

## 10A, 100V Schottky Barrier Surface Mount Rectifier

### FEATURES

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

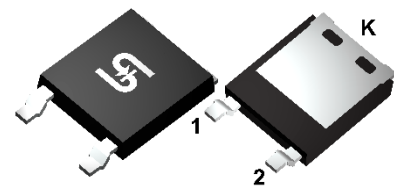
### APPLICATIONS

- Low voltage, high frequency, inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

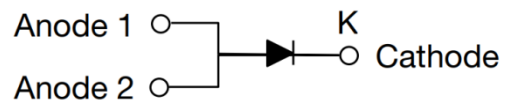
### MECHANICAL DATA

- 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: 0.195g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	10	A
$V_{RRM}$	100	V
$I_{FSM}$	200	A
$T_{J\ MAX}$	150	°C
Package	ThinDPAK	
Configuration	Single die	



ThinDPAK



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

PARAMETER	SYMBOL	MBRAD10100H	UNIT
Marking code on the device		10100	
Repetitive peak reverse voltage	$V_{RRM}$	100	V
Reverse voltage, total rms value	$V_{R(RMS)}$	70	V
Forward current	$I_F$	10	A
Surge peak forward current single half sine-wave superimposed on rated load	$t = 8.3\text{ms}$	200	A
	$t = 1.0\text{ms}$	480	A
Junction temperature	$T_J$	-55 to +150	°C
Storage temperature	$T_{STG}$	-55 to +150	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance <sup>(1)</sup>	$R_{\theta JL}$	2.5	°C/W
Junction-to-ambient thermal resistance <sup>(2)</sup>	$R_{\theta JA}$	13	°C/W
Junction-to-case thermal resistance <sup>(2)</sup>	$R_{\theta JC}$	2.9	°C/W

**Notes:**

1. With ideal heat sink
2. Units mounted on 2" x 3" x 0.25" Al-plate

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.71	-	V
	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$		0.79	0.83	V
	$I_F = 5\text{A}, T_J = 125^\circ\text{C}$		0.58	-	V
	$I_F = 10\text{A}, T_J = 125^\circ\text{C}$		0.66	0.69	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	10	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	2	mA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	$C_J$	260	-	pF

**Notes:**

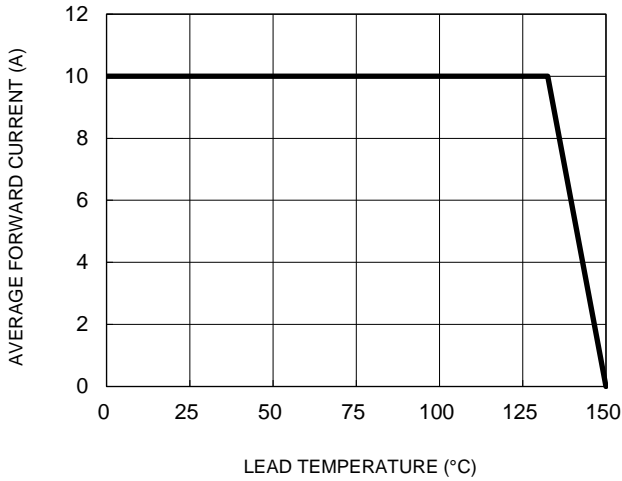
1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
MBRAD10100H	ThinDPAK	4,500 / Tape & Reel

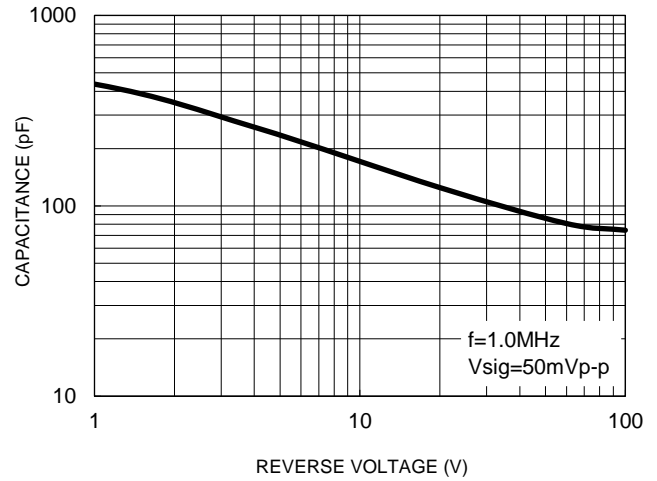
**CHARACTERISTICS CURVES**

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

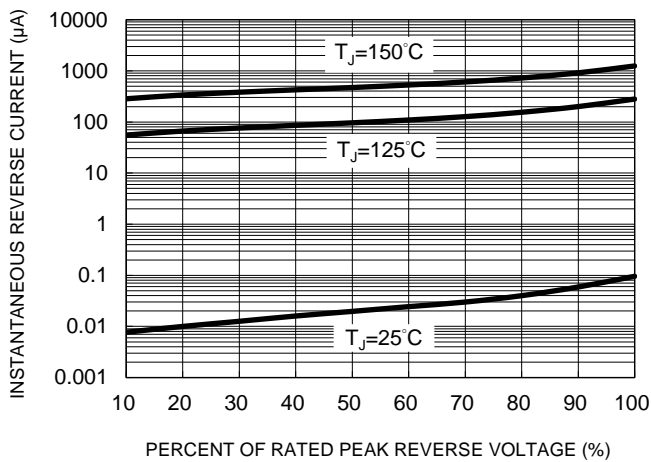
**Fig.1 Forward Current Derating Curve**



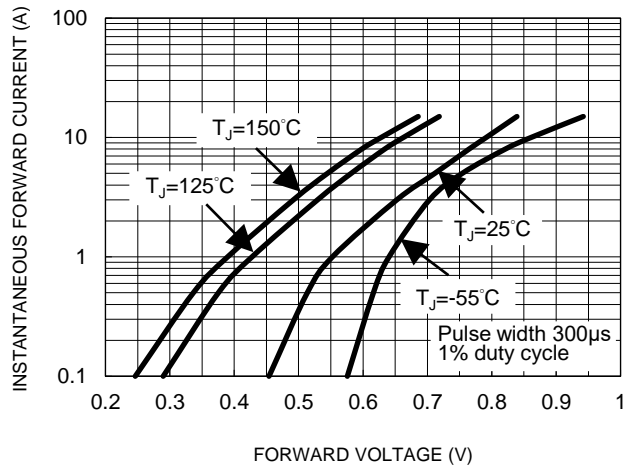
**Fig.2 Typical Junction Capacitance**



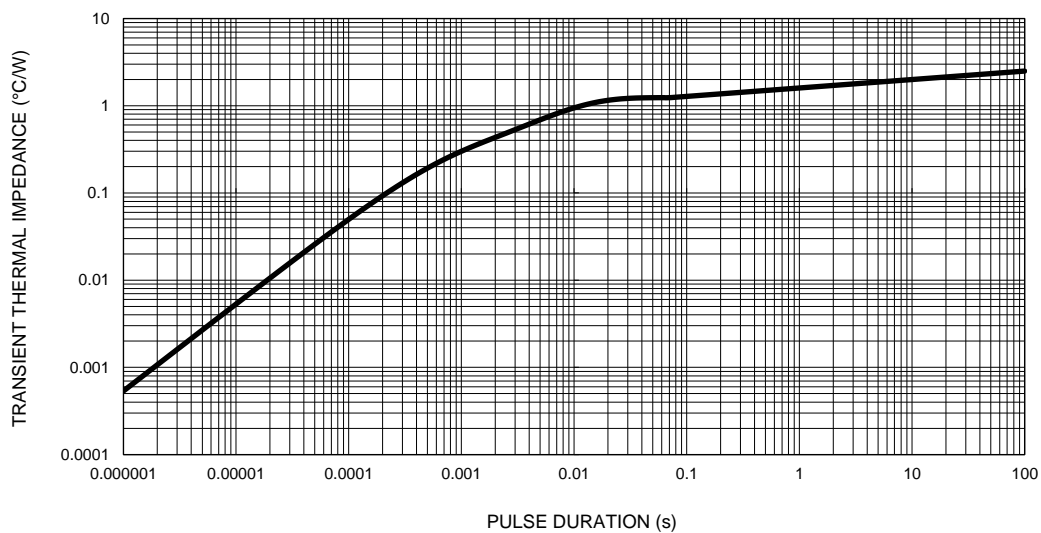
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

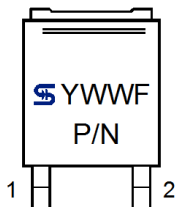
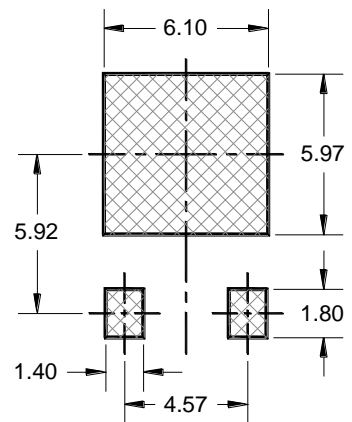
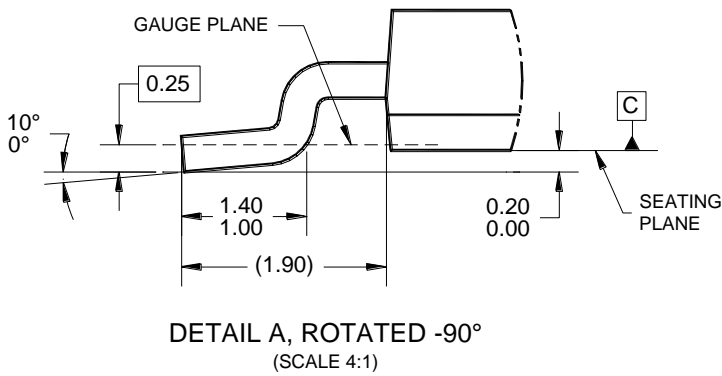
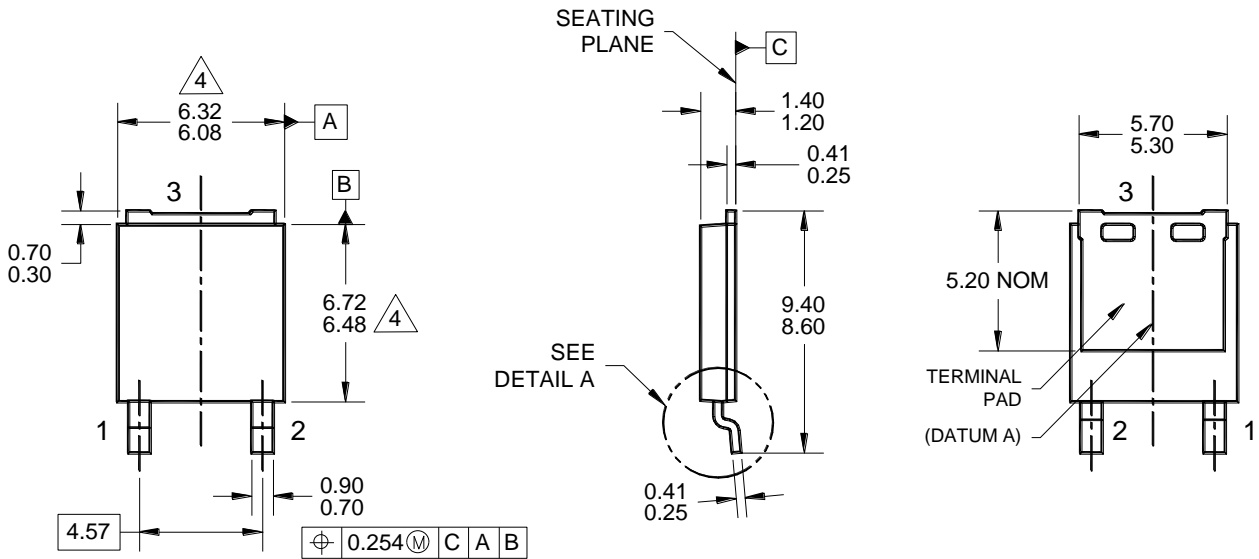


**Fig.5 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE DIMENSIONS**

**ThinDPAK**



**MARKING DIAGRAM**

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

**SUGGESTED PAD LAYOUT**

**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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