

## 6A, 1000V Fast Recovery Bridge Rectifier

### FEATURES

- Ideal for automated placement
- High surge current capability
- UL Recognized File # E-326854
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

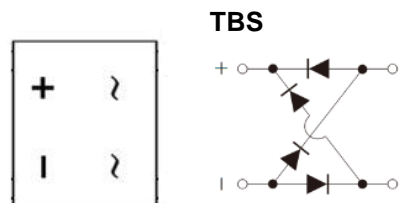
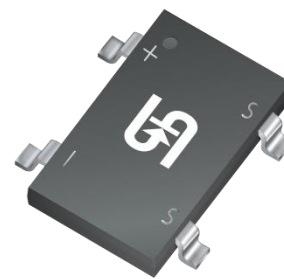
### APPLICATIONS

- Switching mode power supply
- AC to DC

### 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: 0.360g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	6	A
$V_{RRM}$	1000	V
$I_{FSM}$	140	A
$T_{JMAX}$	150	°C
Package	TBS	
Configuration	Quad	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	RTBS60M	UNIT
Marking code on the device		RT60M	
Repetitive peak reverse voltage	$V_{RRM}$	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	700	V
Forward current	$I_F$	6	A
Surge peak forward current single half sine-wave superimposed on rated load per diode	$t = 8.3\text{ms}$	140	A
	$t = 1.0\text{ms}$	480	A
Rating of fusing ( $t < 8.3\text{ms}$ )	$I^2t$	81	$\text{A}^2\text{s}$
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	$R_{\theta JL}$	6.2	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	37	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	3.5	°C/W

**Thermal Performance Note:** Units mounted on PCB (15mm x 15mm 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>	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.99	1.3	V
	$I_F = 6\text{A}, T_J = 25^\circ\text{C}$		1.08	-	V
	$I_F = 3\text{A}, T_J = 125^\circ\text{C}$		0.84	-	V
	$I_F = 6\text{A}, T_J = 125^\circ\text{C}$		0.95	-	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		45	-	$\mu\text{A}$
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	$C_J$	42	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	500	ns

**Notes:**

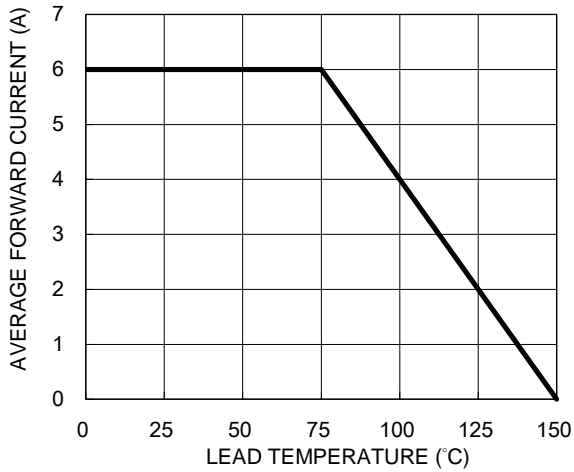
1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
RTBS60M	TBS	1,800 / Tape & Reel

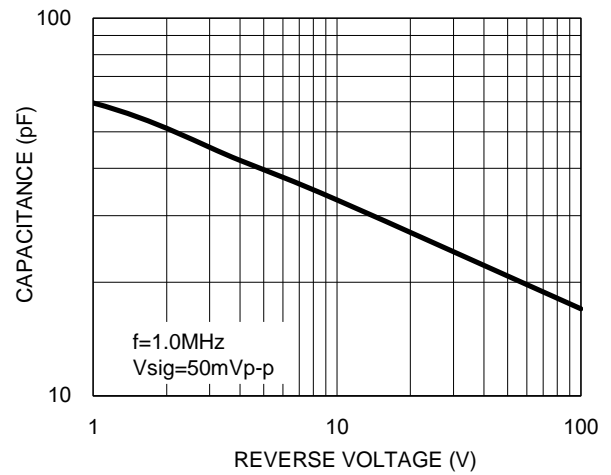
**CHARACTERISTICS CURVES**

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

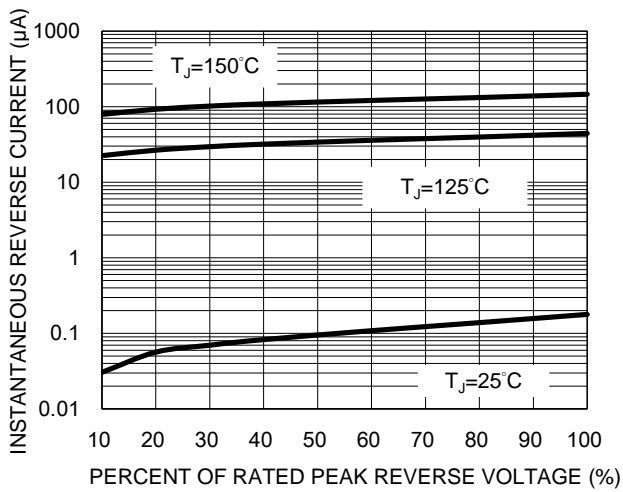
**Fig.1 Forward Current Derating Curve**



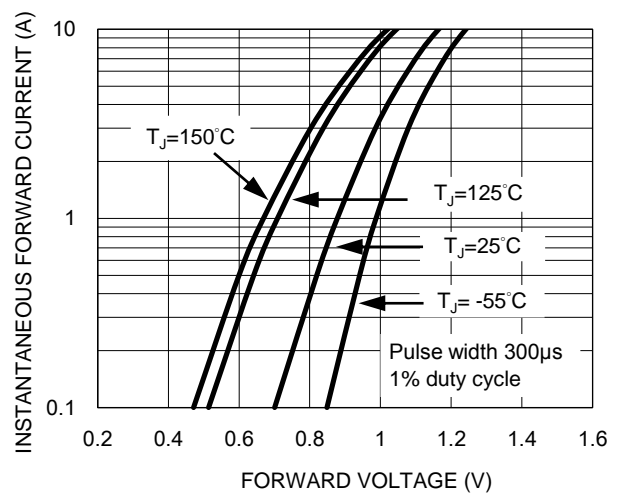
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**

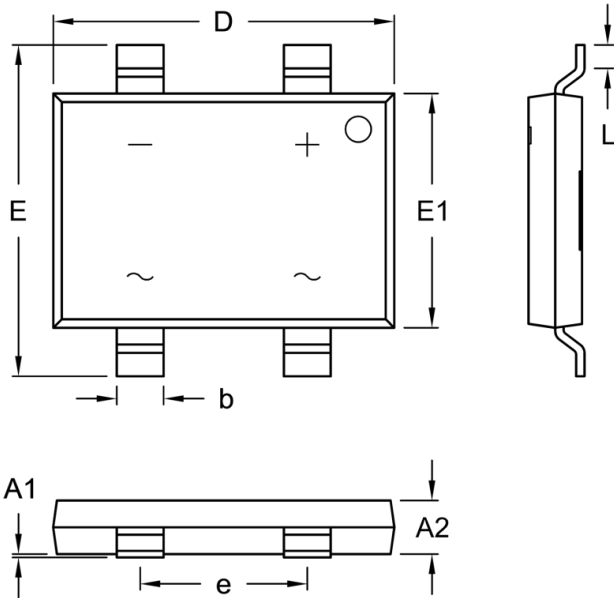


**Fig.4 Typical Forward Characteristics**



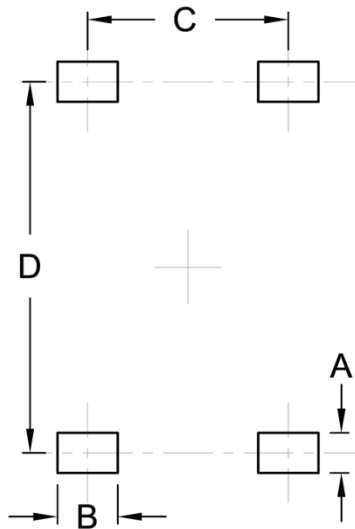
**PACKAGE OUTLINE DIMENSIONS**

TBS



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

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

**MARKING DIAGRAM**



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

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