3A, 50V - 1000V High Efficient Surface Mount Rectifier

FEATURES

- Low power loss, high efficiency
- Low forward voltage drop
- Low profile package
- Fast switching for 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

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	3	A
V_{RRM}	50 - 1000	V
I_{FSM}	100	A
$T_{J\ MAX}$	150	°C
Package	DO-214AA (SMB)	
Configuration	Signal Die	

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Monitor
- TV

MECHANICAL DATA

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- 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: 0.093 g (approximately)

Pb-Free RoHS COMPLIANT

DO-214AA (SMB)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	HS 3AB	HS 3BB	HS 3DB	HS 3FB	HS 3GB	HS 3JB	HS 3KB	HS 3MB	UNIT
Marking code on the device		HS 3AB	HS 3BB	HS 3DB	HS 3FB	HS 3GB	HS 3JB	HS 3KB	HS 3MB	
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	$I_{F(AV)}$	3								A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	100								A
Junction temperature	T_J	- 55 to +150								°C
Storage temperature	T_{STG}	- 55 to +150								°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	60	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode (1)	HS3AB	I_F = 3A, T_J = 25°C	V_F	-	1.0	V
	HS3BB					V
	HS3DB					V
	HS3FB					V
	HS3GB			-	1.3	V
	HS3JB			-	1.7	V
	HS3KB					V
	HS3MB					V
Reverse current @ rated V_R per diode (2)		T_J=25°C	I_R	-	10	μA
		T_J = 100°C	I_R	-	250	μA
Junction capacitance	HS3AB	1 MHz, V_R=4V	C_J	80	-	pF
	HS3BB				-	pF
	HS3DB				-	pF
	HS3FB				-	pF
	HS3GB				-	pF
	HS3JB			50	-	pF
	HS3KB				-	pF
	HS3MB				-	pF
Reverse recovery time	HS3AB	I_F=0.5A , I_R=1.0A I_{RR}=0.25A	t_{rr}	-	50	ns
	HS3BB					ns
	HS3DB					ns
	HS3FB					ns
	HS3GB					ns
	HS3JB			-	75	ns
	HS3KB					ns
	HS3MB					ns

Notes:

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

ORDERING INFORMATION					
PART NO.	**PART NO. SUFFIX**	**PACKING CODE**	**PACKING CODE SUFFIX(*)**	**PACKAGE**	**PACKING**
HS3xB (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 (HS3AB) to 1000V (HS3MB)

*: Optional available

EXAMPLE P/N					
EXAMPLE P/N	**PART NO.**	**PART NO. SUFFIX**	**PACKING CODE**	**PACKING CODE SUFFIX**	**DESCRIPTION**
HS3ABHR5G	HS3AB	H	R5	G	AEC-Q101 qualified Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig1. Forward Current Derating Curve

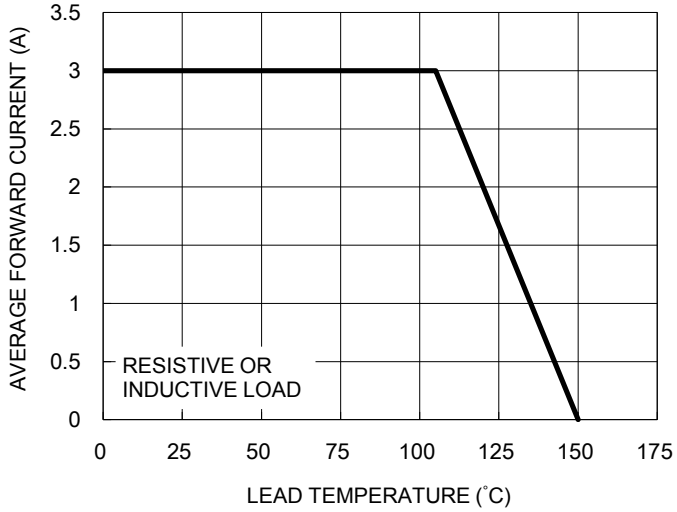


Fig2. Typical Junction Capacitance

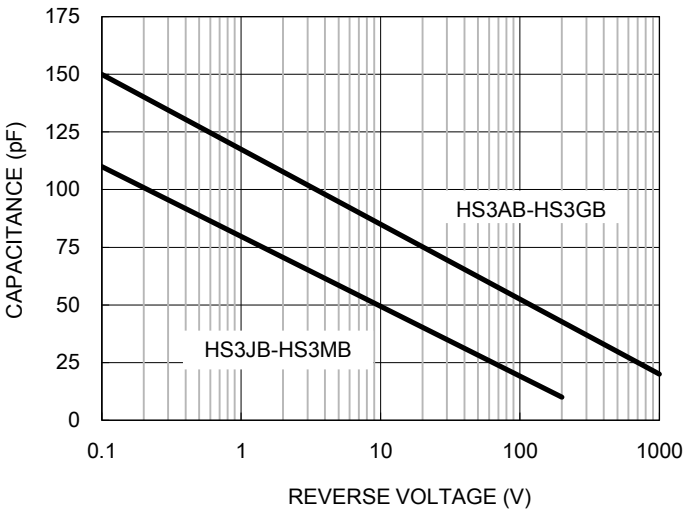


Fig3. Typical Reverse Characteristics

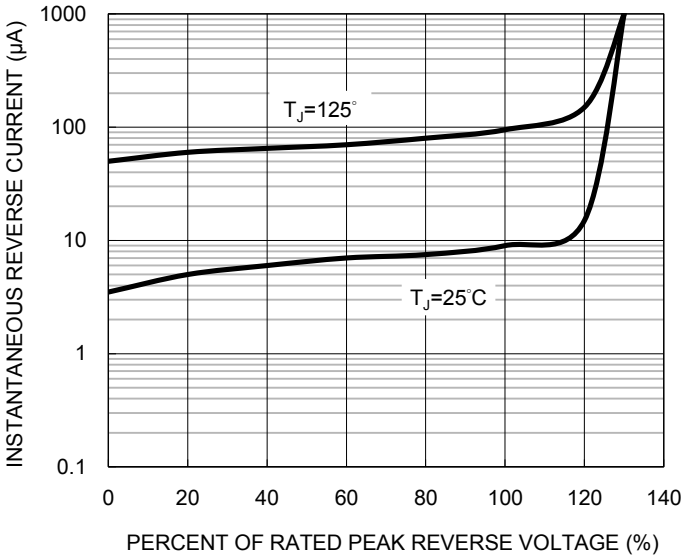


Fig4. Typical Forward Characteristics

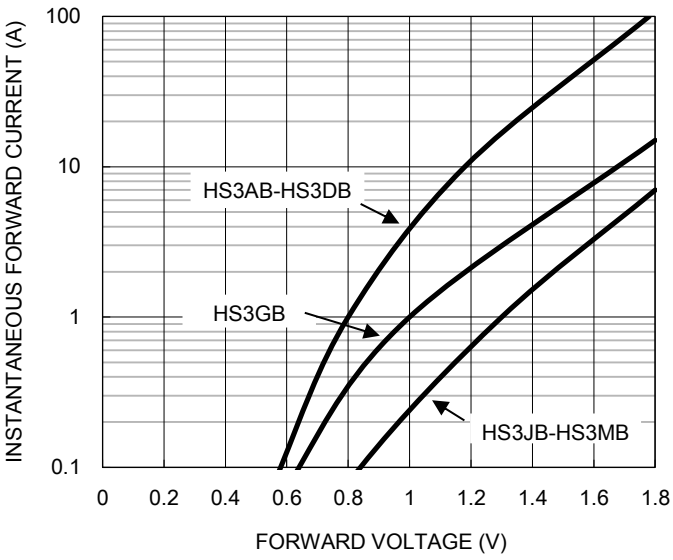


Fig5. Maximum Non-repetitive Forward Surge Current

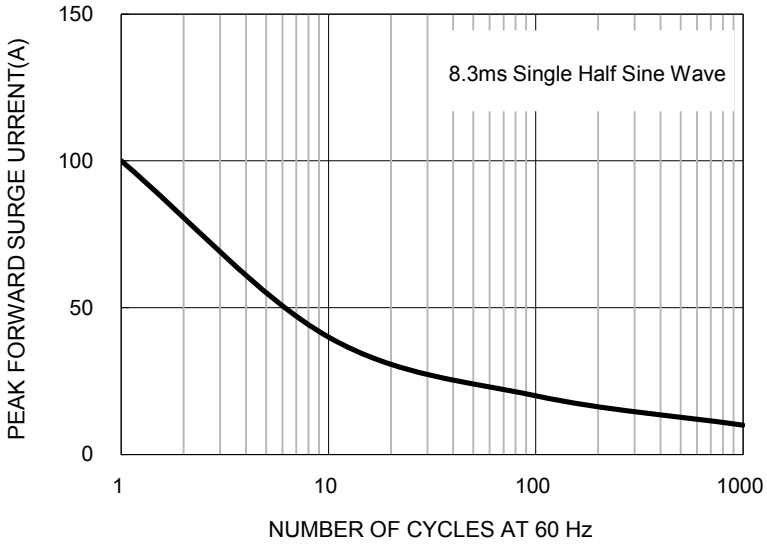
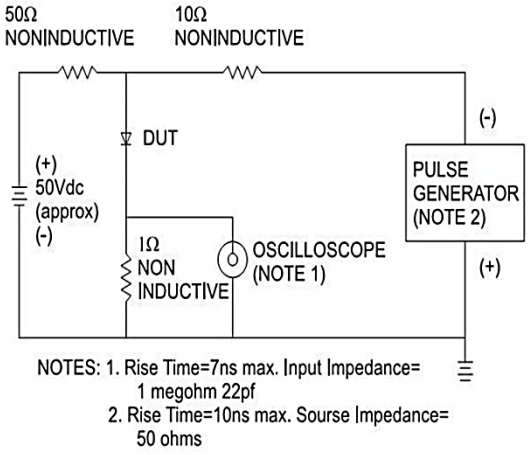
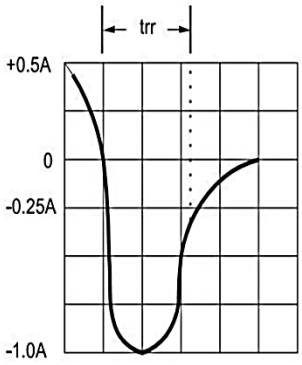


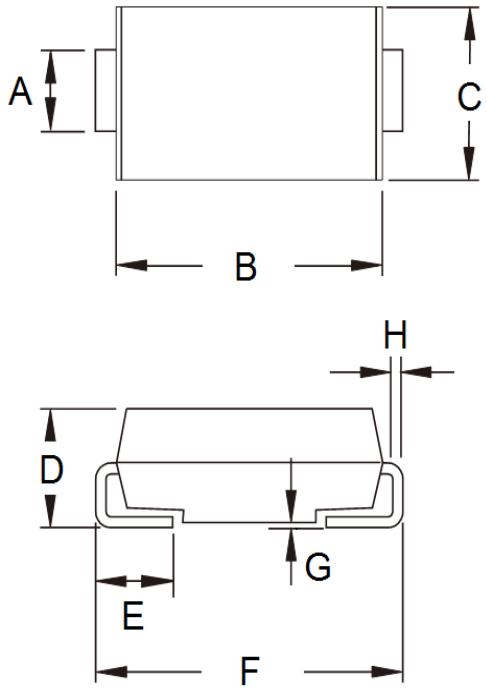
Fig6. Reverse Recovery Time Characteristic And Test Circuit Diagram





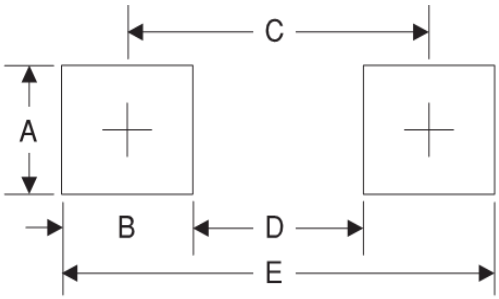
PACKAGE OUTLINE DIMENSIONS

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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