

3A, 600V Standard Surface Mount Rectifier

FEATURES

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

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

MECHANICAL DATA

- Case: Thin SMA
- 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: 0.029g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	3	A
V_{RRM}	600	V
I_{F50}	50	A
$T_{J\ MAX}$	150	°C
Package	Thin SMA	
Configuration	Single die	


Thin SMA


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

PARAMETER	SYMBOL	S3JAL	UNIT
Marking code on the device		S3JAL	
Repetitive peak reverse voltage	V_{RRM}	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Forward current	I_F	3	A
Surge peak forward current single half sine wave superimposed on rated load	$t = 8.3\text{ms}$	50	A
	$t = 1.0\text{ms}$	140	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-lead thermal resistance	$R_{\Theta JL}$	14	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	74	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	20	°C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ C$ unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 1.5A, T_J = 25^\circ C$	V_F	0.95	-	V
	$I_F = 3.0A, T_J = 25^\circ C$		1.03	1.10	V
	$I_F = 1.5A, T_J = 125^\circ C$		0.84	-	V
	$I_F = 3.0A, T_J = 125^\circ C$		0.94	-	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ C$	I_R	-	1	μA
	$T_J = 125^\circ C$		7	-	μA
Junction capacitance	1MHz, $V_R = 4.0V$	C_J	14	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
S3JAL	Thin SMA	14,000 / Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

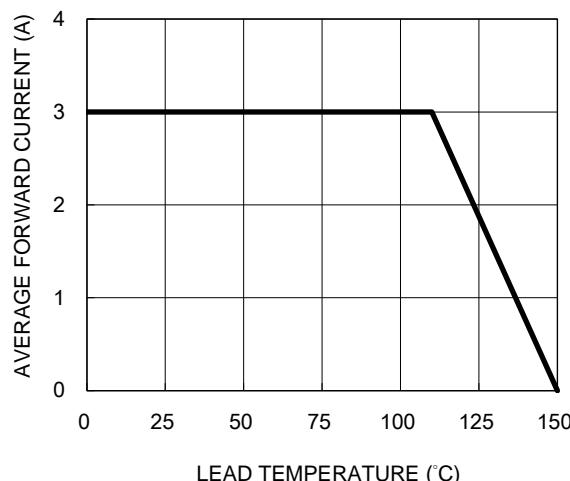


Fig.2 Typical Junction Capacitance

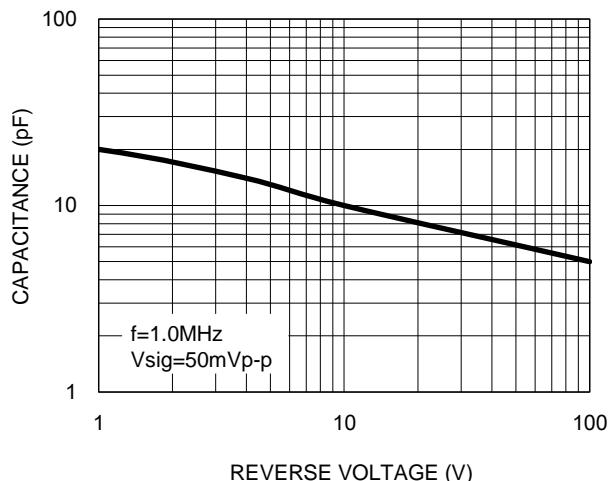


Fig.3 Typical Reverse Characteristics

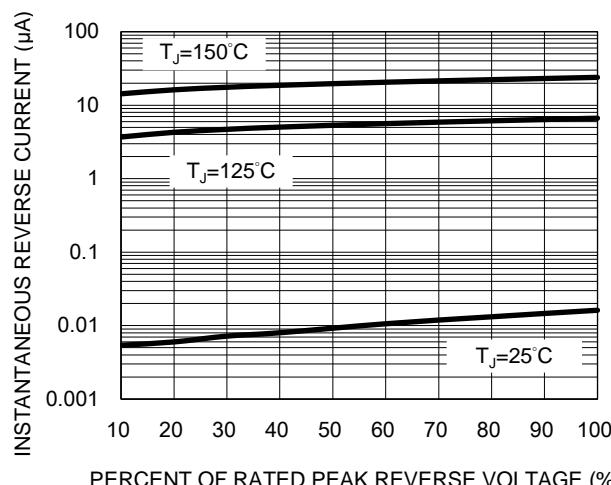


Fig.4 Typical Forward Characteristics

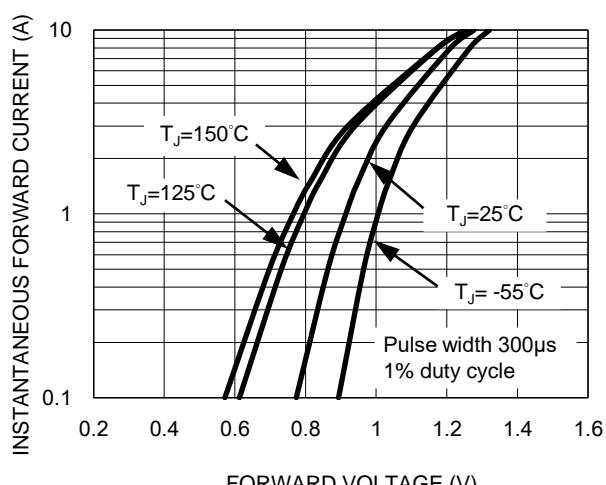
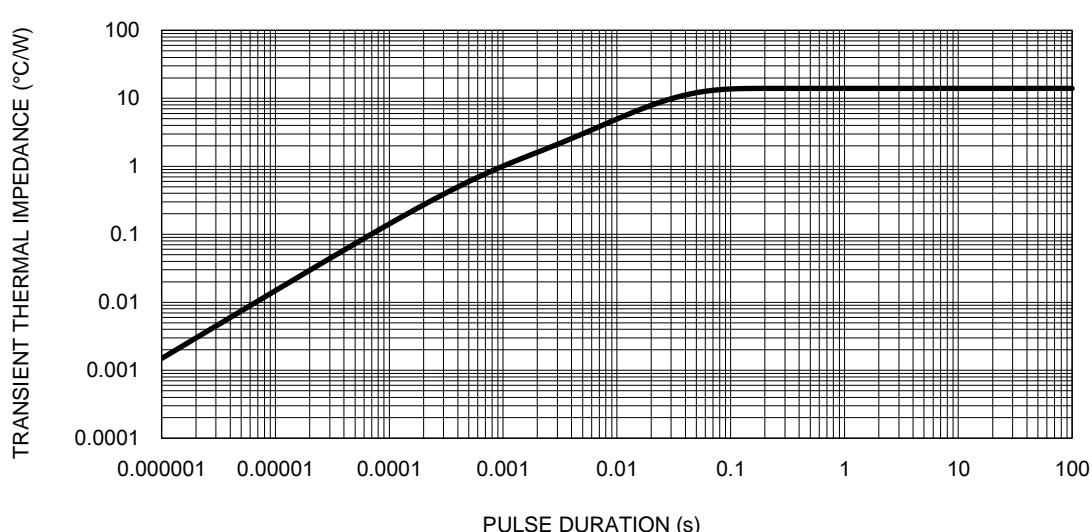
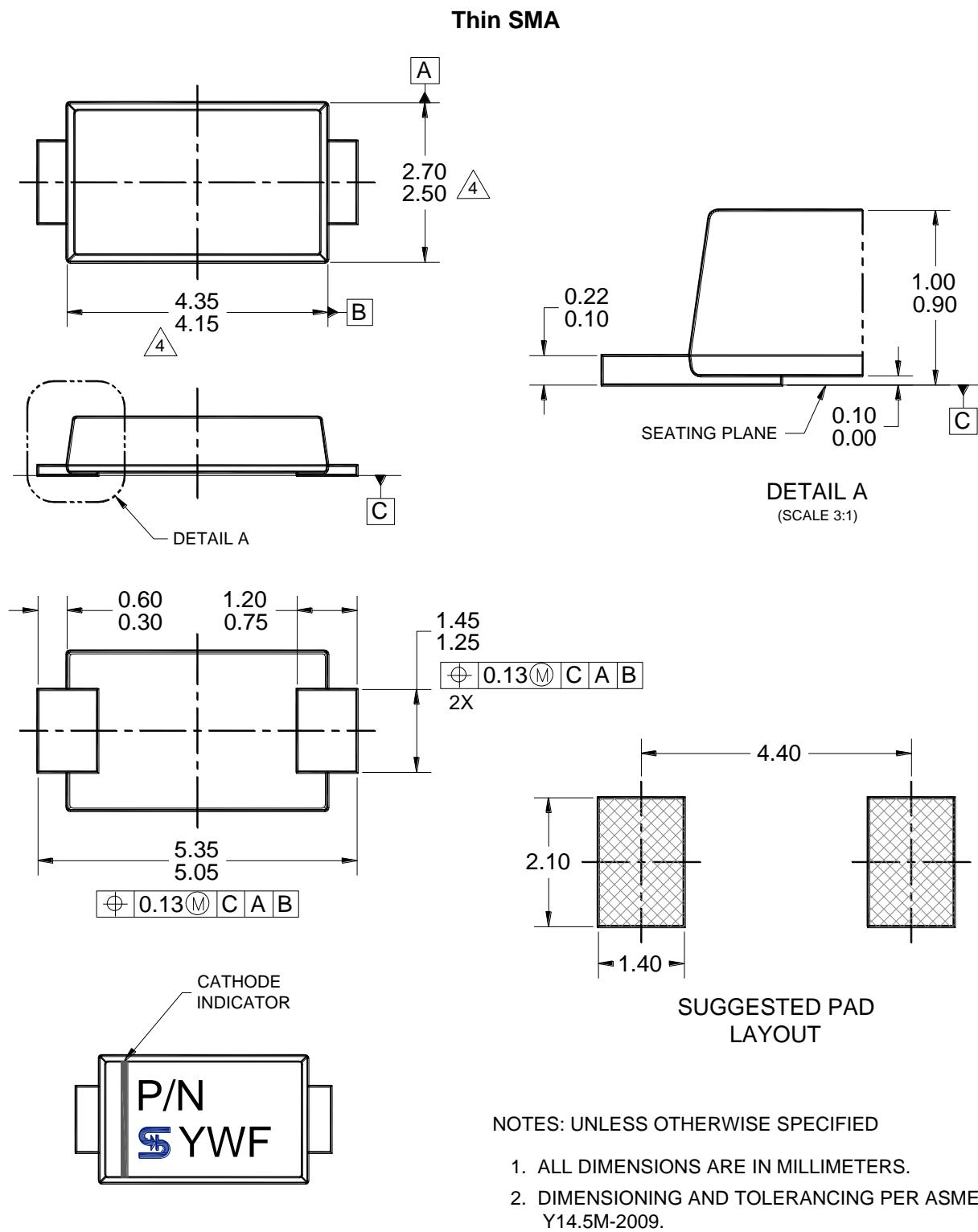


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

MARKING DIAGRAM

P/N = MARKING CODE

YW = DATE CODE

F = FACTORY CODE

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-221, VARIATION AC, ISSUE B.
4. MODED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. SUGGESTED PAD LAYOUT IS FOR REFERENCE PURPOSE ONLY.
6. DWG NO. REF: HQ2SD07-TSMA-074 REV A.

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