

## 6A, 600V - 1000V Standard Bridge Rectifier

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- UL Recognized File # E-326854
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

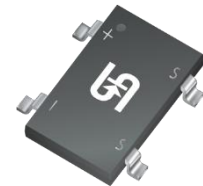
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application

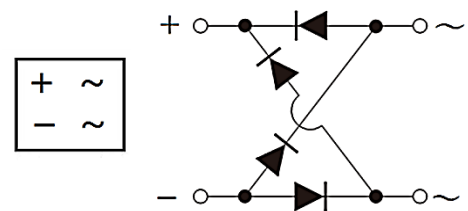
### MECHANICAL DATA

- Case: TBS
- Molding compound meets UL 94V-0 flammability rating
- Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: As marked
- Weight: 0.220g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	6	A
$V_{RRM}$	600 - 1000	V
$I_{FSM}$	150	A
$T_{JMAX}$	150	°C
Package	TBS	
Configuration	Quad	



TBS



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	TBS606	TBS608	TBS610	UNIT
Marking code on the device		TBS606	TBS608	TBS610	
Repetitive peak reverse voltage	$V_{RRM}$	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	560	700	V
Forward current	$I_F$	6			A
Surge peak forward current single half sine-wave superimposed on rated load	$t = 8.3\text{ms}$	150			A
	$t = 1.0\text{ms}$	400			A
Rating for fusing ( $t < 8.3\text{ms}$ )	$I^2t$	93.37			$\text{A}^2\text{s}$
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	$R_{\theta JL}$	12	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	47	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	13	°C/W

**Thermal Performance Note:** Units mounted on PCB (16mm x 16mm Cu pad test board)

<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 per diode <sup>(1)</sup>	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.90	-	V
	$I_F = 6\text{A}, T_J = 25^\circ\text{C}$		0.96	1.00	V
	$I_F = 3\text{A}, T_J = 125^\circ\text{C}$		0.79	-	V
	$I_F = 6\text{A}, T_J = 125^\circ\text{C}$		0.86	0.96	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	2	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	200	$\mu\text{A}$
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	$C_J$	51	-	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<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
TBS6x	TBS	1,800 / Tape & Reel

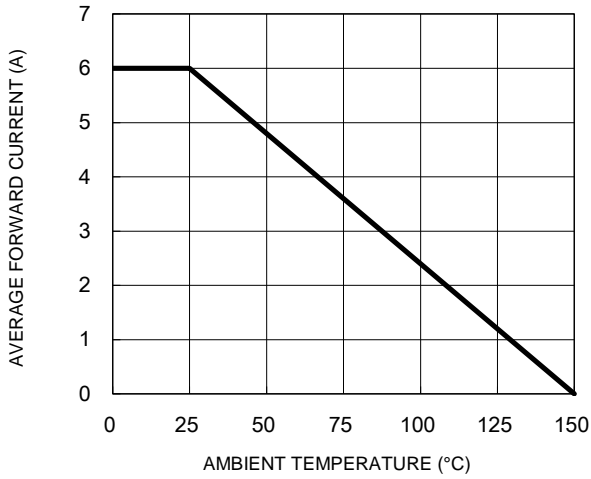
**Notes:**

1. "x" defines voltage from 600V(TBS606) to 1000V(TBS610)

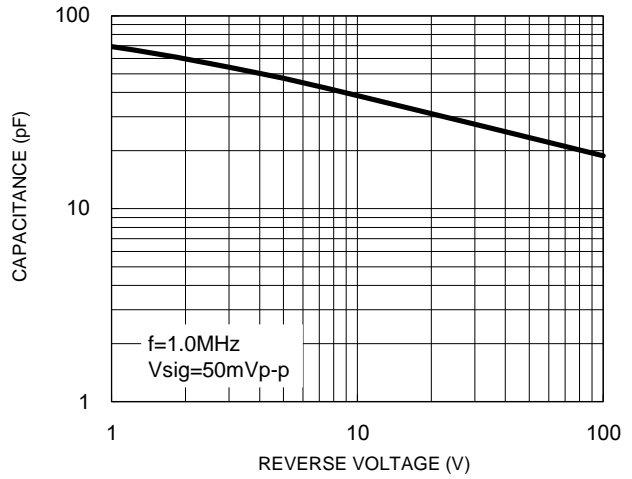
**CHARACTERISTICS CURVES**

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

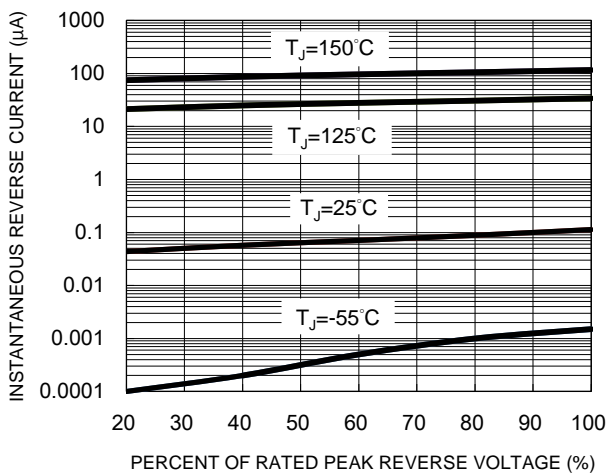
**Fig.1 Forward Current Derating Curve**



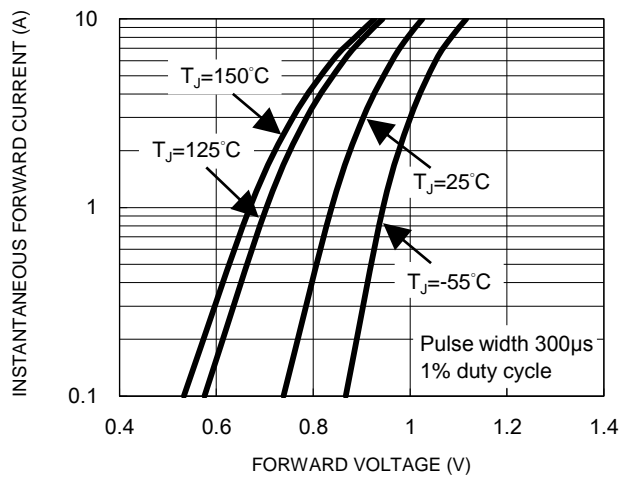
**Fig.2 Typical Junction Capacitance**



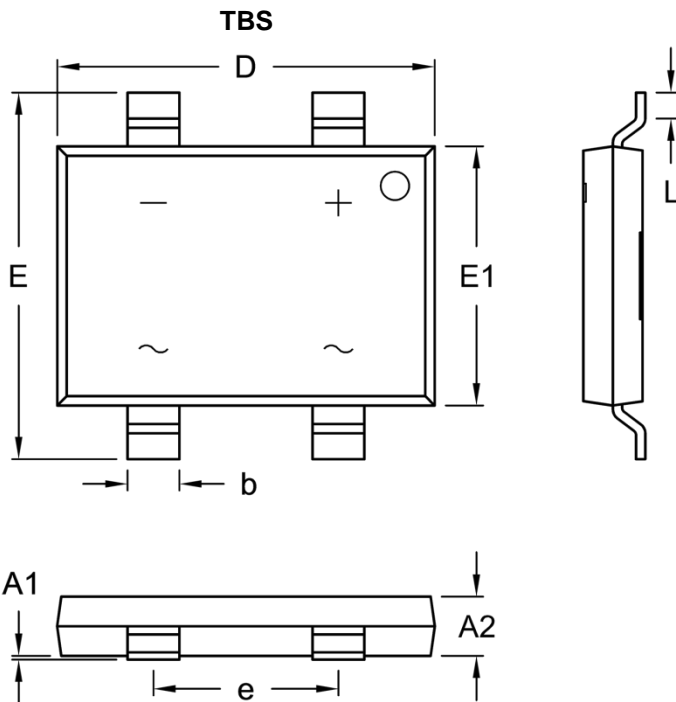
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

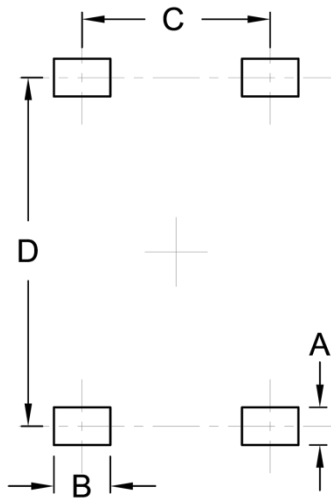


**PACKAGE OUTLINE DIMENSIONS**



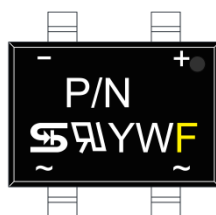
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A1	0.00	0.15	0.000	0.006
A2	1.40	1.80	0.055	0.071
b	1.30	1.50	0.051	0.059
D	10.00	10.40	0.394	0.409
E	9.70	10.10	0.382	0.398
E1	6.80	7.20	0.268	0.283
e	4.90	5.10	0.193	0.201
L	0.50	1.10	0.020	0.043

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.00	0.039
B	1.50	0.059
C	5.00	0.197
D	9.25	0.364

**MARKING DIAGRAM**



P/N = Marking Code  
 YW = Date Code  
 F = Factory Code