

1A, 30V - 60V Schottky Barrier Surface Mount 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
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Low voltage, high freq. inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

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: Indicated by cathode band
- Weight: 0.006g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	30 - 60	V
I_{FSM}	25	A
T_{JMAX}	150	°C
Package	Micro SMA	
Configuration	Single die	



Micro SMA



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SS13MH	SS14MH	SS16MH	UNIT
Marking code on the device		A	B	C	
Repetitive peak reverse voltage	V_{RRM}	30	40	60	V
Reverse voltage, total rms value	$V_{R(RMS)}$	21	28	42	V
Forward current	I_F	1			A
Surge peak forward current 8.3ms single half sine wave superimposed on rated load	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	$^{\circ}\text{C/W}$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	125	$^{\circ}\text{C/W}$
Junction-to-case thermal resistance	$R_{\theta JC}$	40	$^{\circ}\text{C/W}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	SS13MH SS14MH	$I_F = 0.5\text{A}, T_J = 25^{\circ}\text{C}$	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
	SS16MH	$I_F = 0.5\text{A}, T_J = 25^{\circ}\text{C}$	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 ⁽²⁾	SS13MH SS14MH	$T_J = 25^{\circ}\text{C}$	I_R	5	50	μA
		$T_J = 125^{\circ}\text{C}$		3	10	mA
		$T_J = 150^{\circ}\text{C}$		5.3	-	mA
	SS16MH	$T_J = 25^{\circ}\text{C}$	I_R	5	50	μA
		$T_J = 125^{\circ}\text{C}$		3	10	mA
		$T_J = 150^{\circ}\text{C}$		6	-	mA
Junction capacitance	SS13MH SS14MH	1MHz, $V_R = 4.0\text{V}$	C_J	50	-	pF
	SS16MH			40	-	pF

Notes:

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

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
SS1xMH	Micro SMA	12,000 / Tape & Reel

Notes:

1. "x" defines voltage from 30V(SS13MH) to 60V(SS16MH)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

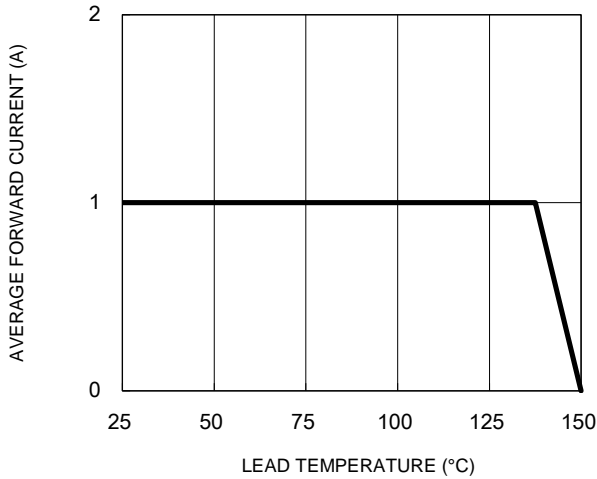


Fig.2 Typical Junction Capacitance

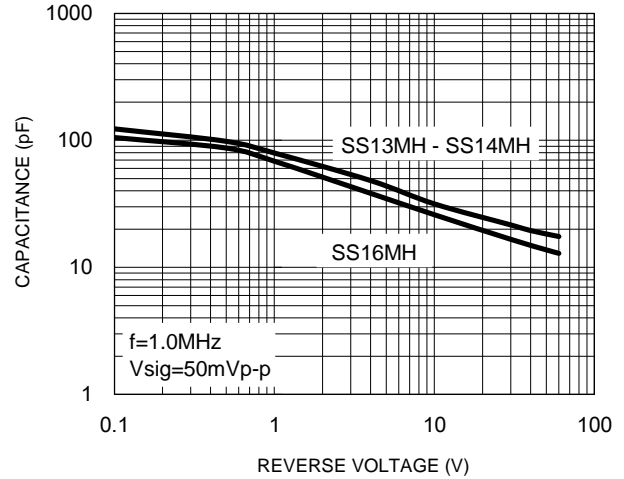


Fig.3 Typical Reverse Characteristics

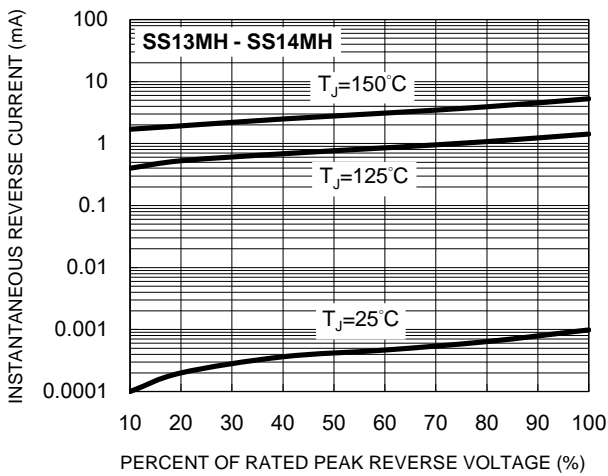


Fig.4 Typical Forward Characteristics

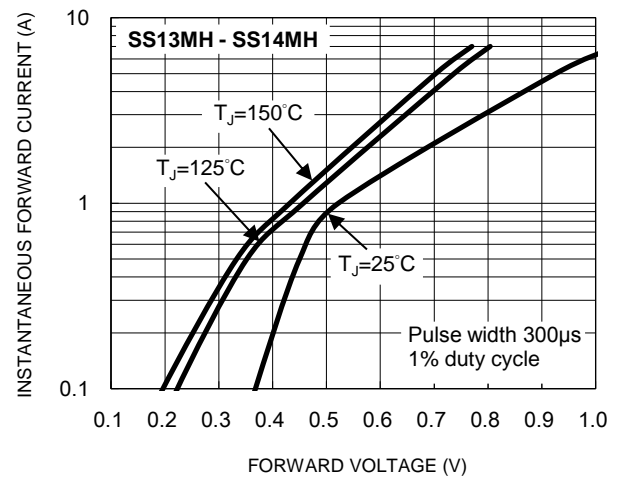


Fig.5 Typical Reverse Characteristics

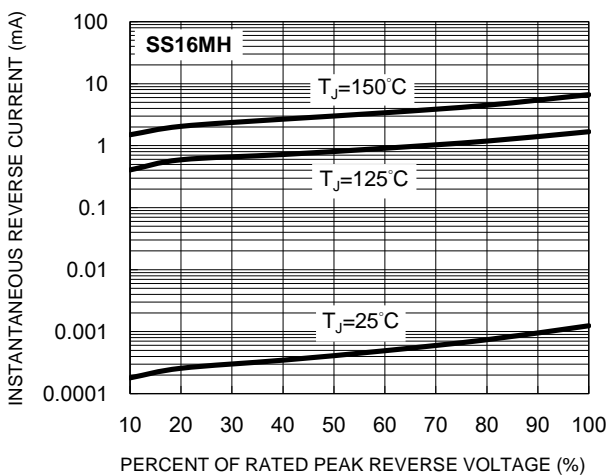
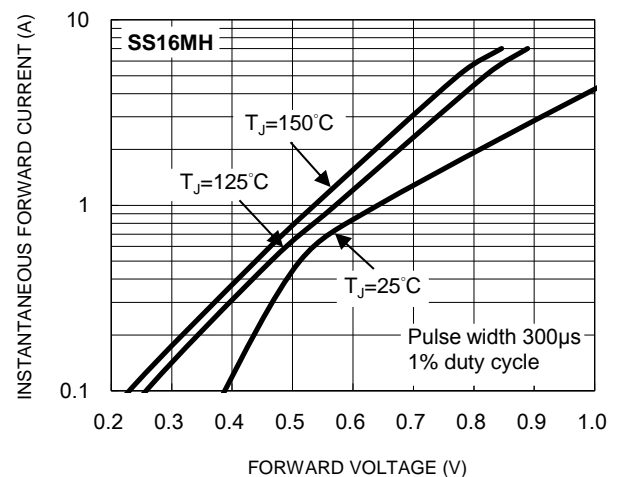


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.7 Maximum Non-Repetitive Forward Surge Current

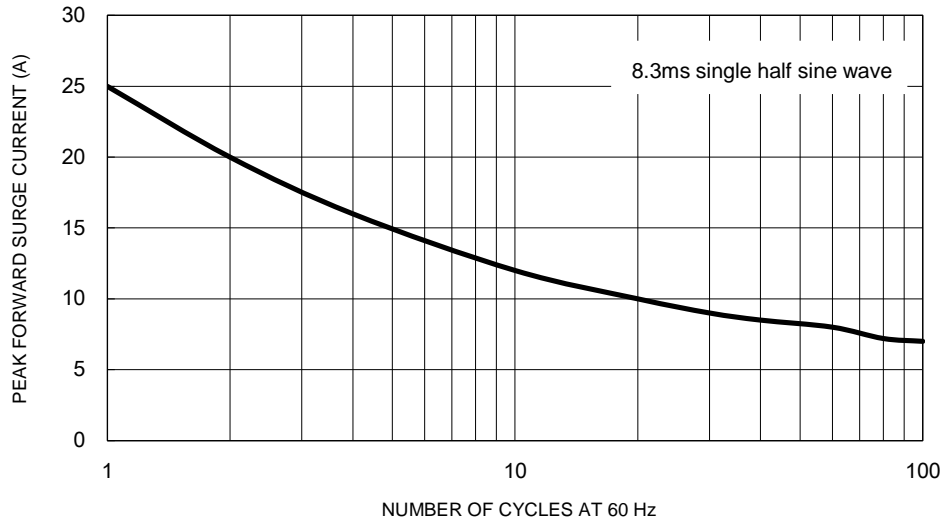
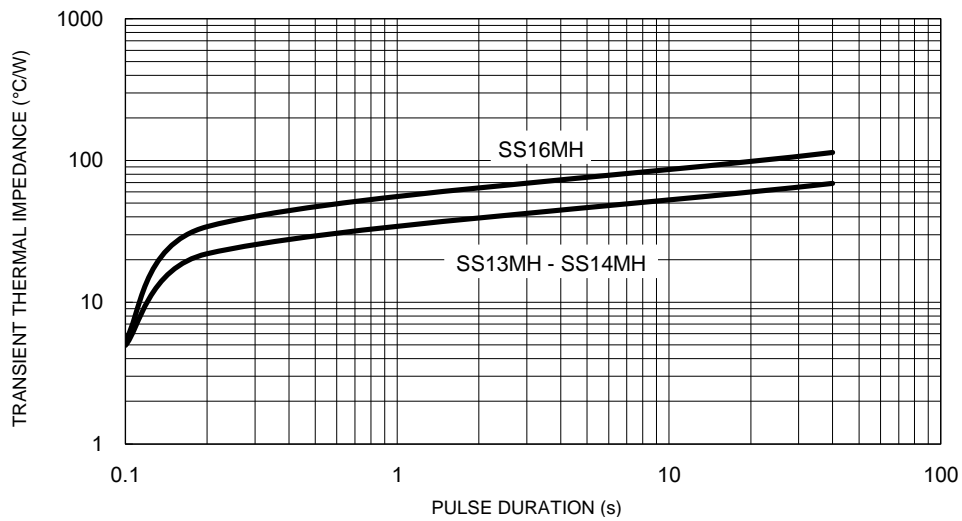
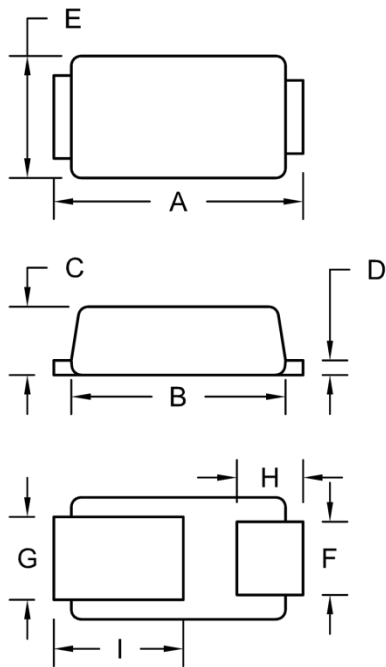


Fig.8 Typical Transient Thermal Impedance



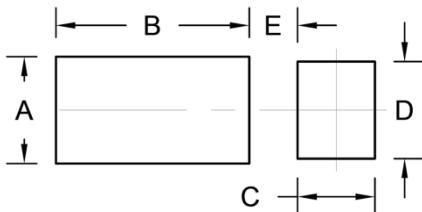
PACKAGE OUTLINE DIMENSIONS

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
E	0.50	0.020

MARKING DIAGRAM



P/N = Marking Code
YW = Data Code

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