

4A, 200V - 1000V Standard Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- High surge current capability
- Ideal for automated placement
- Wettable flank
- 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

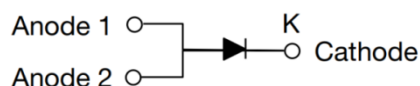
MECHANICAL DATA

- Case: TO-277A (SMPC4.6U)
- 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: 0.107g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	4	A
V_{RRM}	200 - 1000	V
I_{FSM}	120	A
$T_{J\ MAX}$	150	°C
Package	TO-277A (SMPC4.6U)	
Configuration	Single die	



TO-277A (SMPC4.6U)



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

PARAMETER		SYMBOL	TUAS 4D	TUAS 4G	TUAS 4J	TUAS 4K	TUAS 4M	UNIT
Marking code on the device			AS4D	AS4G	AS4J	AS4K	AS4M	
Repetitive peak reverse voltage		V _{RRM}	200	400	600	800	1000	V
Reverse voltage, total rms value		V _{R(RMS)}	140	280	420	560	700	V
Forward current		I _F	4					A
Surge peak forward current single half sine-wave superimposed on rated load	t = 8.3ms	I _{FSM}	120					A
	t = 1.0ms		280					
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	$R_{\theta JL}$	5.2	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	46	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	8.6	°C/W

Thermal Performance Note: Units mounted on PCB (16mm x 16mm 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 = 2A, T _J = 25°C	V _F	0.89	-	V
		I _F = 4A, T _J = 25°C		0.95	1.10	V
		I _F = 2A, T _J = 125°C		0.78	-	V
		I _F = 4A, T _J = 125°C		0.85	-	V
Reverse current @ rated V _R ⁽²⁾		T _J = 25°C	I _R	-	5	μA
		T _J = 125°C		10	-	μA
Junction capacitance	TUAS4D TUAS4G TUAS4J	1MHz, V _R = 4.0V	C _J	33	-	pF
	TUAS4K TUAS4M			28	-	

Notes:

- Pulse test with $PW = 0.3\text{ms}$
- Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
TUAS4x	TO-277A (SMPC4.6U)	6,000 / Tape & Reel

Notes:

- "x" define voltage from 200V(TUAS4D) to 1000V(TUAS4M)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

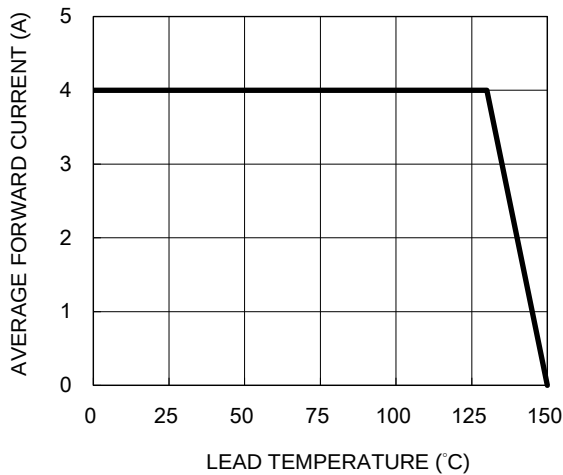


Fig.2 Typical Junction Capacitance

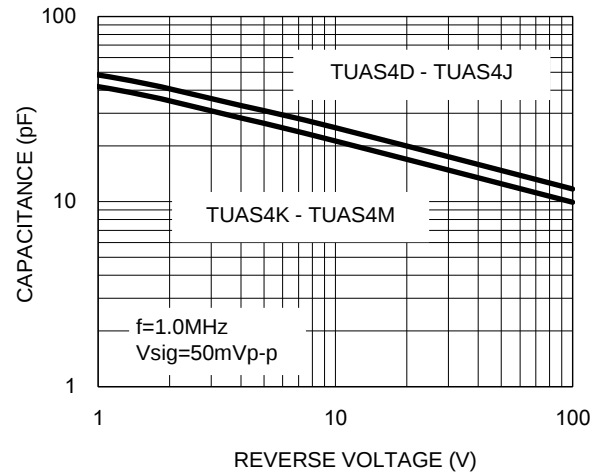


Fig.3 Typical Reverse Characteristics

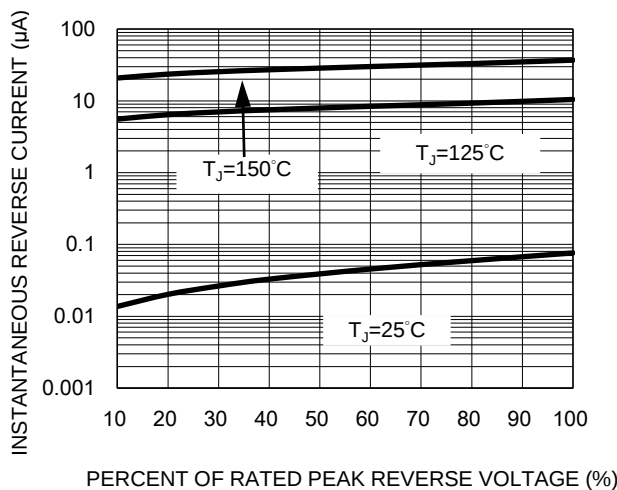


Fig.4 Typical Forward Characteristics

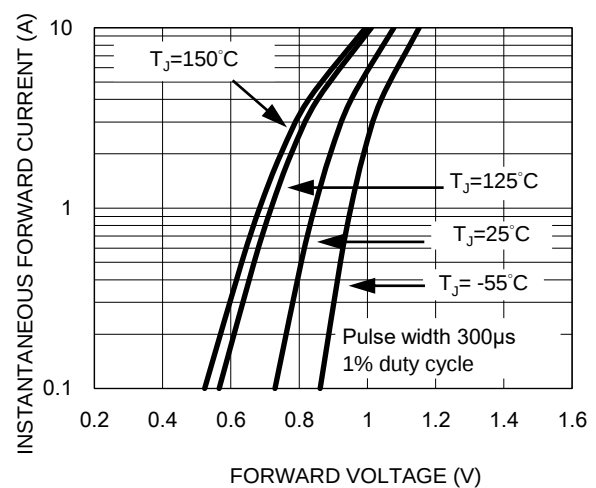
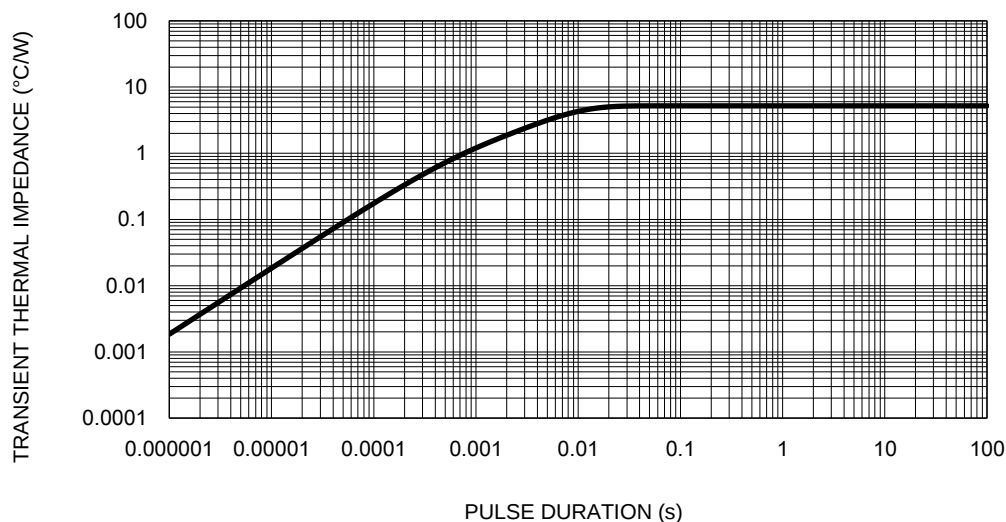
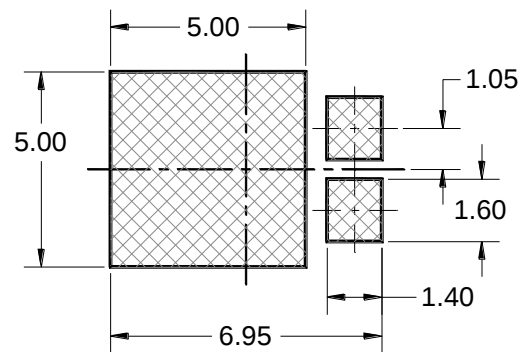
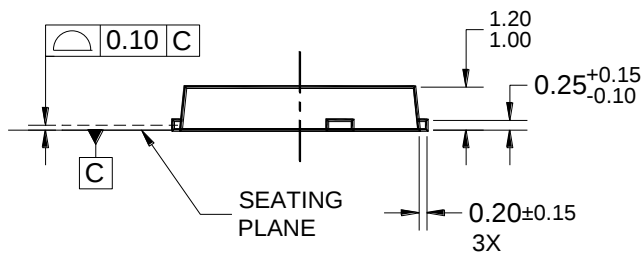
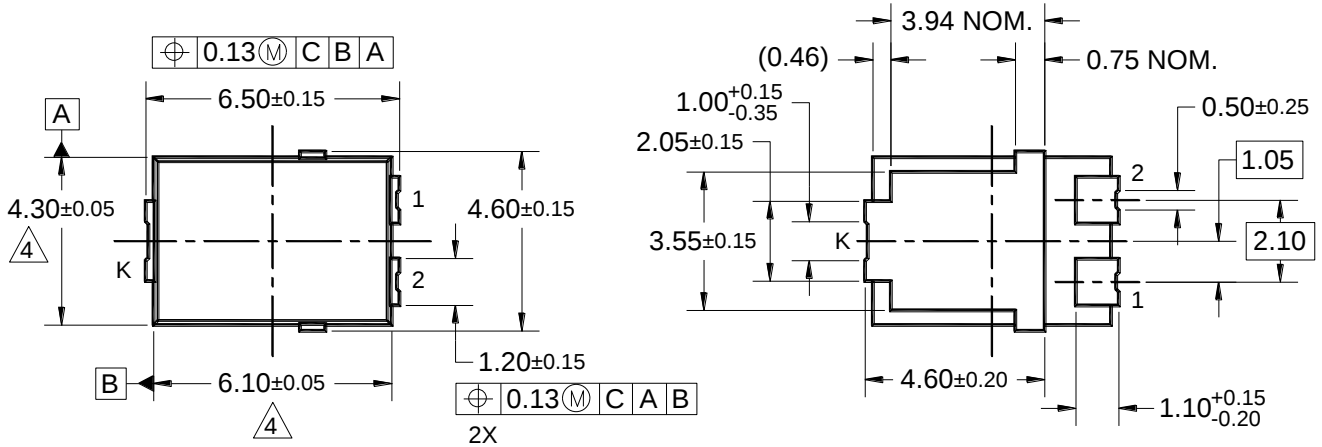


Fig.5 Typical Transient Thermal Impedance

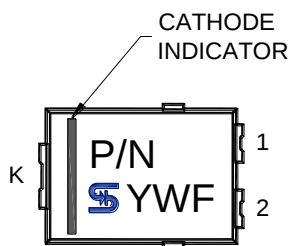


PACKAGE OUTLINE DIMENSIONS

TO-277A (SMPC4.6U)



SUGGESTED PAD LAYOUT



MARKING DIAGRAM

P/N = MARKING CODE
YWF = 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 TO-277 ISSUE A.

4 MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD LASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SMPC4.6U-031 REV A.

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