

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 ⁽¹⁾	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 ⁽²⁾			$T_J = 25^\circ\text{C}$	I_R	-	5	μA	
				$T_J = 125^\circ\text{C}$		-	150	μA	
	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 ⁽¹⁾	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

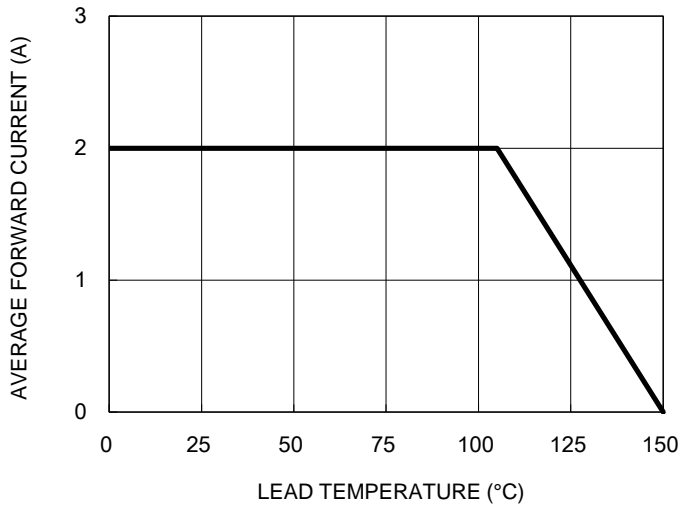


Fig.2 Typical Junction Capacitance

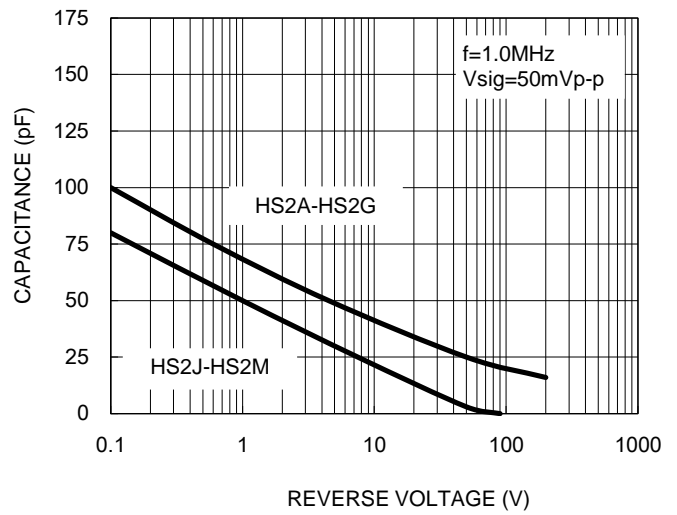


Fig.3 Typical Reverse Characteristics

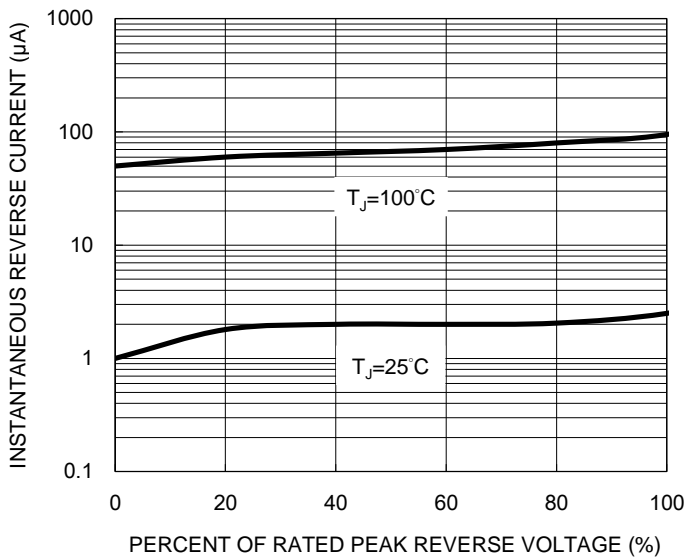
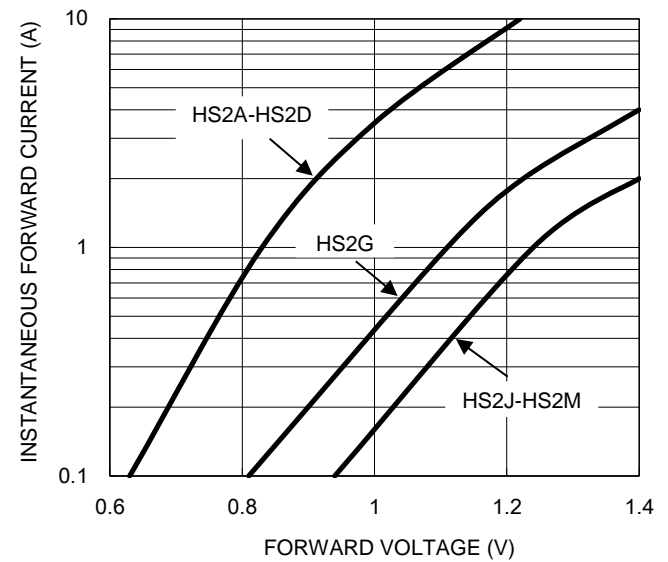


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 Maximum Non-Repetitive Forward Surge Current

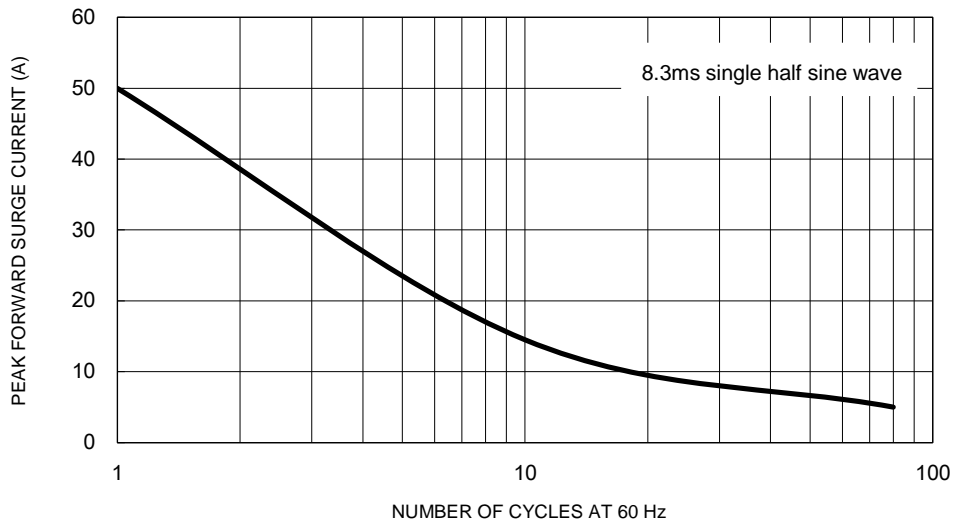
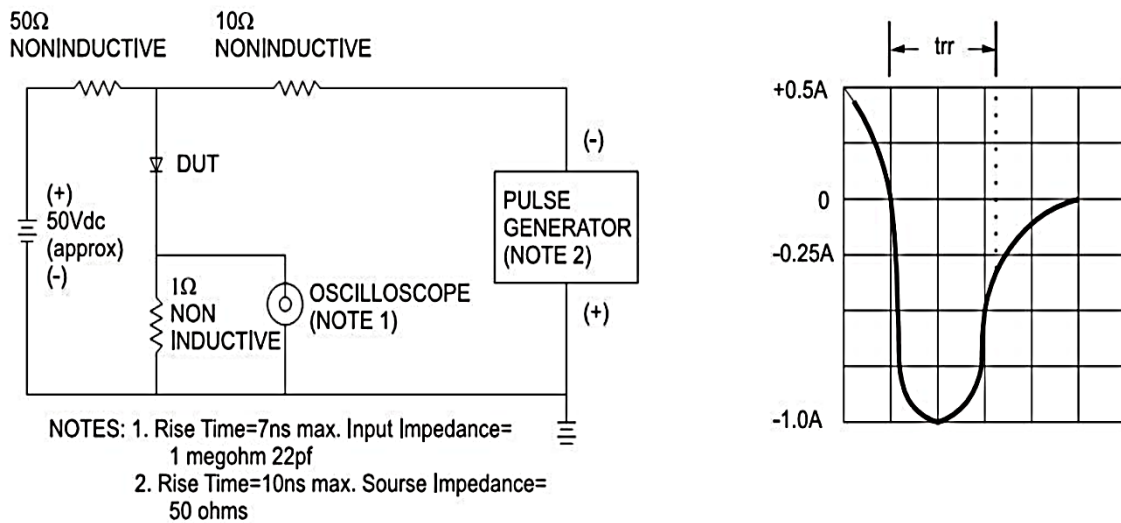
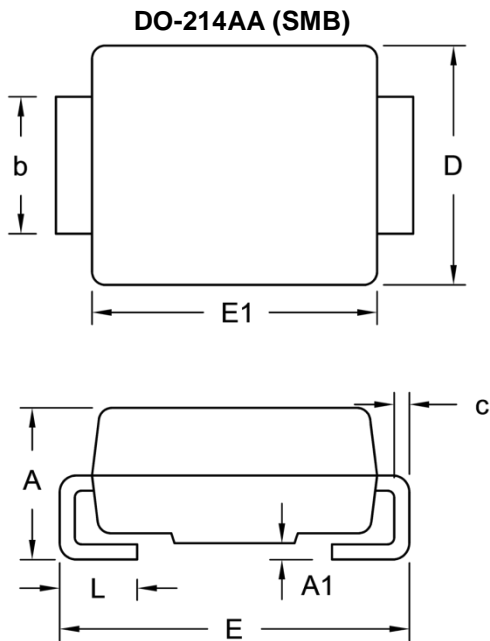


Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram

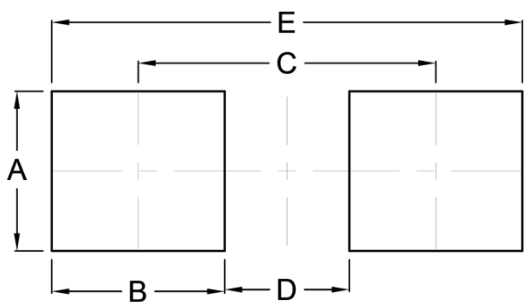


PACKAGE OUTLINE DIMENSIONS



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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