

## 2A, 50V - 1000V High Efficient Surface Mount Rectifier

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Glass passivated junction chip
- Fast switching for high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter

### MECHANICAL DATA

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Part no. with suffix "H" means AEC-Q101 qualified
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.09 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	2	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	50	A
$T_{JMAX}$	150	°C
Package	DO-214AA (SMB)	
Configuration	Single Die	



**DO-214AA (SMB)**

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	HS2A	HS2B	HS2D	HS2F	HS2G	HS2J	HS2K	HS2M	UNIT
Marking code on the device		HS2A	HS2B	HS2D	HS2F	HS2G	HS2J	HS2K	HS2M	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	210	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	600	800	1000	V
Forward current	$I_{F(AV)}$	2								A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	50								A
Junction temperature	$T_J$	- 55 to +150								°C
Storage temperature	$T_{STG}$	- 55 to +150								°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>LIMIT</b>	<b>UNIT</b>
Junction to Ambient Thermal Resistance	$R_{\theta JA}$	80	$^{\circ}\text{C/W}$

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^{\circ}\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	HS2A	$I_F = 2\text{A}, T_J = 25^{\circ}\text{C}$	$V_F$	-	1.0	V
	HS2B			-		V
	HS2D			-		V
	HS2F			-		V
	HS2G			-	1.3	V
	HS2J			-	1.7	V
	HS2K			-		V
	HS2M			-		V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>		$T_J = 25^{\circ}\text{C}$	$I_R$	-	5	$\mu\text{A}$
		$T_J = 125^{\circ}\text{C}$		-	150	$\mu\text{A}$
Junction capacitance	HS2A	1 MHz, $V_R = 4.0\text{V}$	$C_J$	50	-	pF
	HS2B				-	pF
	HS2D				-	pF
	HS2F				-	pF
	HS2G			-	pF	
	HS2J			30	-	pF
	HS2K				-	pF
	HS2M				-	pF
Reverse recovery time	HS2A	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	$t_{rr}$	50	-	ns
	HS2B				-	ns
	HS2D				-	ns
	HS2F				-	ns
	HS2G			-	ns	
	HS2J			75	-	ns
	HS2K				-	ns
	HS2M				-	ns

**Notes:**

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

<b>ORDERING INFORMATION</b>					
<b>PART NO.</b>	<b>PART NO. SUFFIX</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX(*)</b>	<b>PACKAGE</b>	<b>PACKING</b>
HS2x (Note 1)	H	R5	G	SMB	850 / 7" Plastic reel
		R4		SMB	3,000 / 13" Paper reel
		M4		SMB	3,000 / 13" Plastic reel

**Note:**

1. "x" defines voltage from 50V (HS2A) to 1000V (HS2M)

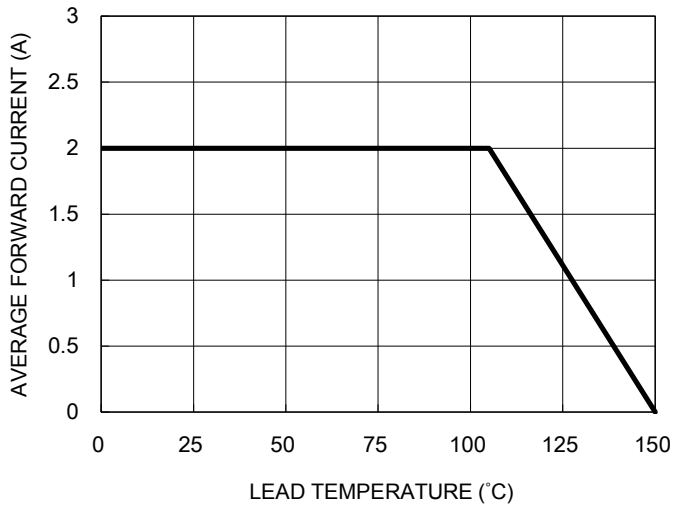
\*: Optional available

<b>EXAMPLE P/N</b>					
<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PART NO. SUFFIX</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
HS2JHR5G	HS2J	H	R5	G	AEC-Q101 qualified Green compound

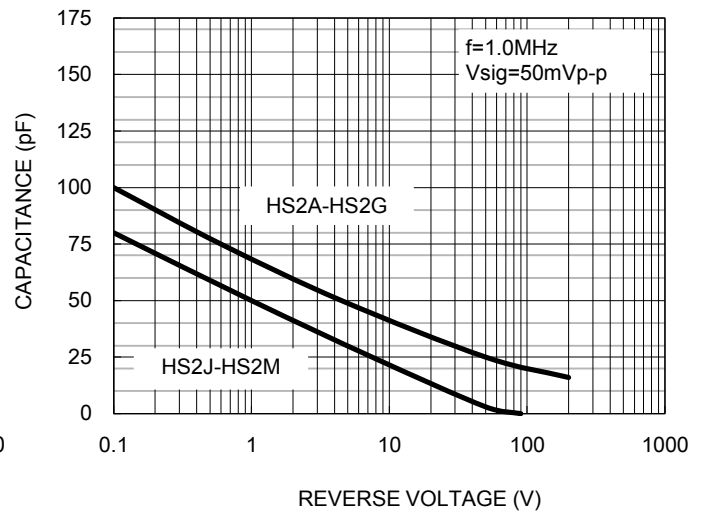
**CHARACTERISTICS CURVES**

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

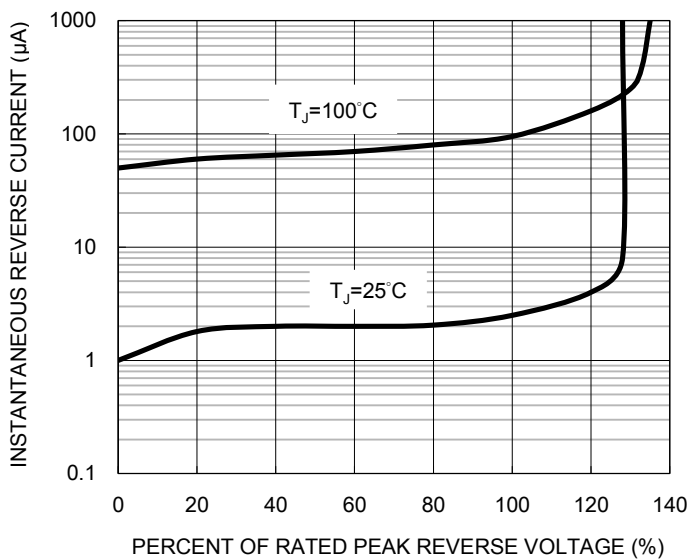
**Fig1. Forward Current Derating Curve**



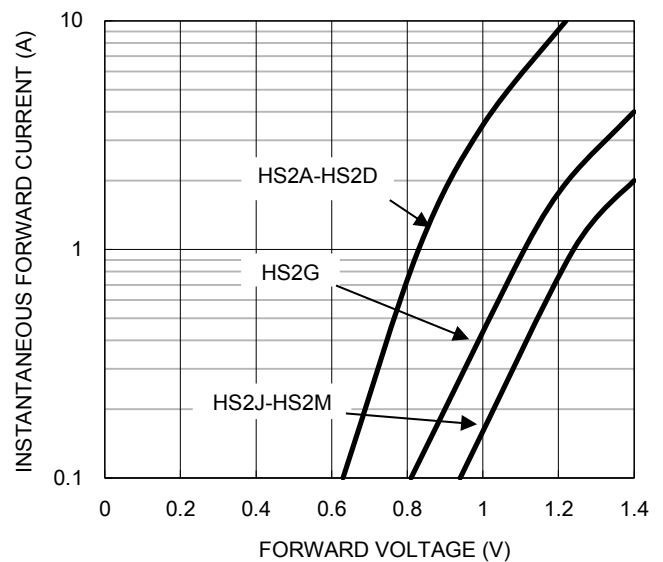
**Fig2. Typical Junction Capacitance**



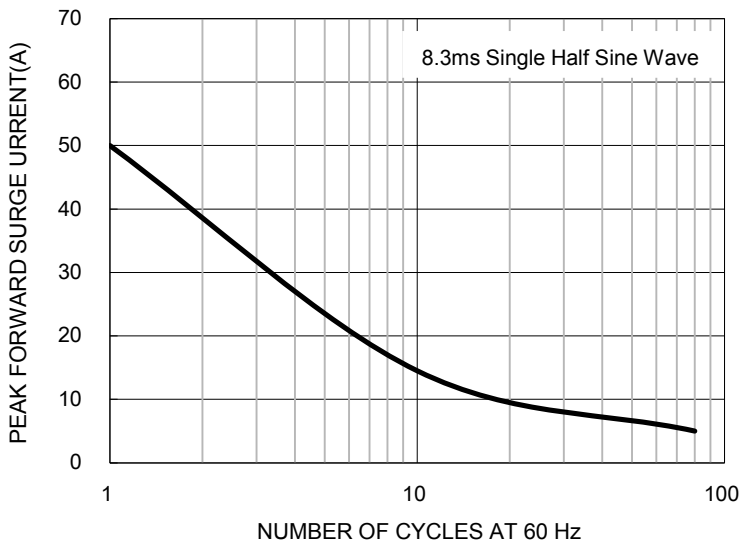
**Fig3. Typical Reverse Characteristics**



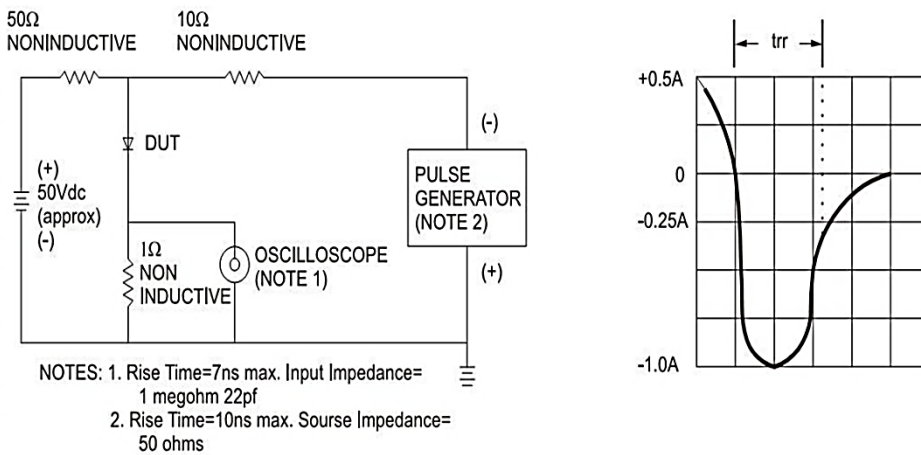
**Fig4. Typical Forward Characteristics**



**Fig5. Maximum Non-repetitive Forward Surge Current**



**Fig6. Reverse Recovery Time Characteristic And Test Circuit Diagram**



**PACKAGE OUTLINE DIMENSIONS**

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.95	2.20	0.077	0.087
B	4.05	4.60	0.159	0.181
C	3.30	3.95	0.130	0.156
D	1.95	2.65	0.077	0.104
E	0.75	1.60	0.030	0.063
F	5.10	5.60	0.201	0.220
G	0.05	0.20	0.002	0.008
H	0.15	0.31	0.006	0.012

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	2.3	0.091
B	2.5	0.098
C	4.3	0.169
D	1.8	0.071
E	6.8	0.268

**MARKING DIAGRAM**



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

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