

1A, 1200V High Efficient Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low power loss, high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

- Switching mode converters and inverters
- Lighting application
- Snubber
- Freewheeling application
- Bootstrap rectifier

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: 0.088g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	1200	V
I_{FSM}	35	A
$T_J \text{ MAX}$	175	°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	VALUE	UNIT
Repetitive peak reverse voltage		V_{RRM}	1200	V
Reverse voltage, total rms value		$V_{R(RMS)}$	840	V
Forward current		I_F	1	A
Surge peak forward current single half sine-wave superimposed on rated load	$t = 8.3\text{ms}$	I_{FSM}	35	A
	$t = 1.0\text{ms}$		130	
Junction temperature		T_J	-40 to +175	°C
Storage temperature		T_{STG}	-55 to +175	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	13	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	69	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	15	°C/W

Thermal Performance Note: Units mounted on PCB (10mm x 10mm Cu pad test board)

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$	V_F	1.39	-	V
	$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$		1.62	1.9	V
	$I_F = 0.5\text{A}, T_J = 125^\circ\text{C}$		0.99	-	V
	$I_F = 1.0\text{A}, T_J = 125^\circ\text{C}$		1.19	-	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$T_J = 125^\circ\text{C}$		11	-	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	12	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	75	ns

Notes:

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

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
HS1QB	DO-214AA (SMB)	3,000/ Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

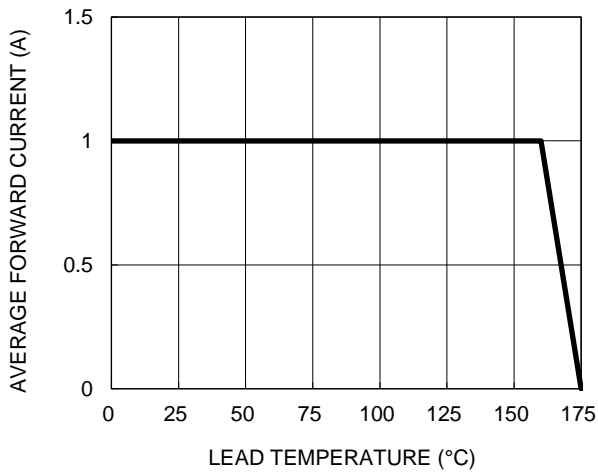


Fig.2 Typical Junction Capacitance

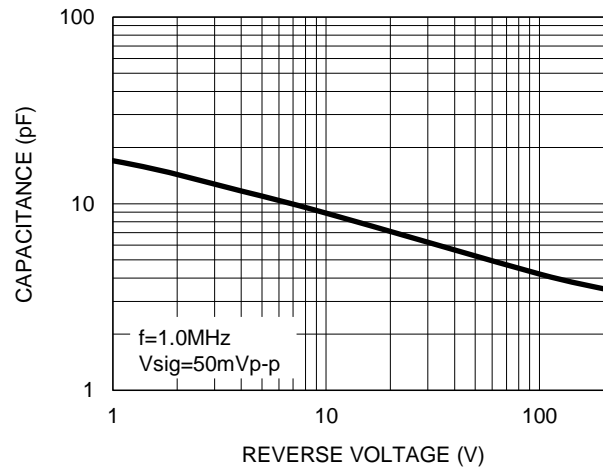


Fig.3 Typical Reverse Characteristics

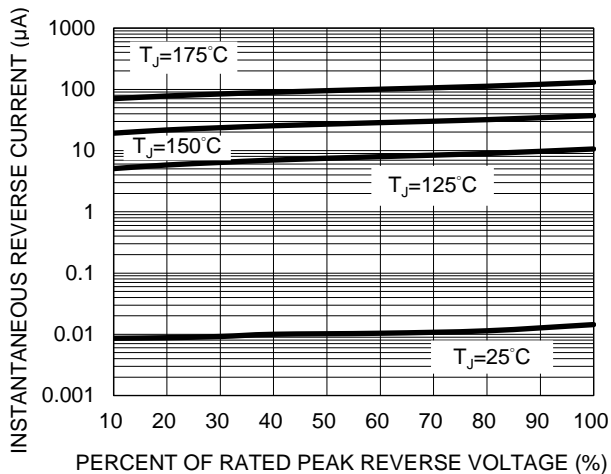


Fig.4 Typical Forward Characteristics

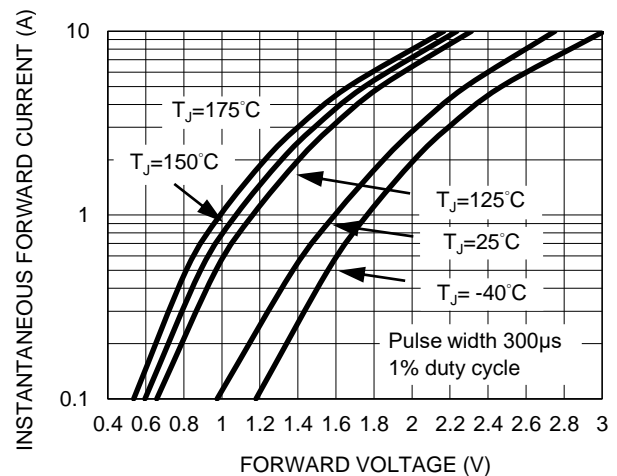
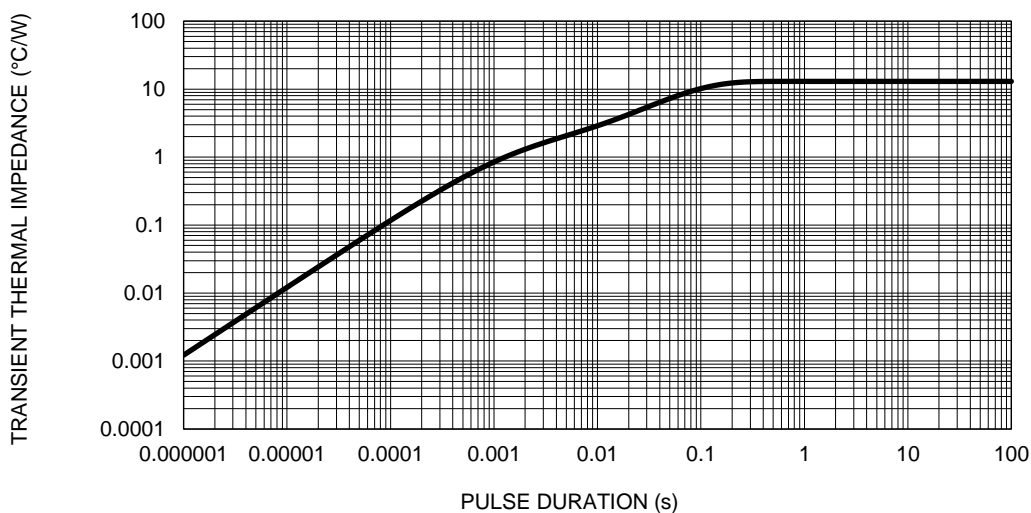
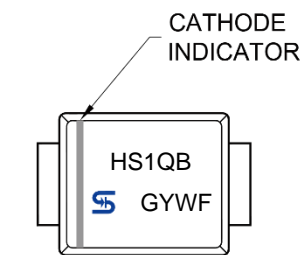
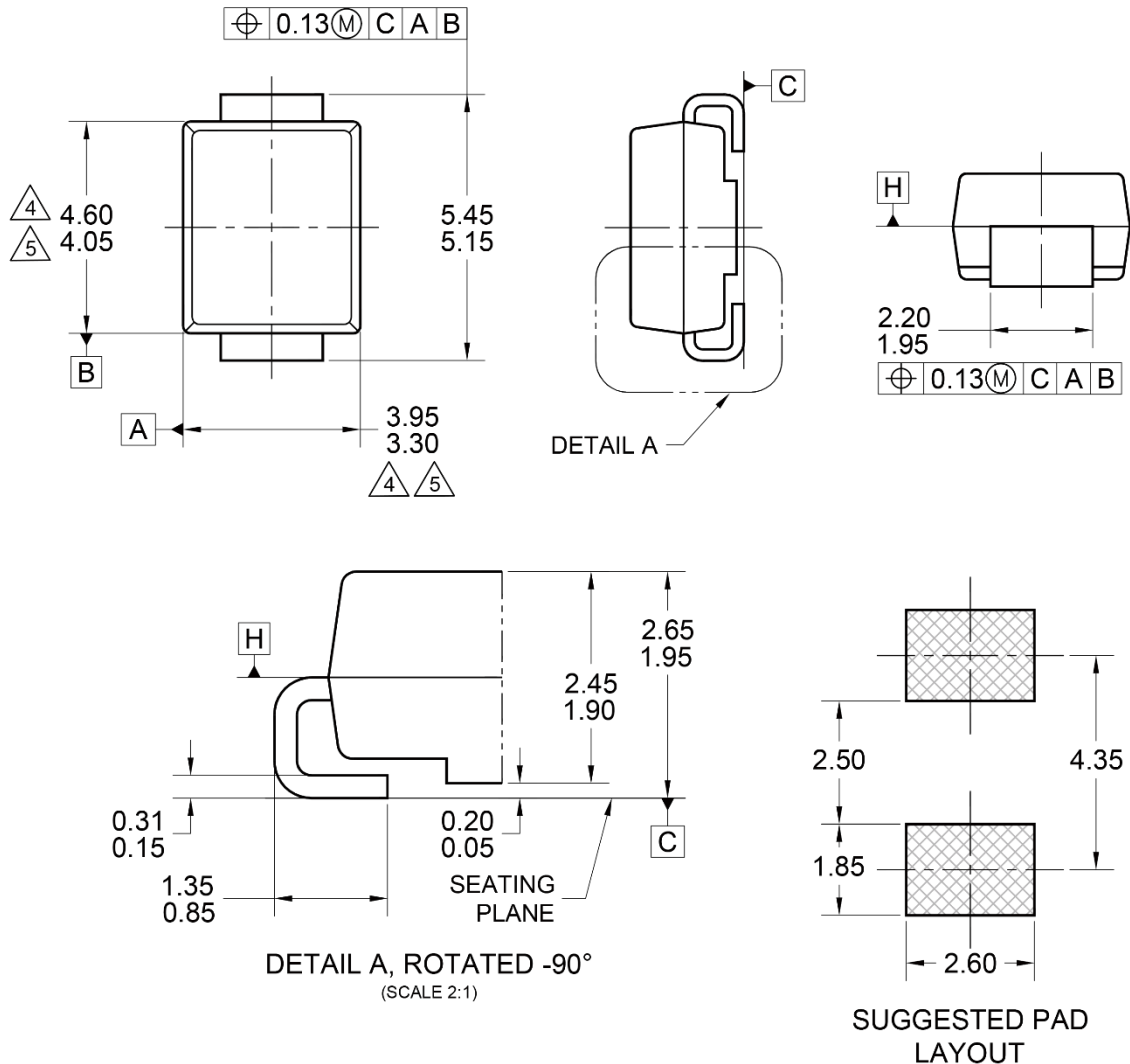


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



MARKING DIAGRAM

G = GREEN COMPOUND
 YW = DATE CODE
 F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
- PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AA, ISSUE D.
- MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
- MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
- DWG NO. REF: HQ2SD07-DO214SMBHV-128 REV B.

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