

## 8A, 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

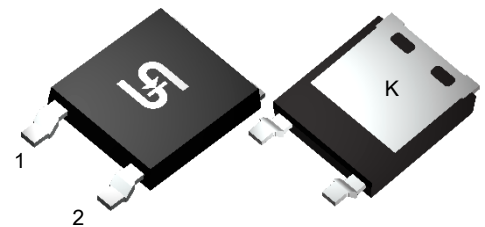
### APPLICATIONS

- High frequency switching
- DC/DC
- Snubber

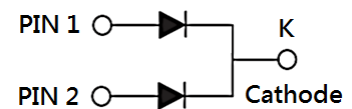
### MECHANICAL DATA

- 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: As marked
- Weight: 0.193g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	8	A
$V_{RRM}$	100 - 200	V
$I_{FSM}$	130	A
$T_J \text{ MAX}$	175	°C
Package	ThinDPAK	
Configuration	Common cathode	



ThinDPAK



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C unless otherwise noted)					
PARAMETER		SYMBOL	PUAD8BCH	PUAD8DCH	UNIT
Marking code on the device			UAD8BC	UAD8DC	
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 per device		I <sub>F</sub>	8		A
Surge peak forward current single half sine-wave superimposed on rated load per diode	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** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F = 2\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.80		V
	$I_F = 2\text{A}, T_J = 125^\circ\text{C}$		0.64		V
	$I_F = 4\text{A}, T_J = 25^\circ\text{C}$		0.86	0.92	V
	$I_F = 4\text{A}, T_J = 125^\circ\text{C}$		0.71	-	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	2	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		2	-	$\mu\text{A}$
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	$C_J$	78	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	$t_{rr}$	-	25	ns
	$I_F = 1.0\text{A}, di/dt = 50\text{A}/\mu\text{s}, V_R = 30\text{V}$		24	-	
Reverse recovery current	$I_F = 4.0\text{A}, di/dt = 200\text{A}/\mu\text{s}, V_R = 100\text{V}$	$I_{RM}$	2.7	-	A
Reverse recovery charge		$Q_{rr}$	37	-	nC
Reverse recovery time		$t_{rr}$	19	-	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
PUAD8xCH	ThinDPAK	4,500 / Tape & Reel

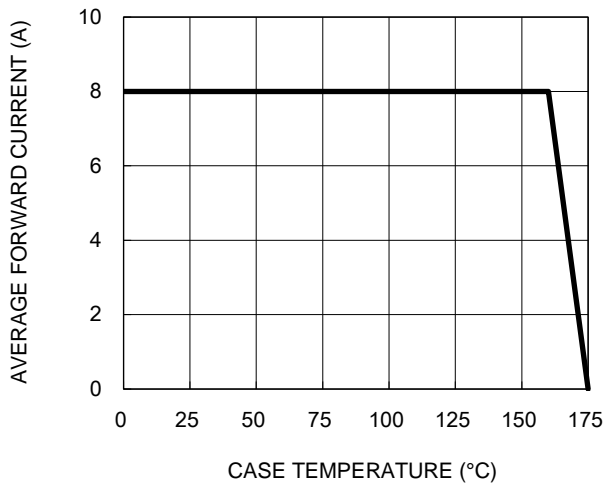
**Notes:**

1. "x" defines voltage from 100V(PUAD8BCH) to 200V(PUAD8DCH)

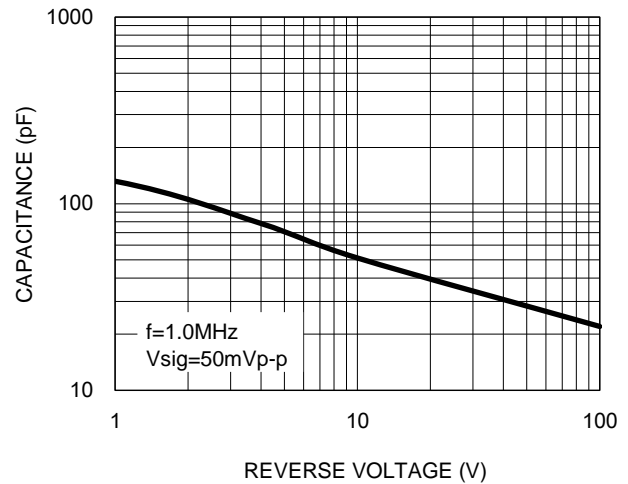
## CHARACTERISTICS CURVES

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

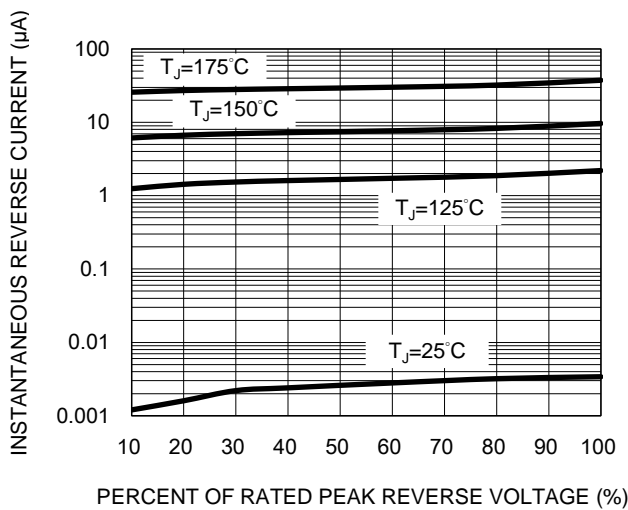
**Fig.1 Forward Current Derating Curve**



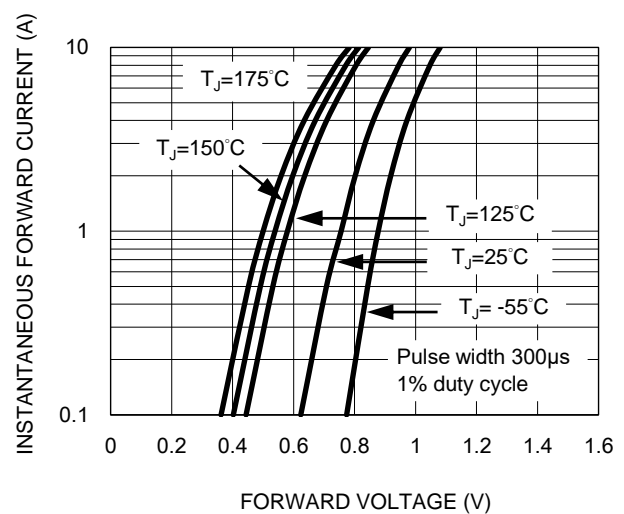
**Fig.2 Typical Junction Capacitance**



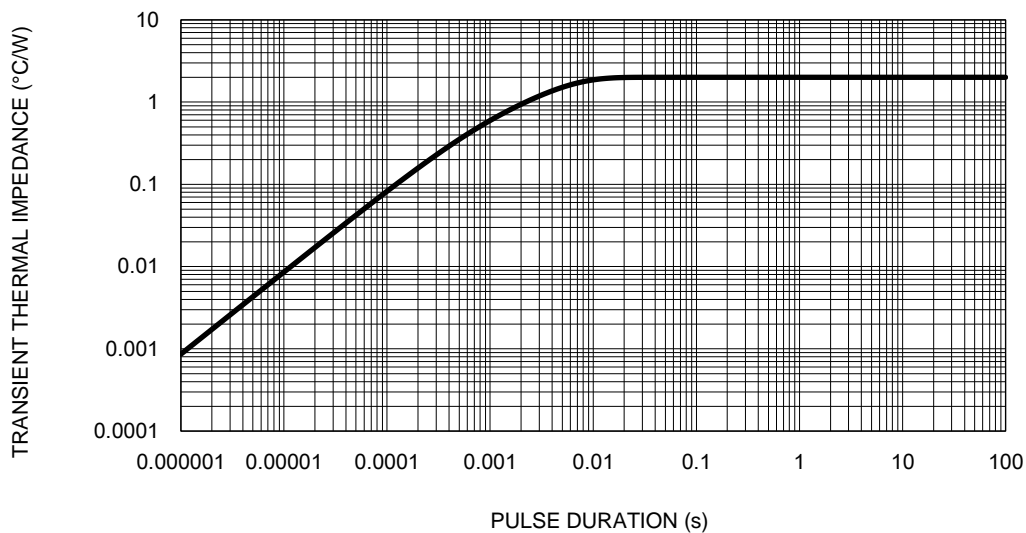
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

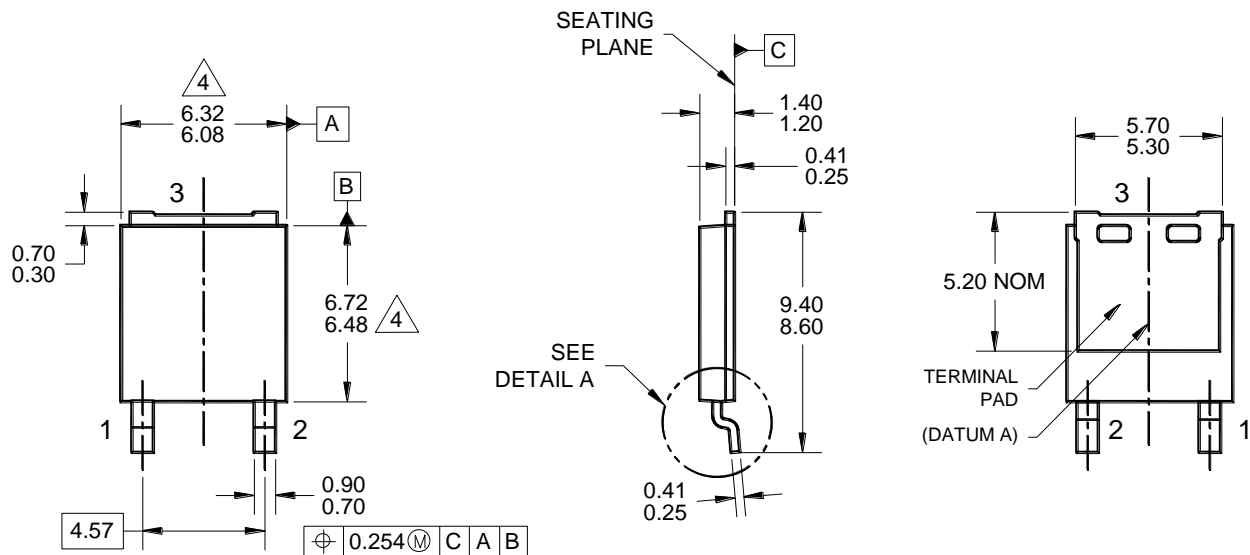


**Fig.5 Typical Transient Thermal Impedance**



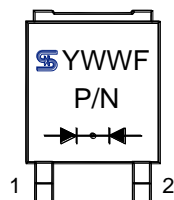
# PACKAGE OUTLINE DIMENSIONS

## 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.
4. 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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