical Transient Thermal Impedance



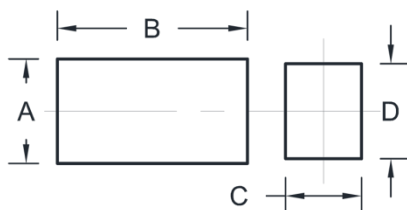
PACKAGE OUTLINE DIMENSIONS

Micro SMA



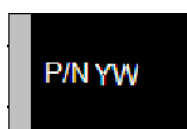
DIM	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.30	2.70	0.091	0.106
B	2.10	2.30	0.083	0.091
C	0.63	0.73	0.025	0.029
D	0.10	0.20	0.004	0.008
E	1.15	1.35	0.045	0.053
F	0.65	0.85	0.026	0.034
G	0.75	0.95	0.030	0.037
H	0.55	0.75	0.022	0.030
I	1.10	1.50	0.043	0.059

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.10	0.043
B	2.00	0.079
C	0.80	0.031
D	1.00	0.039

MARKING DIAGRAM



P/N = Marking Code
YW = Date Code

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