

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

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for high efficiency
- RoHS Compliant
- 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
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.090g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	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
Forward current	$I_F$	2								A
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	50								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	$R_{\theta JA}$	80	°C/W

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

**Notes:**

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

ORDERING INFORMATION		
ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
HS2x	DO-214AA (SMB)	3,000 / Tape & Reel

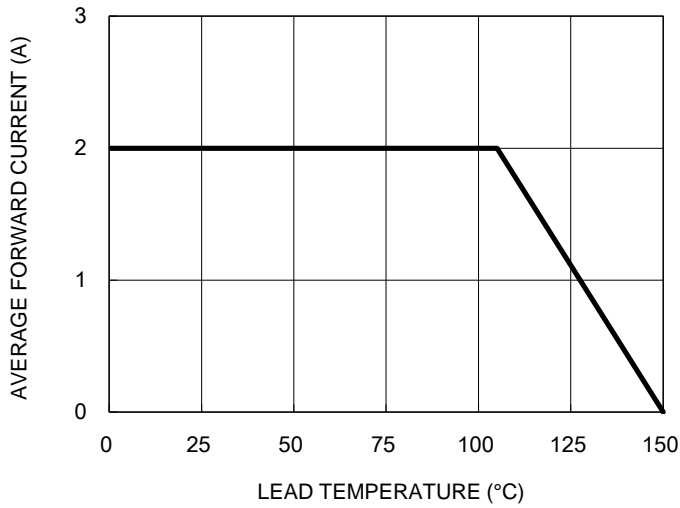
**Notes:**

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

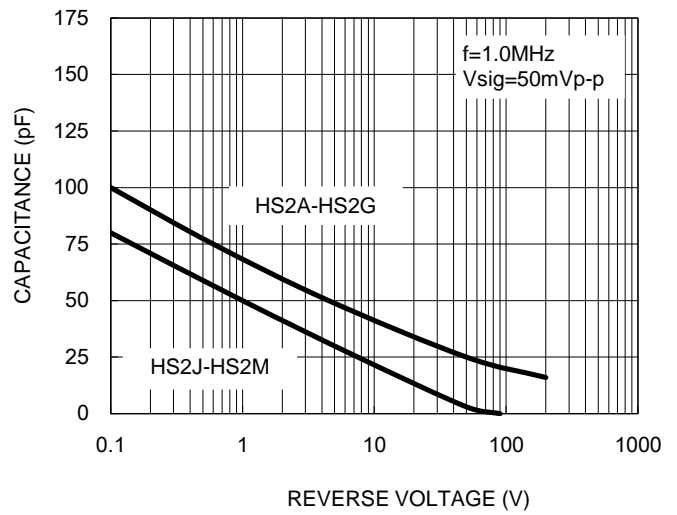
**CHARACTERISTICS CURVES**

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

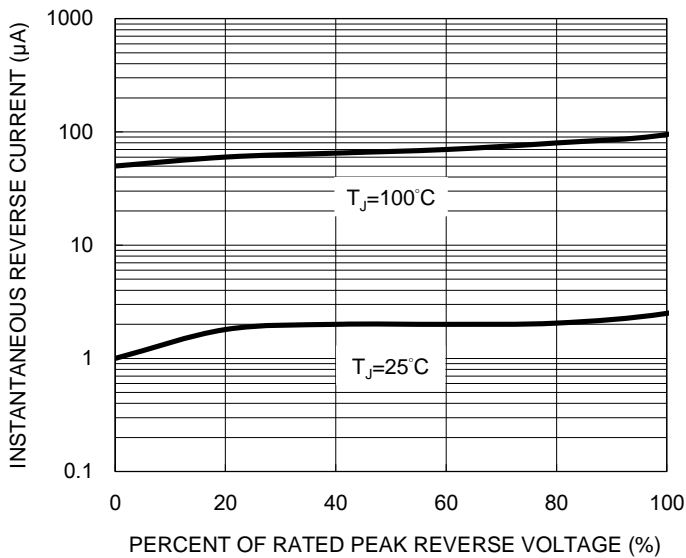
**Fig.1 Forward Current Derating Curve**



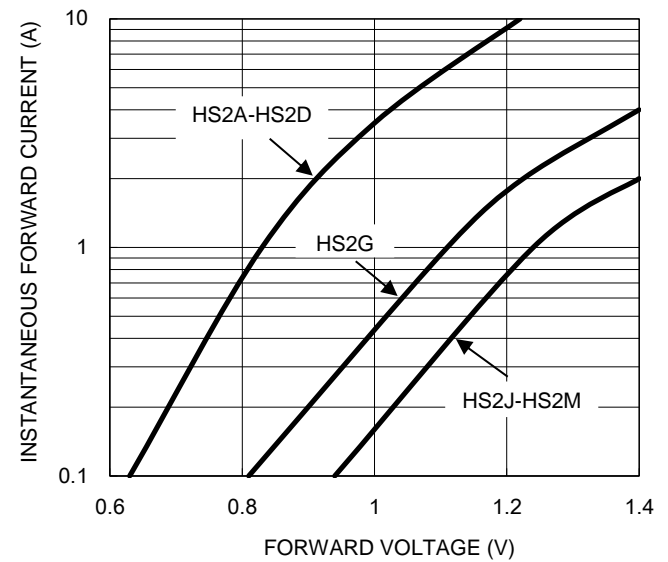
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



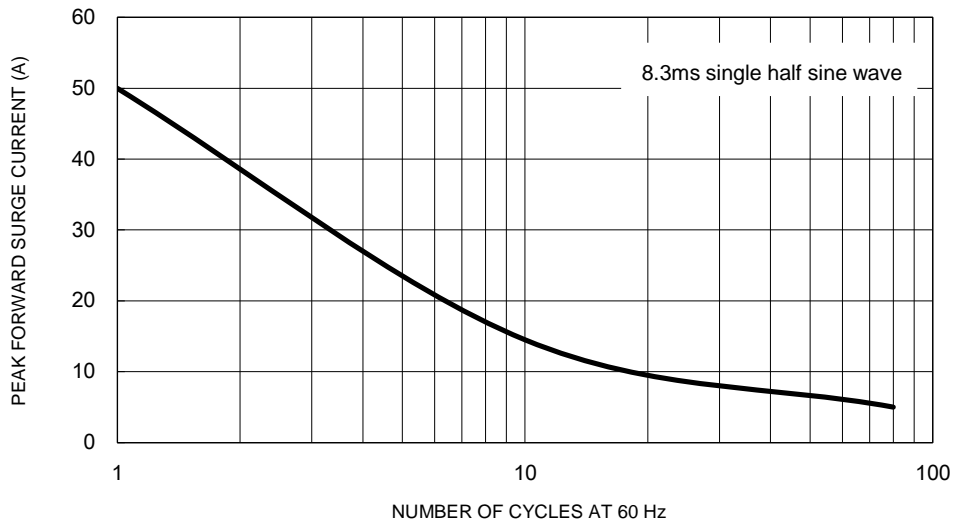
**Fig.4 Typical Forward Characteristics**



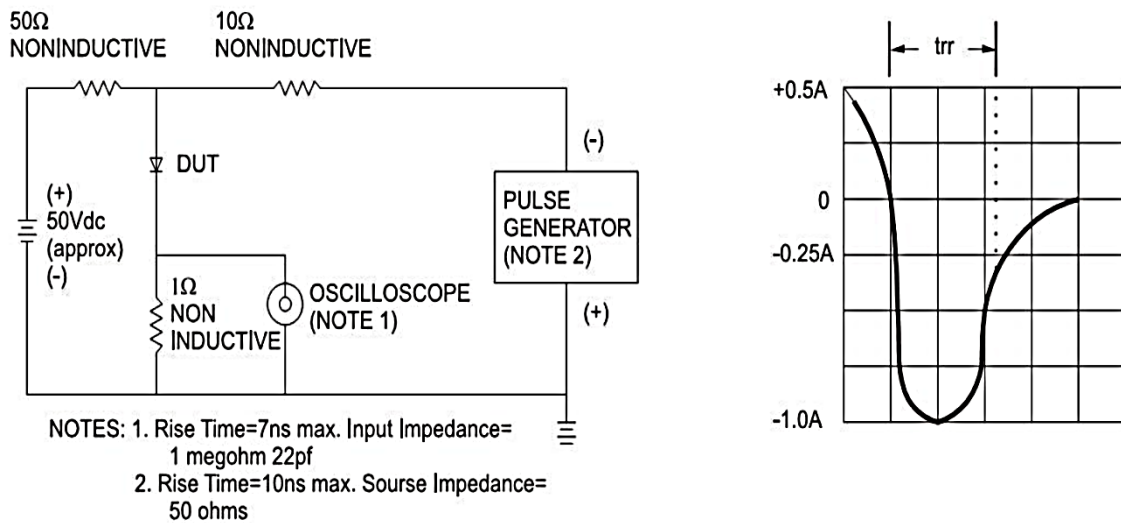
**CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25°C unless otherwise noted)

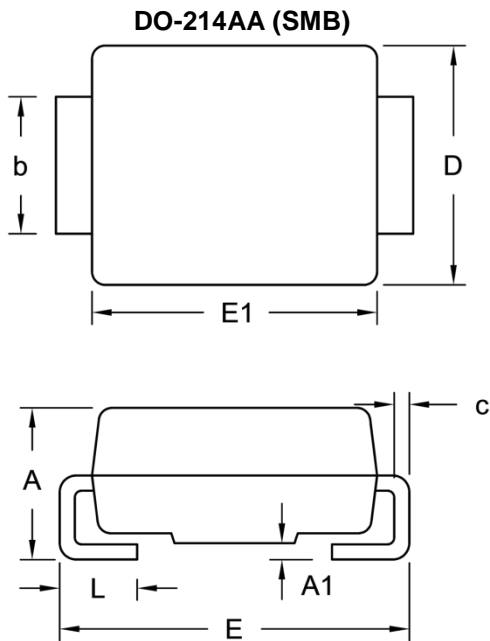
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



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

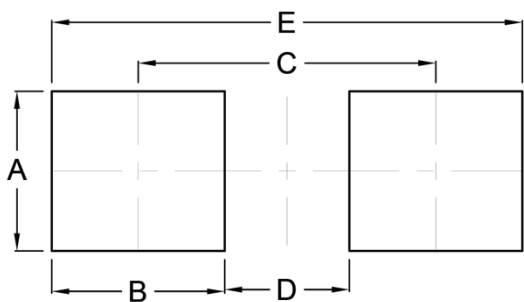


**PACKAGE OUTLINE DIMENSIONS**



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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