

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 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: 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/ μs
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	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	88	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT		
Forward voltage ⁽¹⁾	SS12H SS13H SS14H	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.50	V	
	SS15H SS16H			-	0.75	V	
	SS19H SS110H			-	0.80	V	
	SS115H			-	0.95	V	
	SS12H SS13H SS14H			$I_F = 1\text{A}, T_J = 100^\circ\text{C}$	-	0.40	V
	SS15H SS16H				-	0.65	V
	SS19H SS110H				-	0.70	V
	SS115H				-	0.85	V
Reverse current @ rated V_R ⁽²⁾	SS12H SS13H SS14H SS15H SS16H	$T_J = 25^\circ\text{C}$	I_R	-	0.2	mA	
	SS19H SS110H SS115H			-	0.1	mA	
	SS12H SS13H SS14H	$T_J = 100^\circ\text{C}$		-	6	mA	
	SS15H SS16H			-	5	mA	
	SS19H SS110H SS115H			-	-	mA	
	SS12H SS13H SS14H	$T_J = 125^\circ\text{C}$		-	-	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

ORDERING CODE⁽¹⁾	PACKAGE	PACKING
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

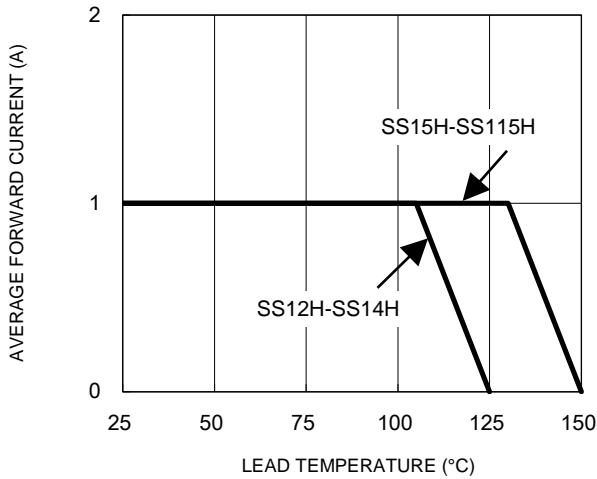


Fig.2 Typical Junction Capacitance

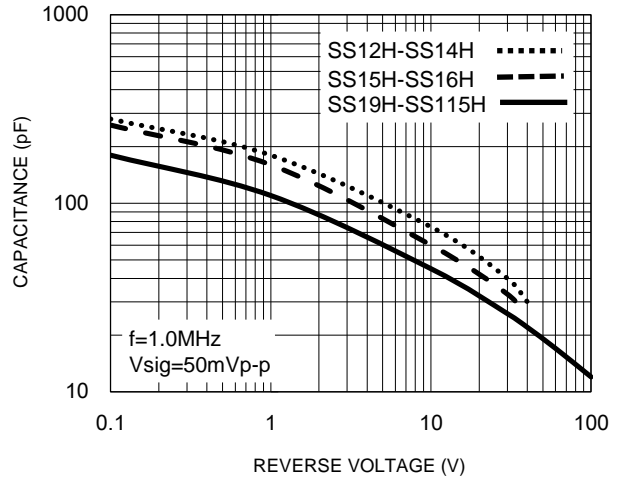


Fig.3 Typical Reverse Characteristics

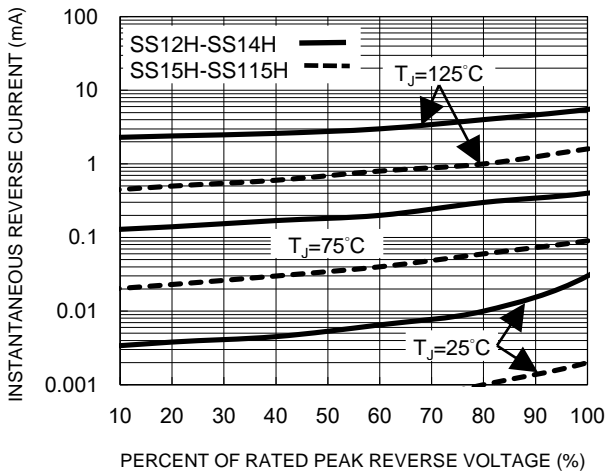


Fig.4 Typical Forward Characteristics

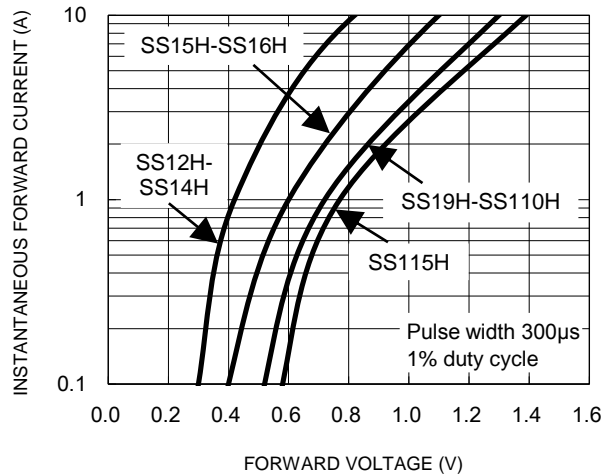
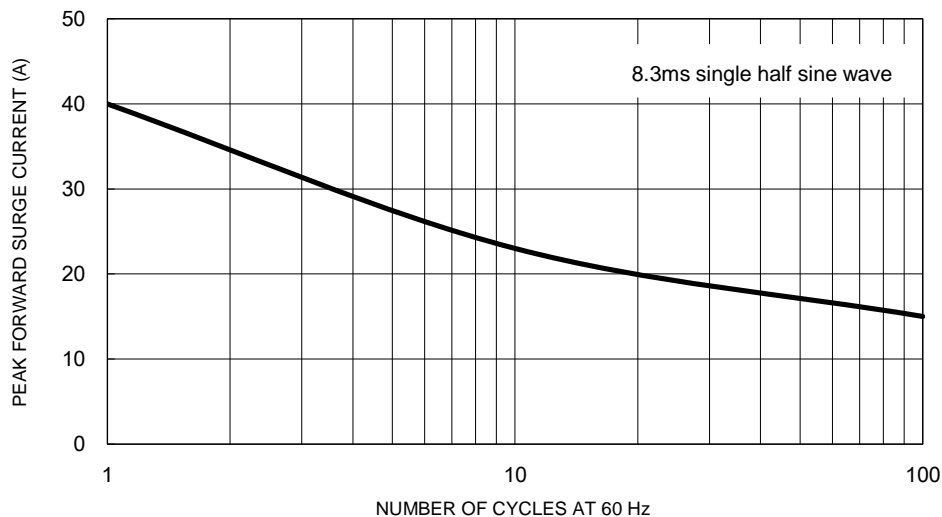


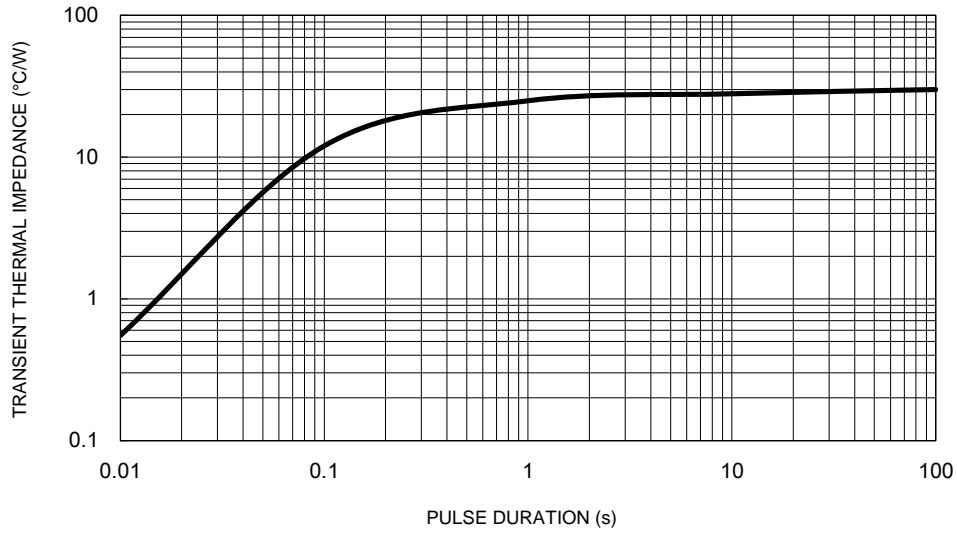
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

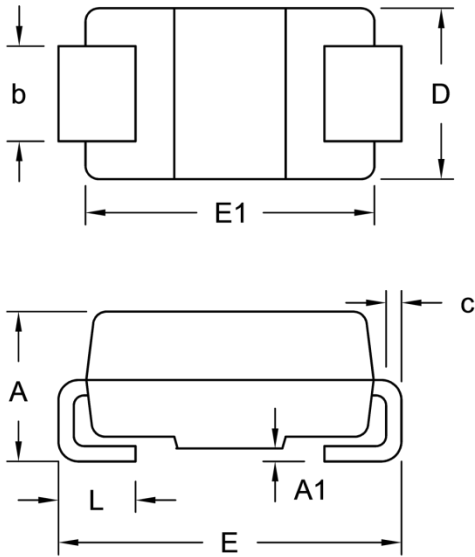
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Typical Transient Thermal Characteristics



PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.99	2.50	0.078	0.098
A1	0.10	0.20	0.004	0.008
b	1.27	1.58	0.050	0.062
c	0.15	0.31	0.006	0.012
D	2.29	2.83	0.090	0.111
E	4.95	5.33	0.195	0.210
E1	4.06	4.60	0.160	0.181
L	0.90	1.41	0.035	0.056

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

MARKING DIAGRAM



- P/N = Marking Code
- G = Green Compound
- YW = Date Code
- F = Factory Code

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