

## 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 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
$T_{JMAX}$	150	°C
Package	DO-214AA (SMB)	
Configuration	Single die	

### APPLICATIONS

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



DO-214AA (SMB)



### 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)

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	HS	HS	HS	HS	HS	HS	HS	HS	UNIT
		3AB	3BB	3DB	3FB	3GB	3JB	3KB	3MB	
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

<b>THERMAL PERFORMANCE</b>			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	60	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>	HS3AB HS3BB HS3DB HS3FB	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V
	HS3GB			-	1.3	V
	HS3JB HS3KB HS3MB			-	1.7	V
Reverse current @ rated $V_R$ <sup>(2)</sup>		$T_J = 25^\circ\text{C}$	$I_R$	-	10	$\mu\text{A}$
		$T_J = 100^\circ\text{C}$		-	250	$\mu\text{A}$
Junction capacitance	HS3AB HS3BB HS3DB HS3FB HS3GB	1MHz, $V_R = 4.0\text{V}$	$C_J$	80	-	pF
	HS3JB HS3KB HS3MB			50	-	pF
Reverse recovery time	HS3AB HS3BB HS3DB HS3FB HS3GB	$I_F = 0.5\text{A}, I_R = 1.0\text{A},$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	50	ns
	HS3JB HS3KB HS3MB			-	75	ns

**Notes:**

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

<b>ORDERING INFORMATION</b>		
ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
HS3xB	DO-214AA (SMB)	3,000 / Tape & Reel

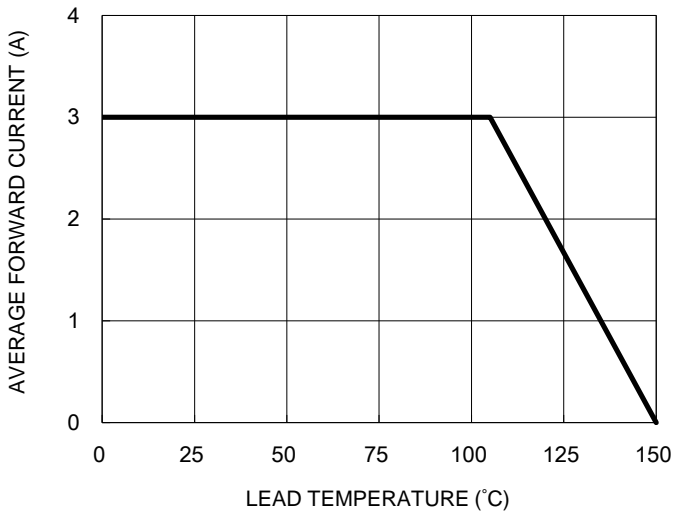
**Notes:**

1. "x" defines voltage from 50V(HS3AB) to 1000V(HS3MB)

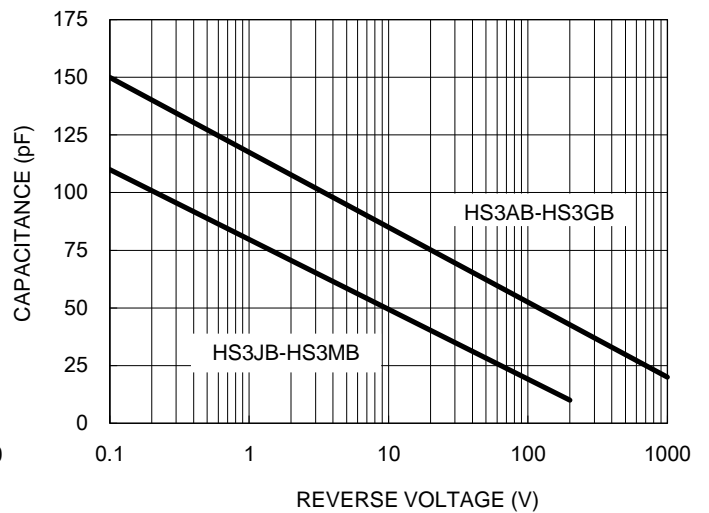
**CHARACTERISTICS CURVES**

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

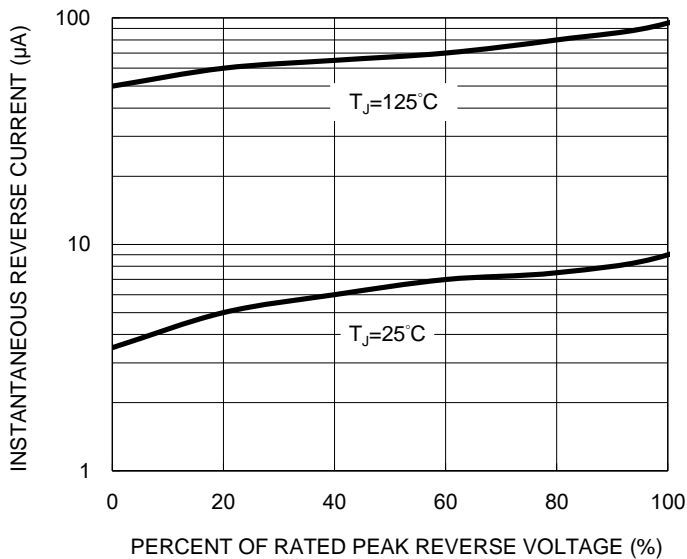
**Fig.1 Forward Current Derating Curve**



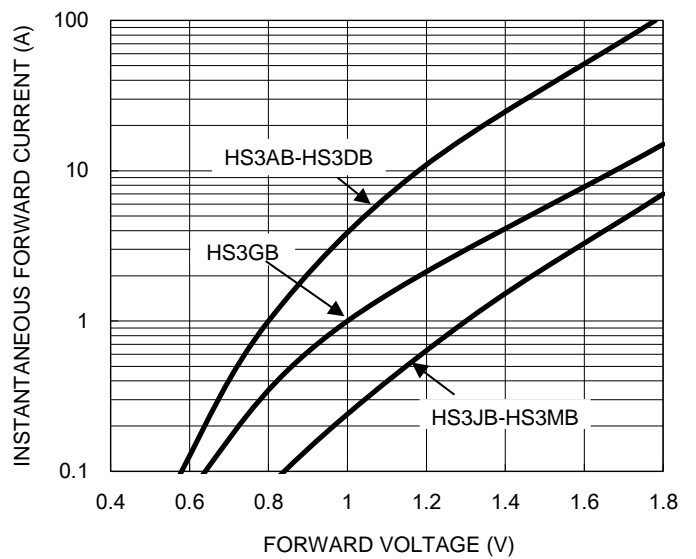
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



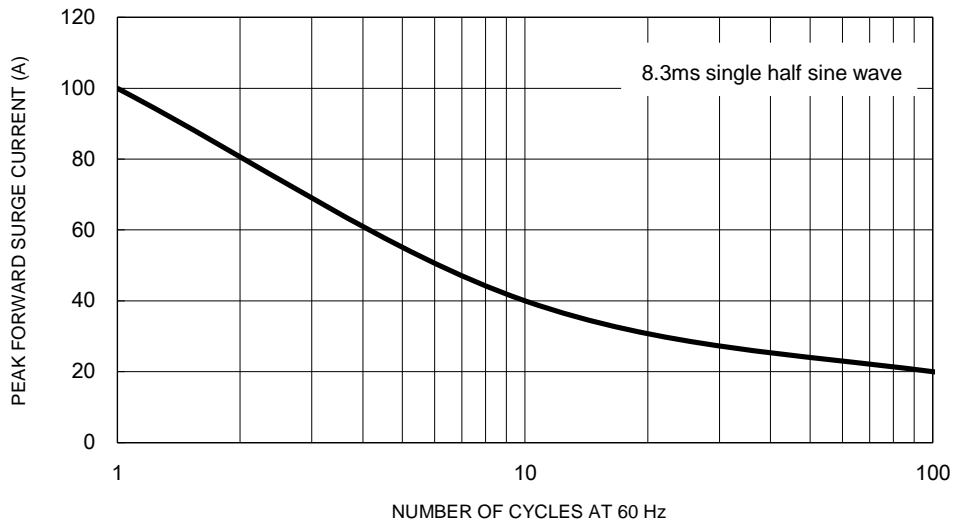
**Fig.4 Typical Forward Characteristics**



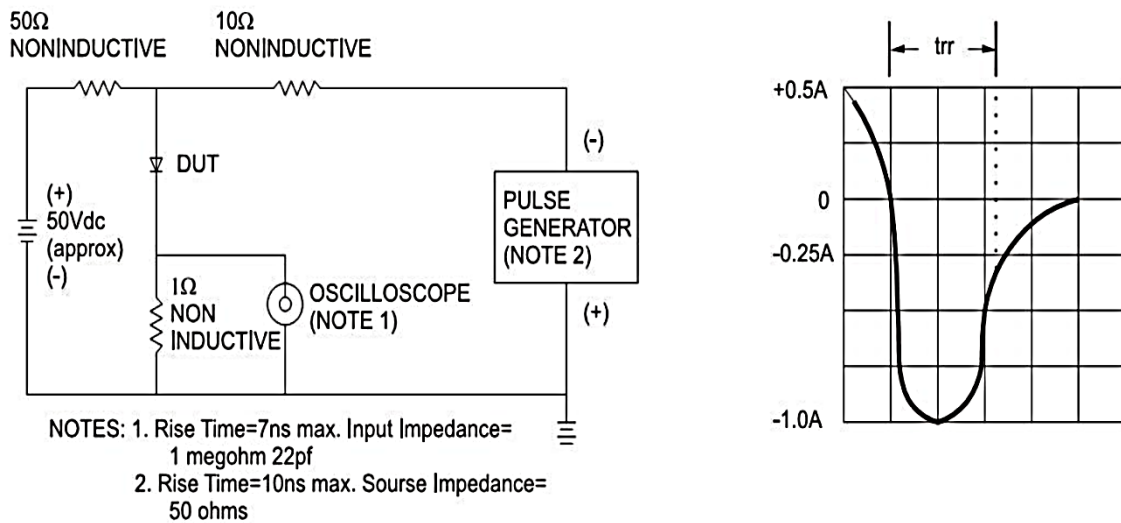
**CHARACTERISTICS CURVES**

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

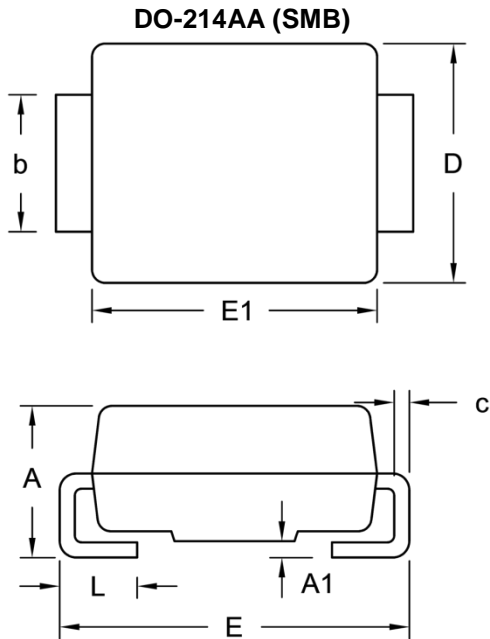
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**

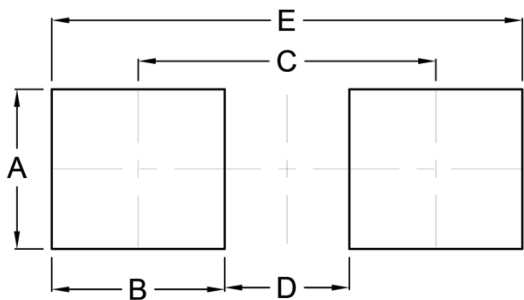


**PACKAGE OUTLINE DIMENSIONS**



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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