

## 4A, 100V - 200V Ultra Fast Surface Mount Rectifier

### FEATURES

- AEC-Q101 qualified
- Planar technology
- Low power loss, high efficiency
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

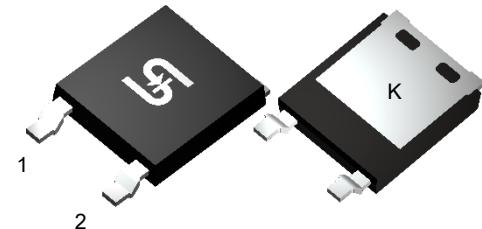
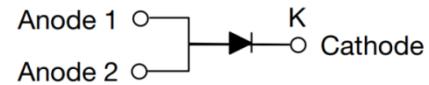
### APPLICATIONS

- High frequency switching
- DC/DC
- Snubber

### MECHANICAL DATA

- Case: ThinDPAK
- 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: 0.192g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I <sub>F</sub>	4	A
V <sub>RRM</sub>	100 - 200	V
I <sub>FSM</sub>	130	A
T <sub>J MAX</sub>	175	°C
Package	ThinDPAK	
Configuration	Single die	


**ThinDPAK**


ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C unless otherwise noted)				
PARAMETER	SYMBOL	PUAD4BH	PUAD4DH	UNIT
Marking code on the device		UAD4B	UAD4D	
Repetitive peak reverse voltage	V <sub>RRM</sub>	100	200	V
Reverse voltage, total rms value	V <sub>R(RMS)</sub>	70	140	V
Forward current	I <sub>F</sub>	4		A
Surge peak forward current single half sine-wave superimposed on rated load	t = 8.3ms	I <sub>FSM</sub>	130	A
	t = 1.0ms		270	
Junction temperature	T <sub>J</sub>	-55 to +175		°C
Storage temperature	T <sub>STG</sub>	-55 to +175		°C

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	3.5	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	11.8	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	2.0	°C/W

**Thermal Performance Note:** Mounted on heat sink with 2" x 3" x 0.25" Al-Plate

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>	$I_F = 2A, T_J = 25^\circ C$	$V_F$	0.80	-	V
	$I_F = 2A, T_J = 125^\circ C$		0.64	-	V
	$I_F = 4A, T_J = 25^\circ C$		0.85	0.92	V
	$I_F = 4A, T_J = 125^\circ C$		0.71	-	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ C$	$I_R$	-	2	µA
	$T_J = 125^\circ C$		2	-	µA
Junction capacitance	1MHz, $V_R = 4.0V$	$C_J$	77	-	pF
Reverse recovery time	$I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A$	$t_{rr}$	-	25	ns
	$I_F = 1.0A, dI/dt = 50A/\mu s, V_R = 30V$		25	-	
Reverse recovery current	$I_F = 4.0A, dI/dt = 200A/\mu s, V_R = 100V$	$I_{RM}$	3	-	A
Reverse recovery charge		$Q_{rr}$	42	-	nC
Reverse recovery time		$t_{rr}$	20	-	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
PUAD4xH	ThinDPAK	4,500 / Tape & Reel

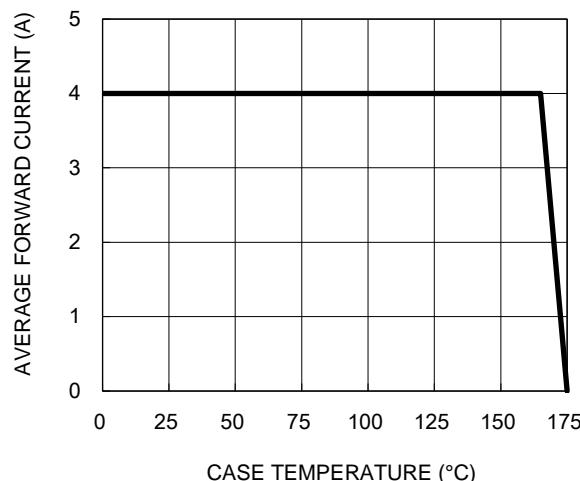
**Notes:**

1. "x" defines voltage from 100V(PUAD4BH) to 200V(PUAD4DH)

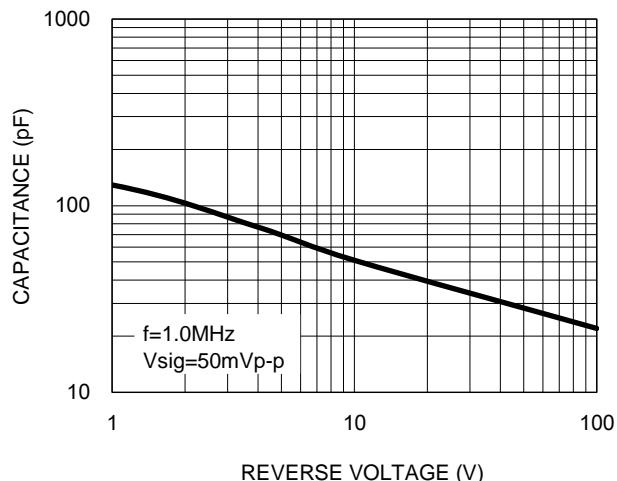
## CHARACTERISTICS CURVES

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

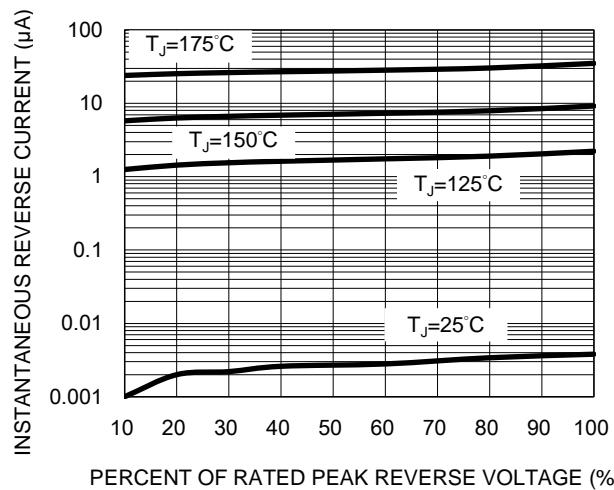
**Fig.1 Forward Current Derating Curve**



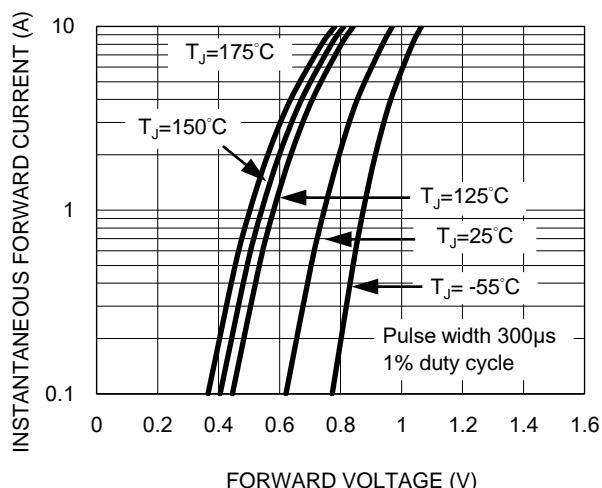
**Fig.2 Typical Junction Capacitance**



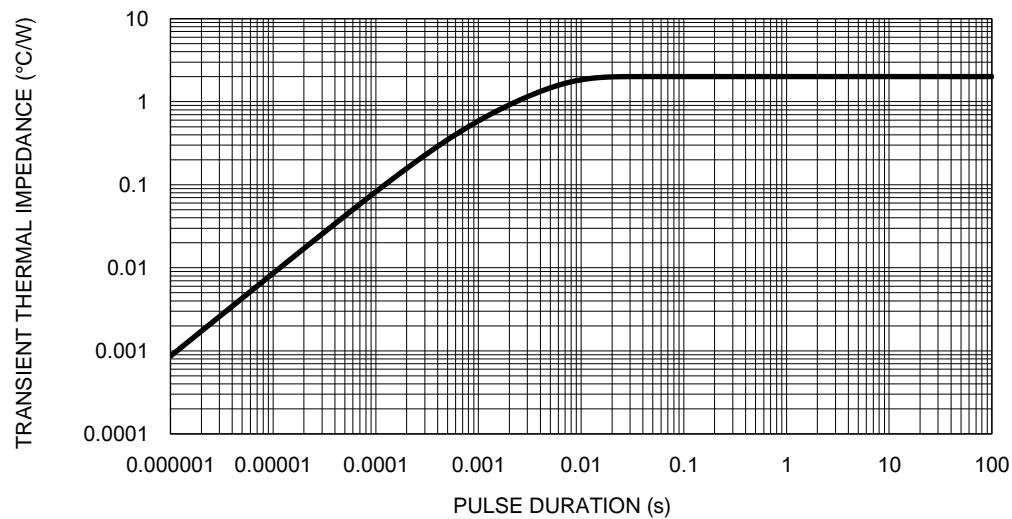
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

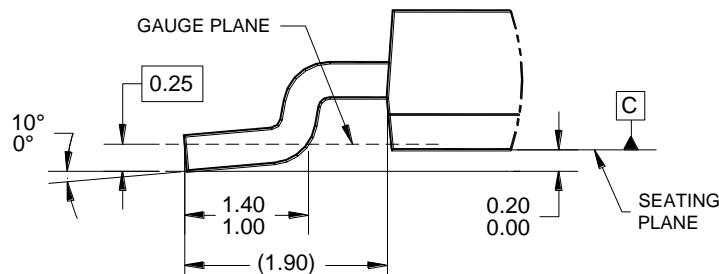
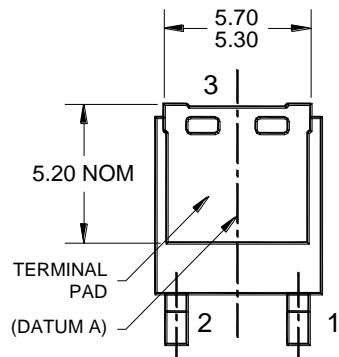
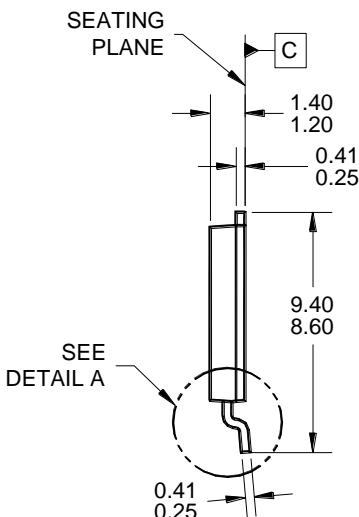
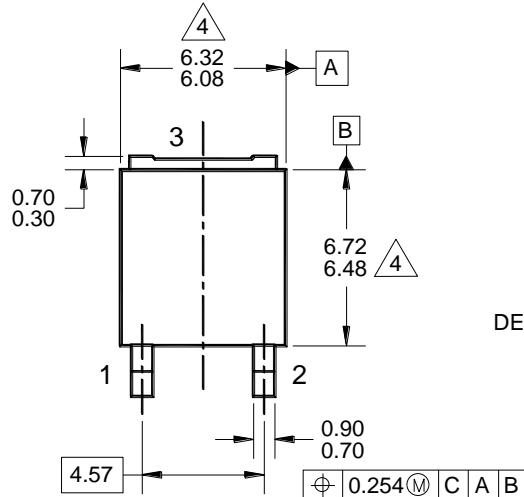


**Fig.5 Typical Transient Thermal Impedance**

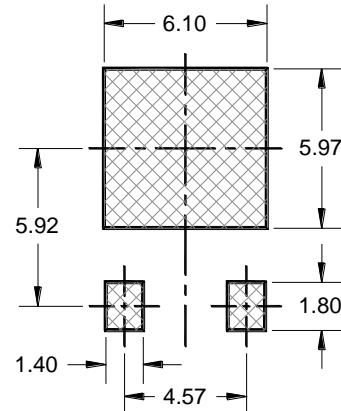


## PACKAGE OUTLINE DIMENSIONS

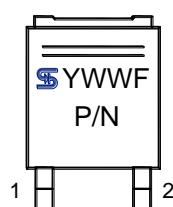
## ThinDPAK



DETAIL A, ROTATED -90°  
(SCALE 4:1)



## SUGGESTED PAD LAYOUT



## MARKING DIAGRAM

YWW = DATE CODE  
F = FACTORY CODE  
P/N = MARKING CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING  
PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE:  
JEDEC TO-252, VARIATION AE, ISSUE F.

 MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSION, OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-TDPAK-065 REV A.

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