

4A, 1000V Fast Recovery Glass Passivated Bridge Rectifier

FEATURES

- Glass passivated 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

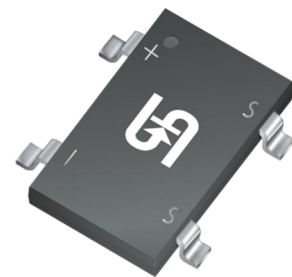
APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

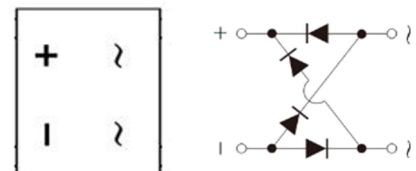
MECHANICAL DATA

- 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: 0.350 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	4.0	A
V_{RRM}	1000	V
I_{FSM}	110	A
$T_{J\ MAX}$	150	°C
Package	TBS	
Configuration	Quad	



TBS



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	RTBS40M	UNIT
Marking code on the device			RT40M	
Repetitive peak reverse voltage		V_{RRM}	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	700	V
Forward current		I_F	4	A
Surge peak forward current single half sine-wave superimposed on rated load per diode	8.3 ms at $T_A = 25^\circ\text{C}$	I_{FSM}	110	A
	1.0 ms at $T_A = 25^\circ\text{C}$		290	A
I^2t value (of a surge on-state current) at 8.3ms		I^2t	50	A^2s
Junction temperature		T_J	-55 to +150	°C
Storage temperature		T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	17	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	58	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	15	°C/W

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

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 2.0\text{ A}, T_J = 25^\circ\text{C}$	V_F	1.01	-	V
	$I_F = 4.0\text{ A}, T_J = 25^\circ\text{C}$		1.10	1.30	V
	$I_F = 2.0\text{ A}, T_J = 125^\circ\text{C}$		0.85	-	V
	$I_F = 4.0\text{ A}, T_J = 125^\circ\text{C}$		0.95	1.17	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$T_J = 125^\circ\text{C}$		-	200	μA
Junction capacitance per diode	1 MHz, $V_R = 4.0\text{V}$	C_J	32	-	pF
Reverse recovery time per diode	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	t_{rr}	-	300	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
RTBS40M M2G	TBS	1,800 / 13" Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

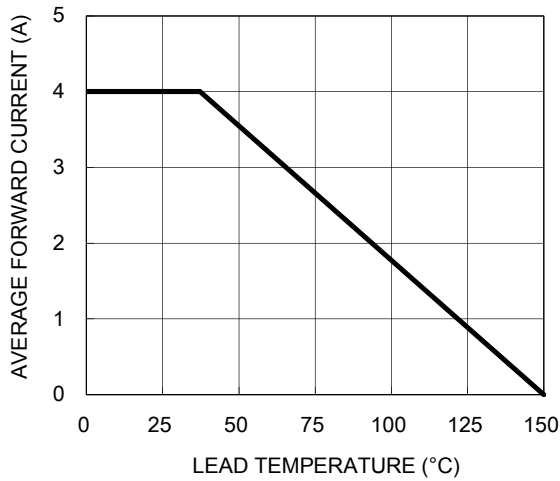


Fig.2 Typical Junction Capacitance

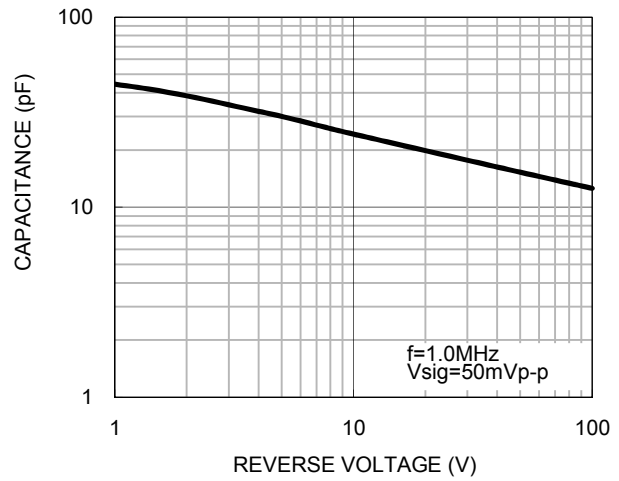


Fig.3 Typical Reverse Characteristics

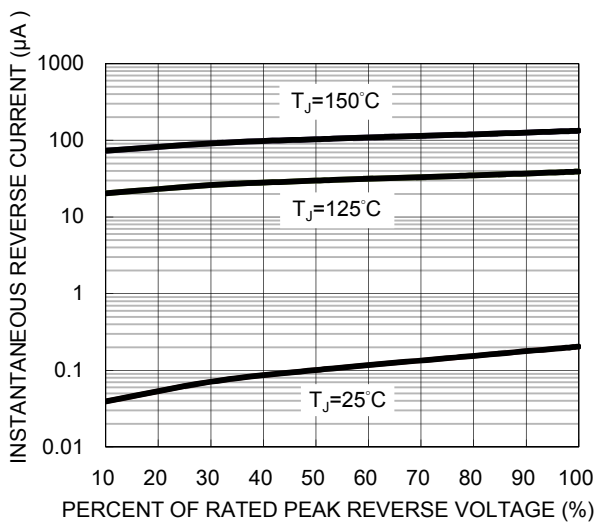
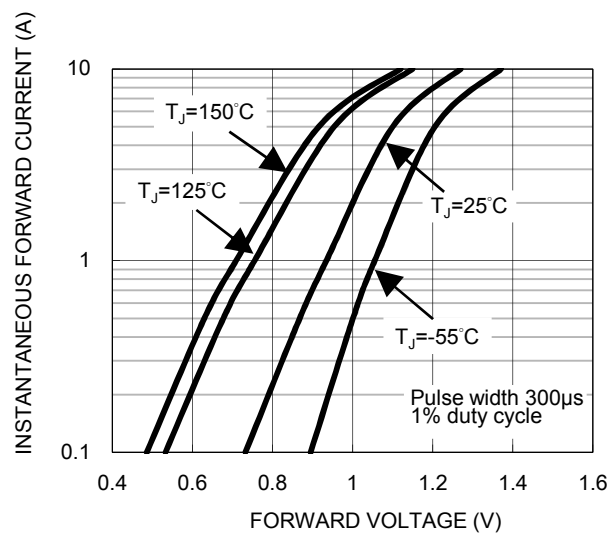
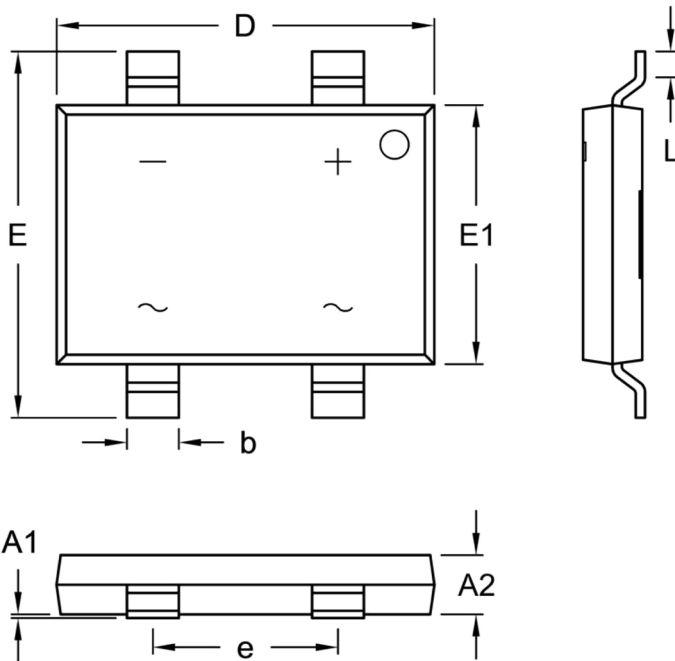


Fig.4 Typical Forward Characteristics



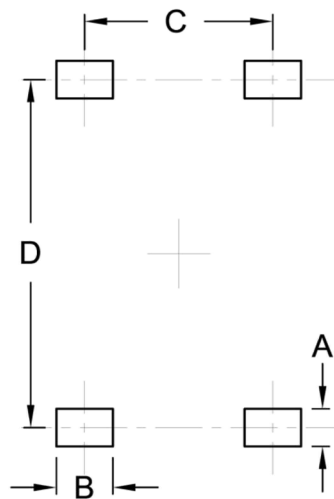
PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

TBS



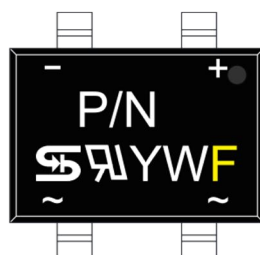
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A1	0.00	0.15	0.000	0.006
A2	1.40	1.80	0.055	0.071
b	1.30	1.50	0.051	0.059
D	10.00	10.40	0.394	0.409
E	9.70	10.10	0.382	0.398
E1	6.80	7.20	0.268	0.283
e	4.90	5.10	0.193	0.201
L	0.50	1.10	0.020	0.043

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

MARKING DIAGRAM



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

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