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

FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Low forward voltage drop
- Low profile package
- Fast switching for high efficiency
- Ideal for automated placement
- Glass passivated chip junction
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

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

APPLICATIONS

- DC to DC converter
- Automotive application
- Car lighting
- Snubber
- Freewheeling application

MECHANICAL DATA

- Case: DO-214AA (SMB)
- 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: 0.093g (approximately)

DO-214AA (SMB)

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

PARAMETER	SYMBOL	HS 3ABH	HS 3BBH	HS 3DBH	HS 3FBH	HS 3GBH	HS 3JBH	HS 3KBH	HS 3MBH	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
Forward current	I_F	3								A
Surge peak forward current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	100								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-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[1]	HS3ABH HS3BBH HS3DBH HS3FBH	I_F = 3A, T_J = 25°C	V_F	-	1.0	V V V V
	HS3GBH			-	1.3	V
	HS3JBH HS3KBH HS3MBH			-	1.7	V V V
Reverse current @ rated V_R[2]		T_J = 25°C	I_R	-	10	μA
		T_J = 100°C		-	250	μA
Junction capacitance	HS3ABH HS3BBH HS3DBH HS3FBH HS3GBH	1MHz, V_R = 4.0V	C_J	80	-	pF pF pF pF pF
	HS3JBH HS3KBH HS3MBH			50	-	pF pF pF
Reverse recovery time	HS3ABH HS3BBH HS3DBH HS3FBH HS3GBH	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	50	ns ns ns ns ns
	HS3JBH HS3KBH HS3MBH			-	75	ns ns ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
HS3xBH	DO-214AA (SMB)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 50V(HS3ABH) to 1000V(HS3MBH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

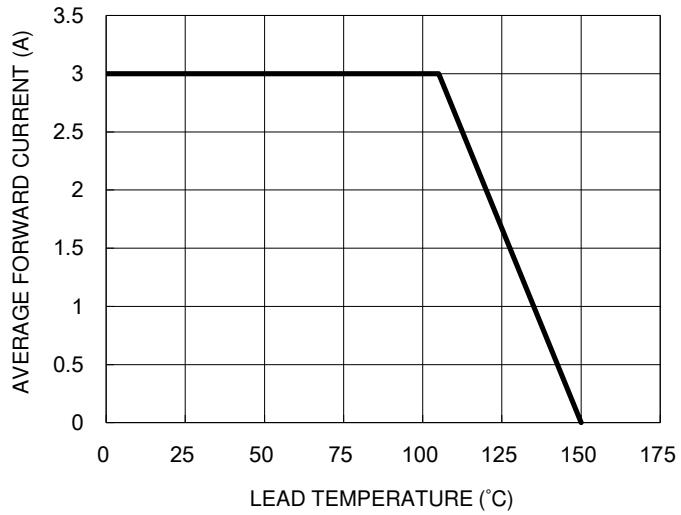


Fig.2 Typical Junction Capacitance

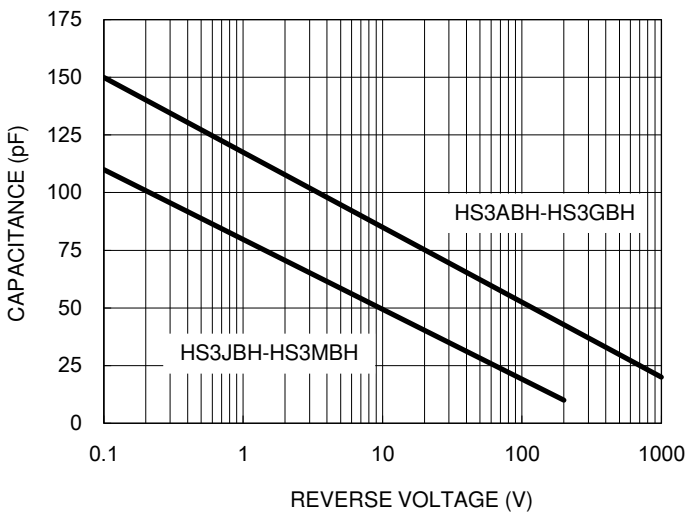


Fig.3 Typical Reverse Characteristics

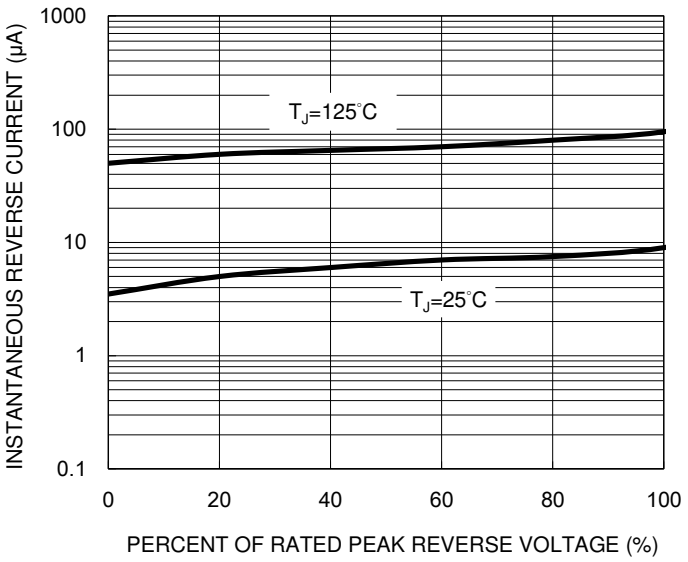
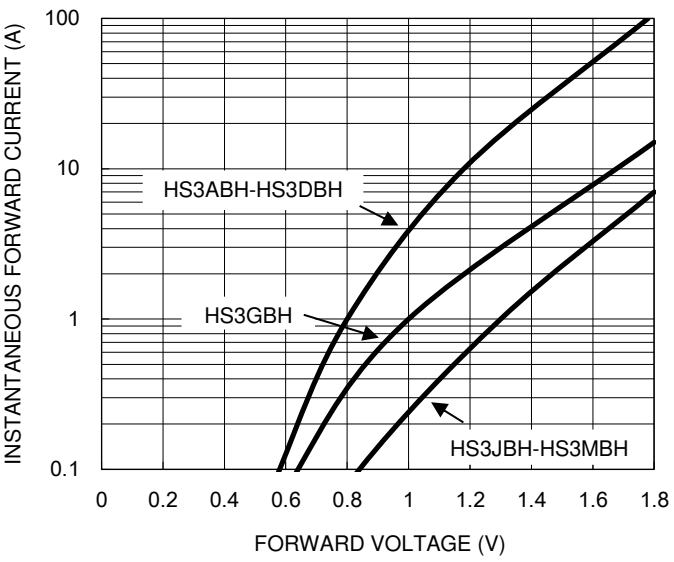


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 Maximum Non-repetitive Forward Surge Current

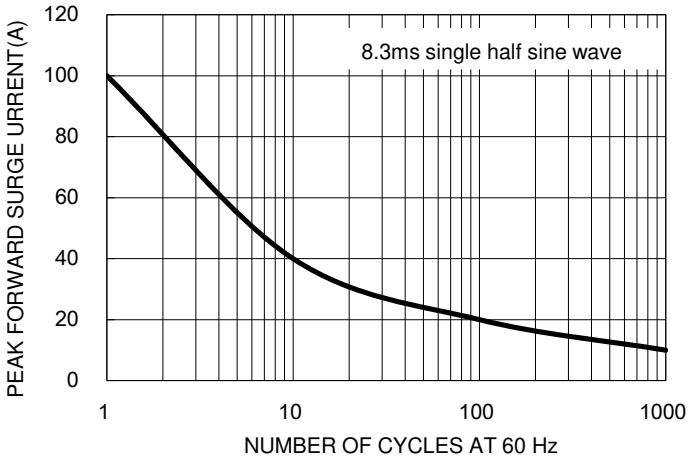
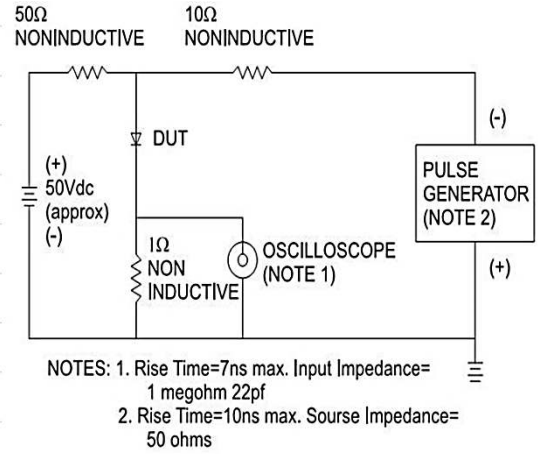
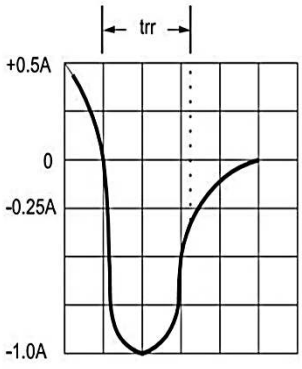


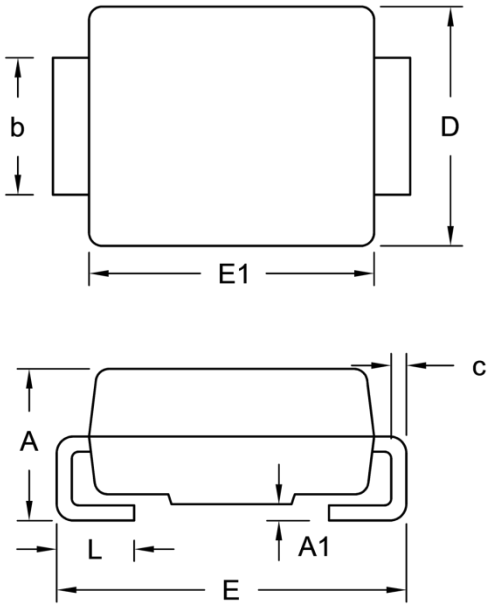
Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram





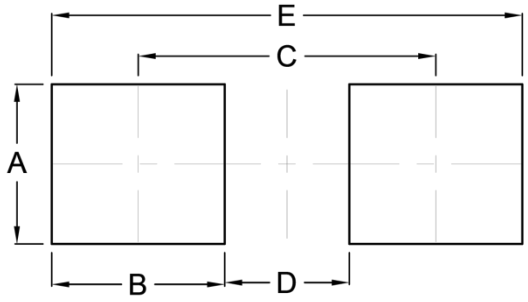
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
L	0.75	1.60	0.030	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.50	0.098
C	4.30	0.169
D	1.80	0.071
E	6.80	0.268

MARKING DIAGRAM

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

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