

## 1A, 20V - 150V Schottky Barrier Surface Mount Rectifier

### FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

### APPLICATIONS

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

### MECHANICAL DATA

- Case: DO-214AC (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: 0.060g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	1	A
$V_{RRM}$	20 - 150	V
$I_{FSM}$	40	A
$T_{J\ MAX}$	125, 150	°C
Package	DO-214AC (SMA)	
Configuration	Single die	



DO-214AC (SMA)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	SS 12H	SS 13H	SS 14H	SS 15H	SS 16H	SS 19H	SS 110H	SS 115H	UNIT
Marking code on the device		SS12	SS13	SS14	SS15	SS16	SS19	SS110	SS115	
Repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	90	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	V
Forward current	$I_F$	1								A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	40								A
Critical rate of rise of off-state voltage	$dV/dt$	10,000								V/ $\mu\text{s}$
Junction temperature	$T_J$	- 55 to +125				- 55 to +150				°C
Storage temperature	$T_{STG}$	- 55 to +150								°C

## THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	28	$^{\circ}C/W$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	88	$^{\circ}C/W$

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT			
Forward voltage <sup>(1)</sup>	SS12H SS13H SS14H	$V_F$	-	0.50	V			
	SS15H SS16H			0.75	V			
	SS19H SS110H			0.80	V			
	SS115H			0.95	V			
	SS12H SS13H SS14H			-	0.40	V		
	SS15H SS16H			-	0.65	V		
	SS19H SS110H			-	0.70	V		
	SS115H			-	0.85	V		
	Reverse current @ rated $V_R$ <sup>(2)</sup>			SS12H SS13H SS14H SS15H SS16H	$I_R$	-	200	$\mu A$
				SS19H SS110H SS115H			100	$\mu A$
SS12H SS13H SS14H		-	6	mA				
SS15H SS16H		-	5	mA				
SS19H SS110H SS115H		-	-	mA				
SS12H SS13H SS14H		-	-	mA				
SS15H SS16H		-	-	mA				
SS19H SS110H SS115H		-	2	mA				

**Notes:**

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

**ORDERING INFORMATION**

<b>ORDERING CODE<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
SS1xH	DO-214AC (SMA)	7,500 / Tape & Reel

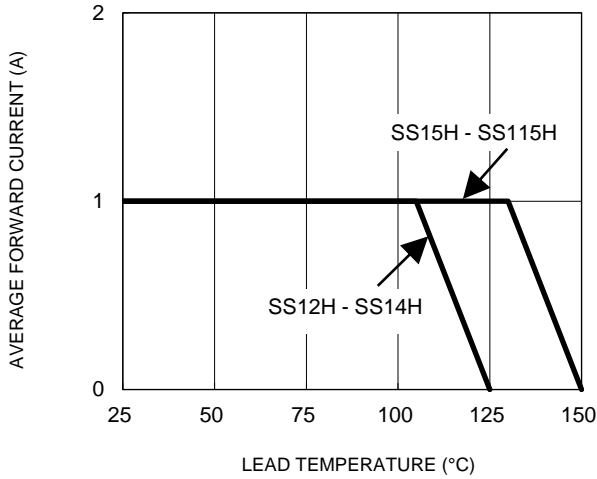
**Notes:**

1. “x” defines voltage from 20V(SS12H) to 150V(SS115H)

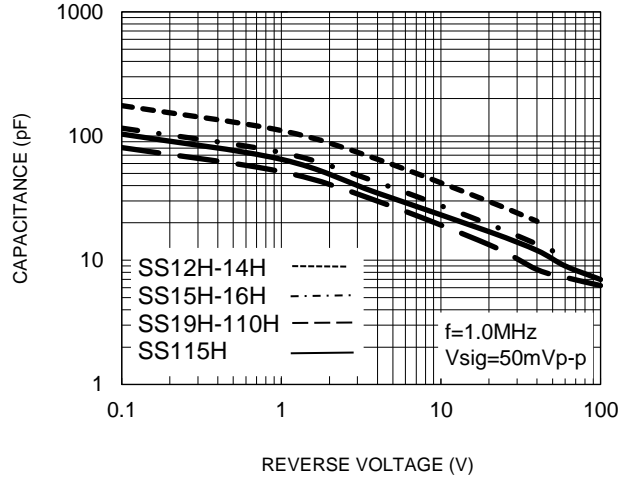
**CHARACTERISTICS CURVES**

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

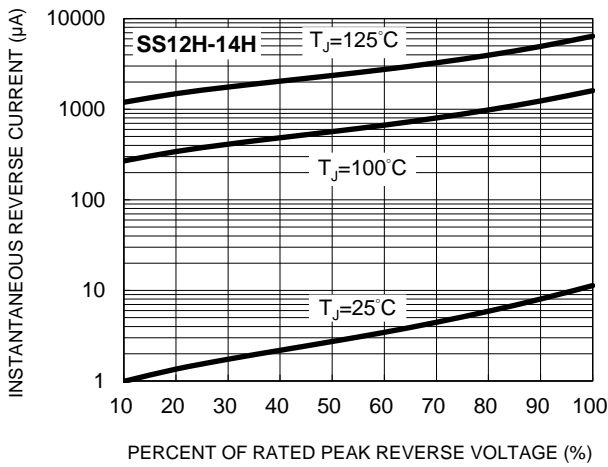
**Fig.1 Forward Current Derating Curve**



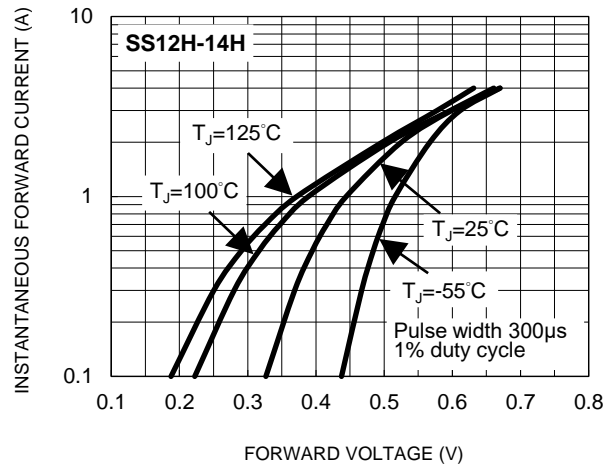
**Fig.2 Typical Junction Capacitance**



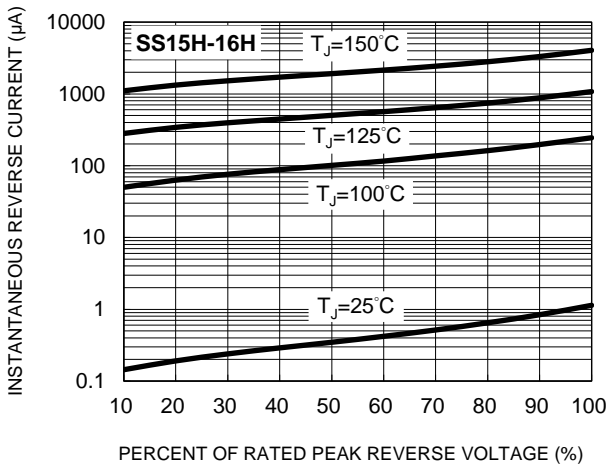
**Fig.3 Typical Reverse Characteristics**



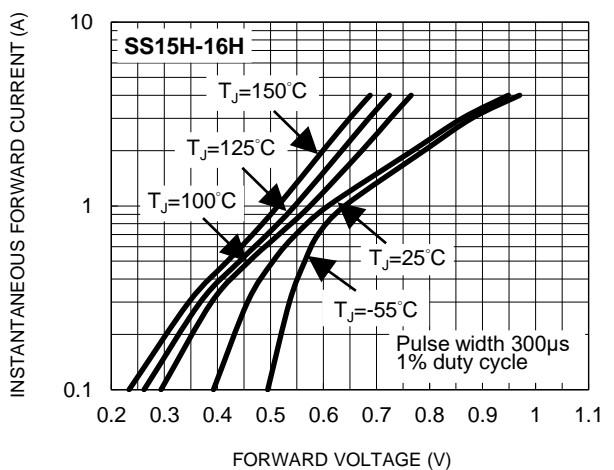
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Reverse Characteristics**



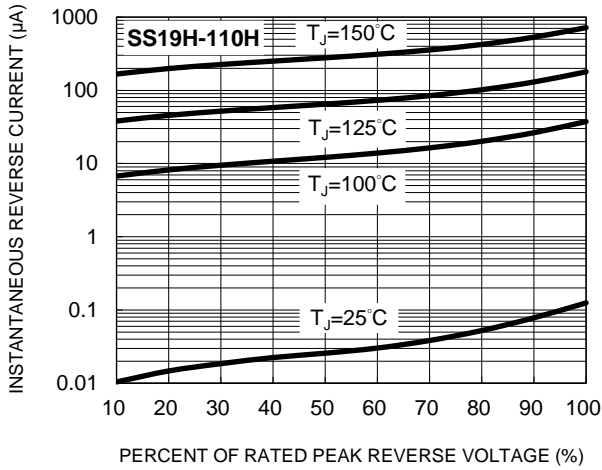
**Fig.6 Typical Forward Characteristics**



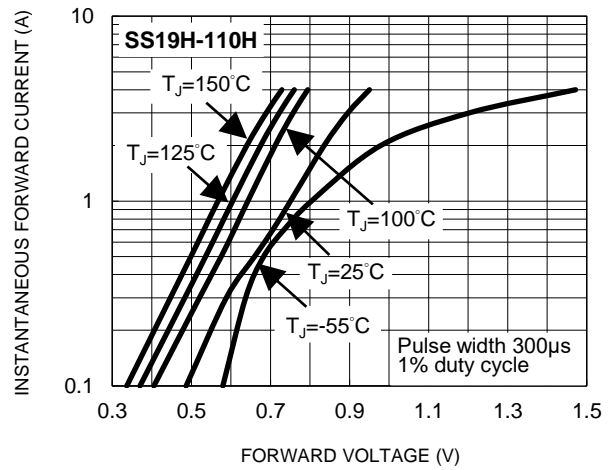
**CHARACTERISTICS CURVES**

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

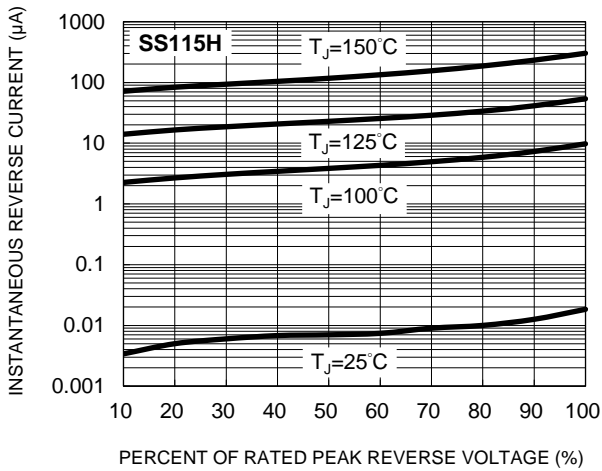
**Fig.7 Typical Reverse Characteristics**



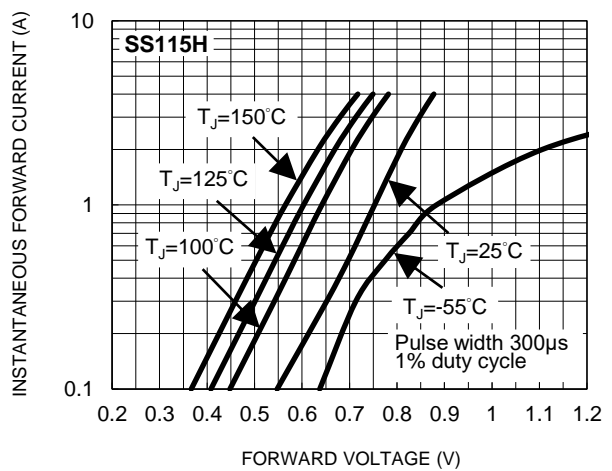
**Fig.8 Typical Forward Characteristics**



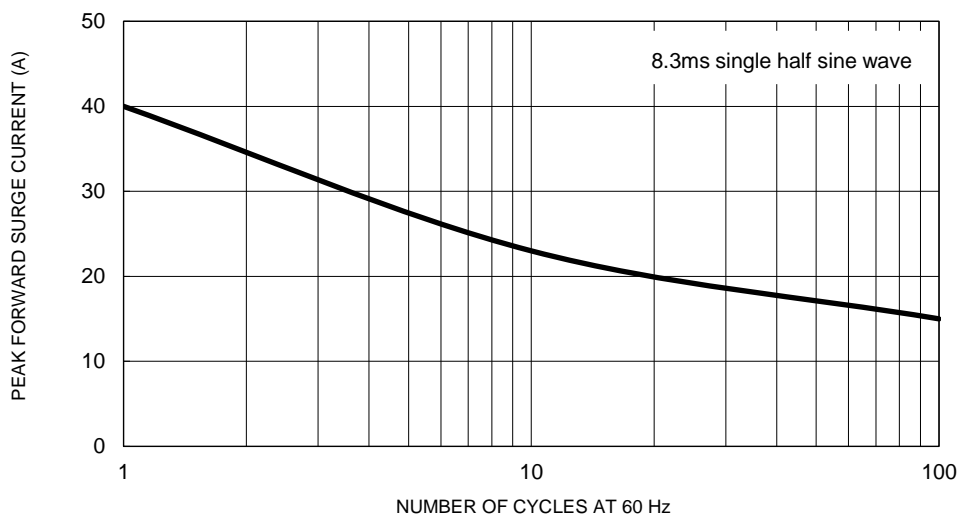
**Fig.9 Typical Reverse Characteristics**



**Fig.10 Typical Forward Characteristics**



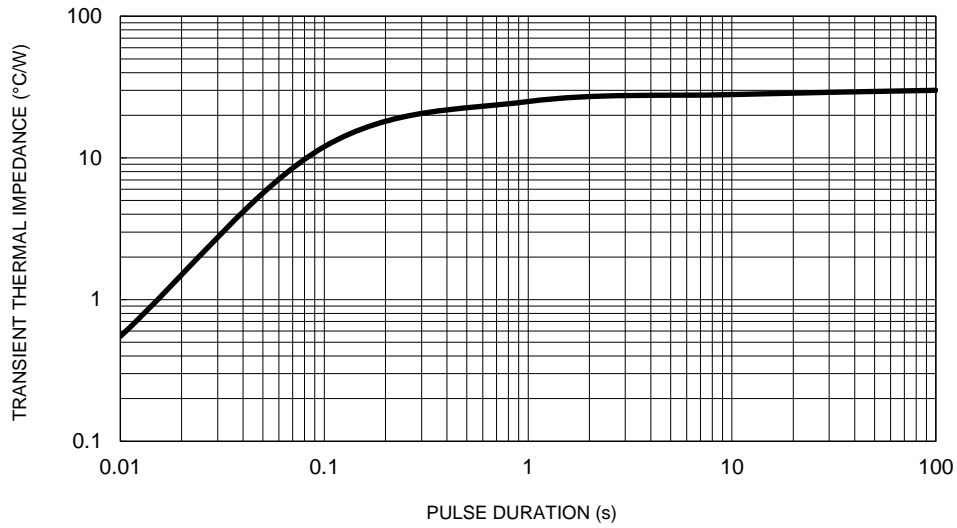
**Fig.11 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

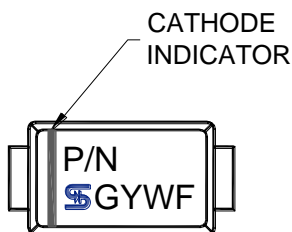
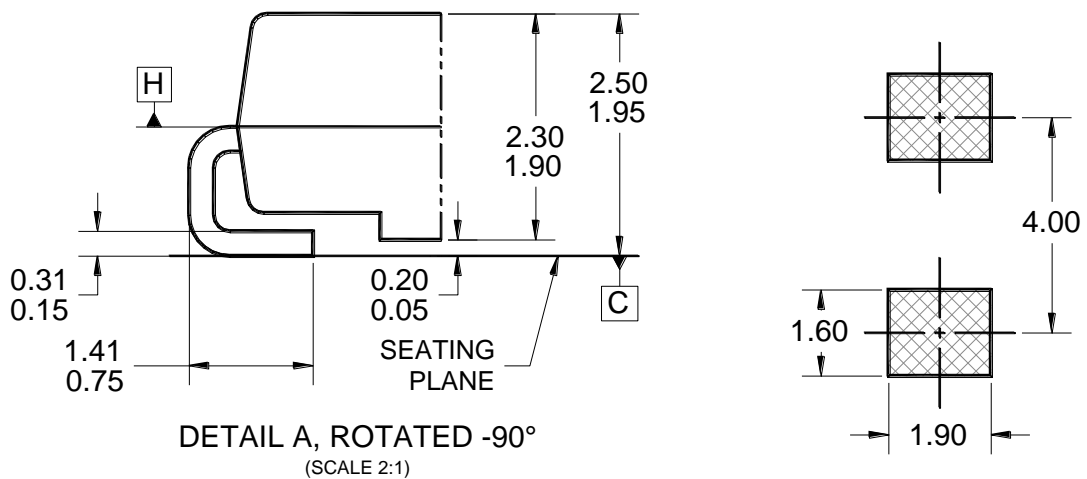
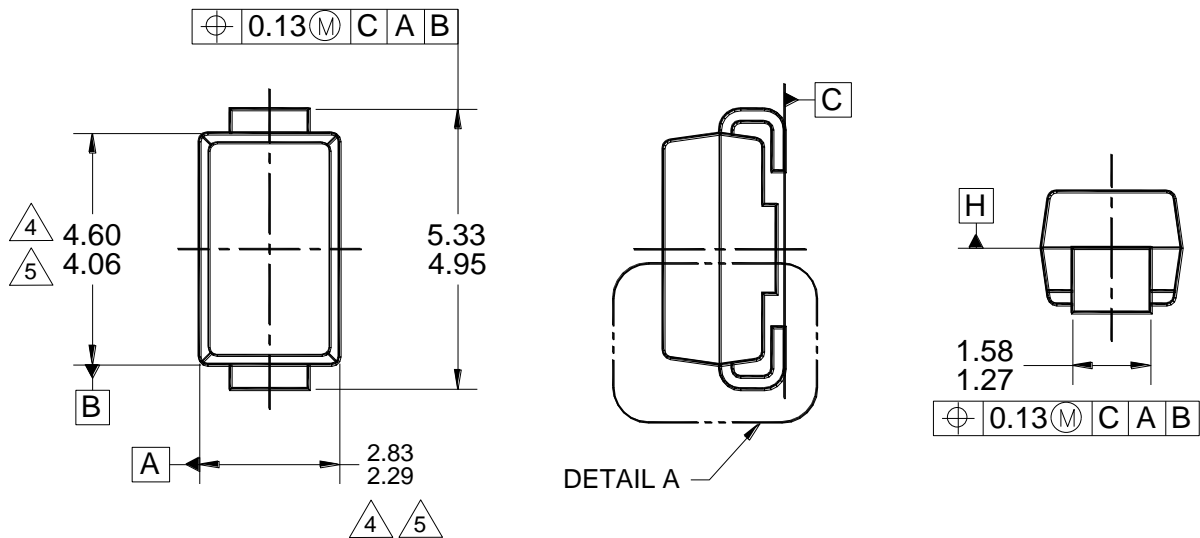
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.12 Typical Transient Thermal Characteristics**



**PACKAGE OUTLINE DIMENSIONS**

**DO-214AC (SMA)**



**MARKING DIAGRAM**

P/N = MARKING CODE  
G = GREEN COMPOUND  
YW = DATE CODE  
F = FACTORY CODE

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AC, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMC-034 REV A.

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