20A, 400V - 1000V Standard Bridge Rectifier

FEATURES

- Ideal for printed circuit board
- High surge current capability
- Ultra low leakage reverse current
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

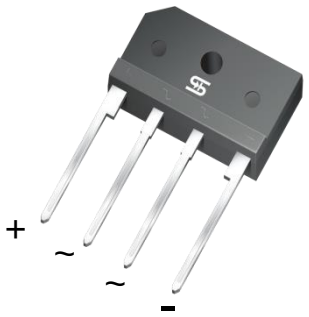
- On board charger
- AC to DC

MECHANICAL DATA

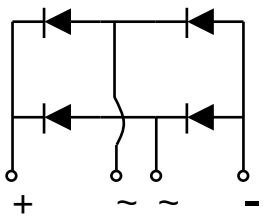
- Case: TS4K
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: As marked
- Mounting torque: 0.78 N·m maximum
- Weight: 4.12g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	20	A
V_{RRM}	400 - 1000	V
I_{FSM}	220	A
$T_{J\ MAX}$	150	°C
Package	TS4K	
Circuit Configuration	In-line	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TS4K



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)							
PARAMETER		**SYMBOL**	**TS20K40 -T**	**TS20K60 -T**	**TS20K80 -T**	**TS20K100 -T**	**UNIT**
Marking code on the device			TS20K40	TS20K60	TS20K80	TS20K100	
Repetitive peak reverse voltage		V_{RRM}	400	600	800	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	280	420	560	700	V
Forward current		I_F	20				A
Surge peak forward current, single half sine-wave superimposed on rated load	t = 8.3ms	I_{FSM}	220				A
	t = 1.0ms		580				
Rating of fusing (t<8.3ms)		I^2t	200				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	$R_{\Theta JL}$	1.3	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	6.8	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	1.2	°C/W

Thermal Performance Note: Mounted on heat sink with 4” x 6” x 0.25” Al-Plate

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	I_F = 10A, T_J = 25°C	V_F	0.98	1.05	V
	I_F = 10A, T_J = 125°C		0.88	-	V
Reverse current @ rated V_R per diode[2]	T_J = 25°C	I_R	-	5	μA
	T_J =125°C		47	-	μA
Junction capacitance per diode	1MHz, V_R = 4.0V	C_J	65	-	pF

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
TS20Kx-T	TS4K	20 / Tube

Notes:

1. “x” defines voltage from 400V(TS20K40-T) to 1000V(TS20K100-T)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

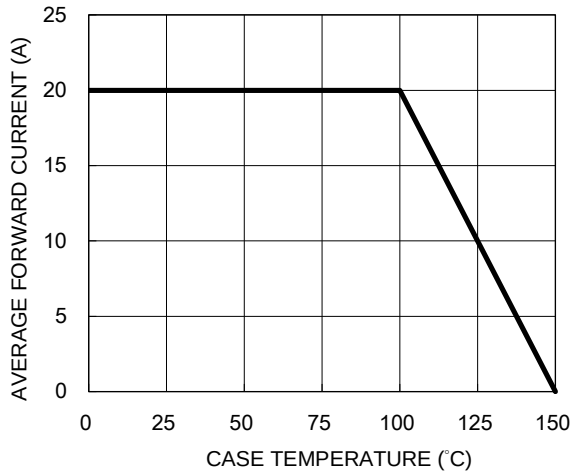


Fig.2 Typical Junction Capacitance

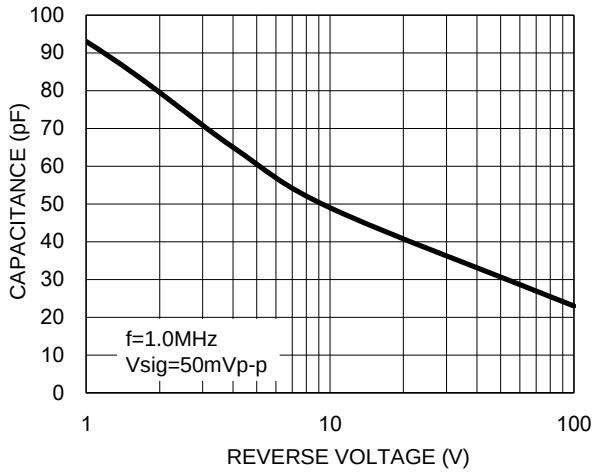


Fig.3 Typical Reverse Characteristics

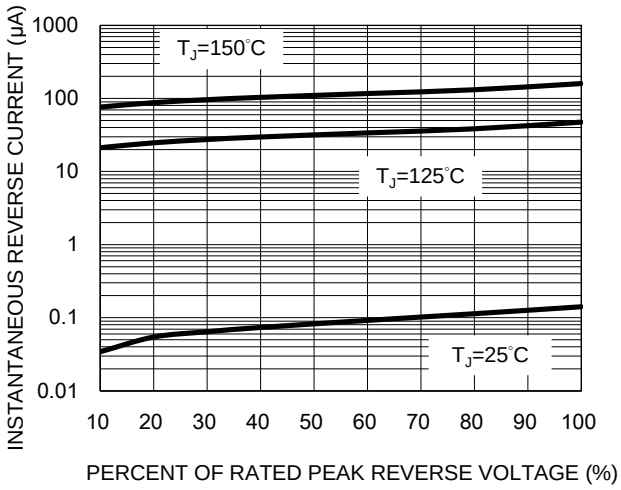
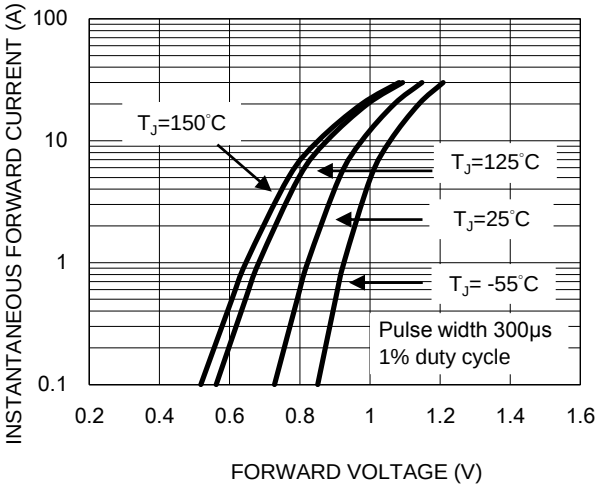
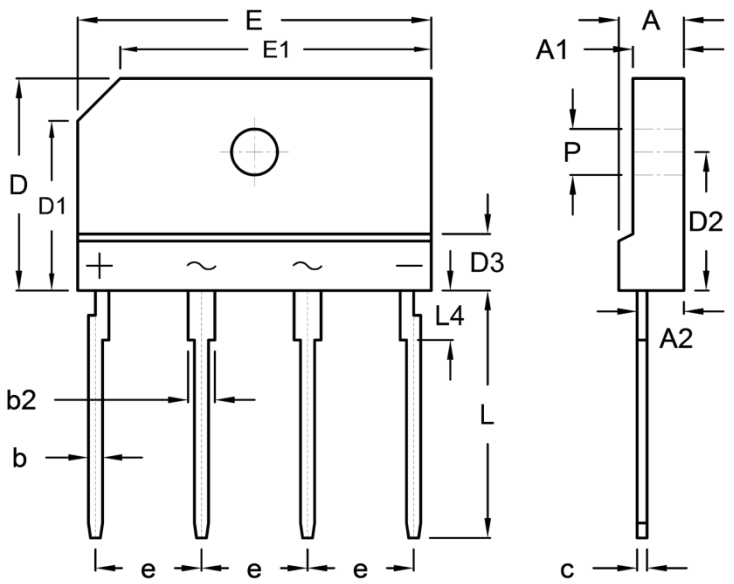


Fig.4 Typical Forward Characteristics



PACKAGE OUTLINE DIMENSIONS

TS4K



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.40	4.80	0.173	0.189
A1	3.40	3.80	0.134	0.150
A2	3.20	3.40	0.126	0.134
b	0.90	1.10	0.035	0.043
b2	1.70	2.10	0.067	0.083
c	0.60	0.80	0.024	0.031
D	14.70	15.30	0.579	0.602
D1	11.50	12.50	0.453	0.492
D2	9.50	10.10	0.374	0.398
D3	3.80	4.20	0.150	0.165
E	24.70	25.30	0.972	0.996
E1	21.50	22.50	0.846	0.886
e	7.30	7.70	0.287	0.303
L	17.00	18.00	0.669	0.709
L4	3.30	3.70	0.130	0.146
P	3.10	3.40	0.122	0.134

MARKING DIAGRAM

P/N = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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