

## 6A, 400V - 1000V Standard Bridge Rectifier

### FEATURES

- Ideal for printed circuit board
- High surge current capability
- Typical  $I_R$  less than  $0.1\mu A$
- UL Recognized File # E-326243
- AEC-Q101 available
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

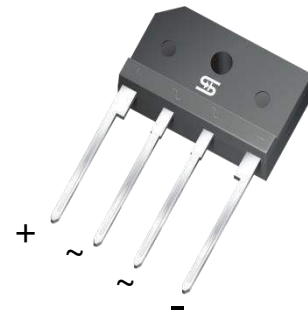
### APPLICATIONS

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

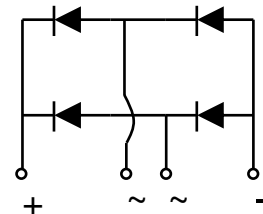
### MECHANICAL DATA

- Case: TS4K
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Mounting torque: 8.17 in-lbs maximum
- Weight: 4.00g (approximately)

| KEY PARAMETERS |            |      |
|----------------|------------|------|
| PARAMETER      | VALUE      | UNIT |
| $I_F$          | 6          | A    |
| $V_{RRM}$      | 400 - 1000 | V    |
| $I_{FSM}$      | 150        | A    |
| $T_{JMAX}$     | 150        | °C   |
| Package        | TS4K       |      |
| Configuration  | Quad       |      |



TS4K



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)                          |                          |              |        |        |         |                  |
|--|--------------------------|--------------|--------|--------|---------|------------------|
| PARAMETER  | SYMBOL                   | TS6K40       | TS6K60 | TS6K80 | TS6K100 | UNIT             |
| Marking code on the device   |                          | TS6K40       | TS6K60 | TS6K80 | TS6K100 |                  |
| 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  | $I_F$                    | 6            |        |        |         | A                |
| Surge peak forward current<br>single half sine-wave<br>superimposed on rated load<br>per diode | $t = 8.3ms$<br>$I_{FSM}$ | 150          |        |        |         | A                |
| Rating of fusing ( $t < 8.3ms$ )   | $I^2t$                   | 93           |        |        |         | A <sup>2</sup> 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-case thermal resistance | $R_{\theta JC}$ | 3          | °C/W        |

| <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>  | $I_F = 3\text{A}, T_J = 25^\circ\text{C}$ | $V_F$         | -          | 1.0        | V             |
|   | $I_F = 6\text{A}, T_J = 25^\circ\text{C}$ |               | -          | 1.1        | V             |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup>                              | $T_J = 25^\circ\text{C}$                  | $I_R$         | -          | 5          | $\mu\text{A}$ |
|   | $T_J = 125^\circ\text{C}$                 |               | -          | 500        | $\mu\text{A}$ |

**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> <sup>(1)(2)</sup> | <b>PACKAGE</b> | <b>PACKING</b> |
| TS6Kx                                  | TS4K           | 20 / Tube      |
| TS6KxH                                 | TS4K           | 20 / Tube      |

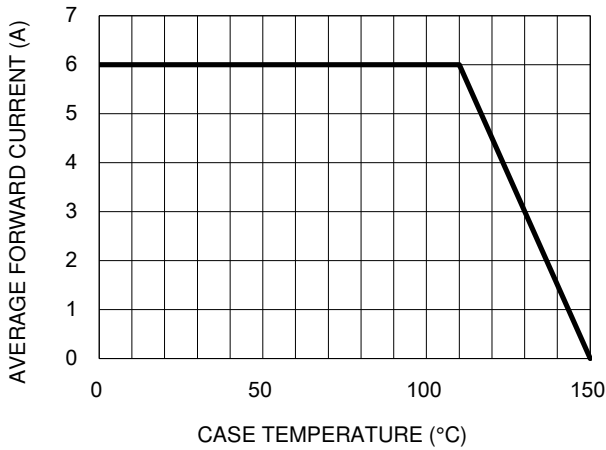
**Notes:**

1. "x" defines voltage from 400V(TS6K40) to 1000V(TS6K100)
2. "H" means AEC-Q101 qualified

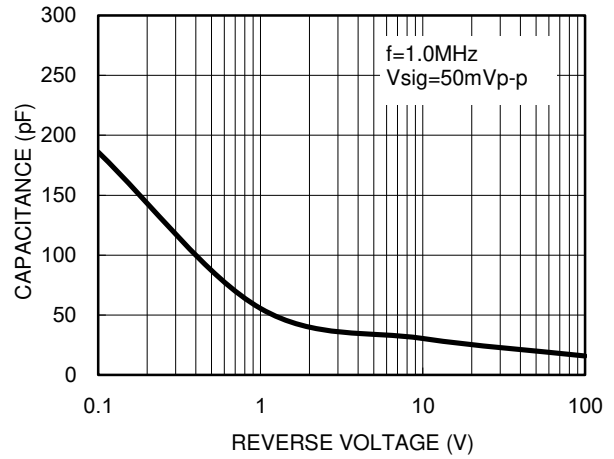
**CHARACTERISTICS CURVES**

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

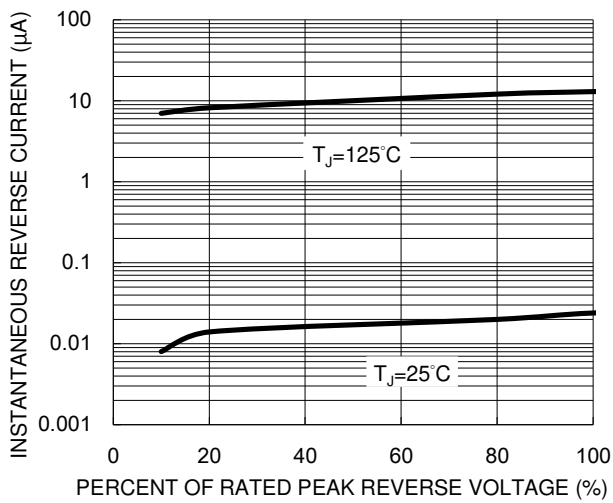
**Fig.1 Forward Current Derating Curve**



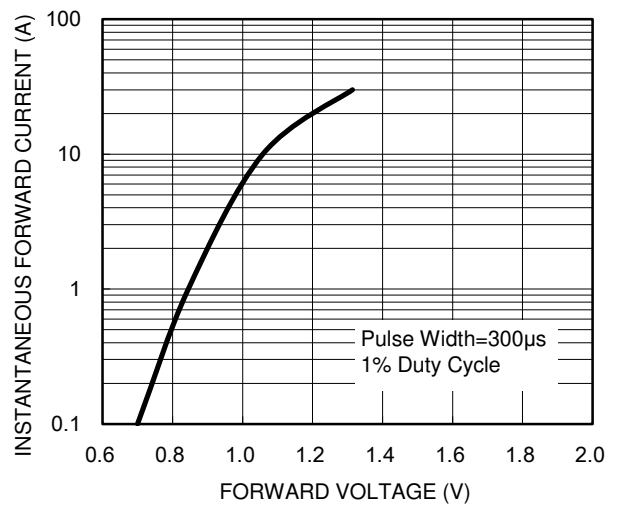
**Fig.2 Typical Junction Capacitance**



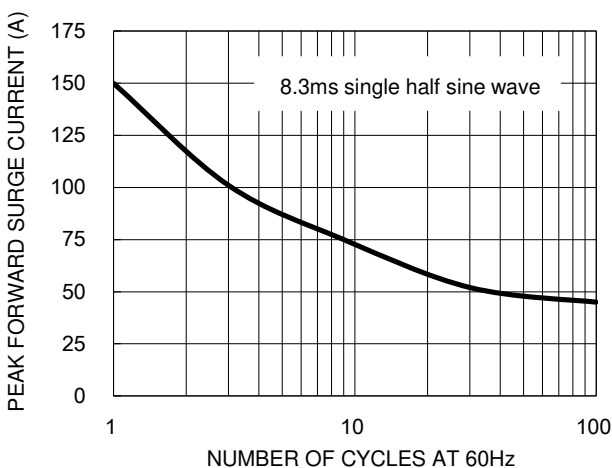
**Fig.3 Typical Reverse Characteristics**



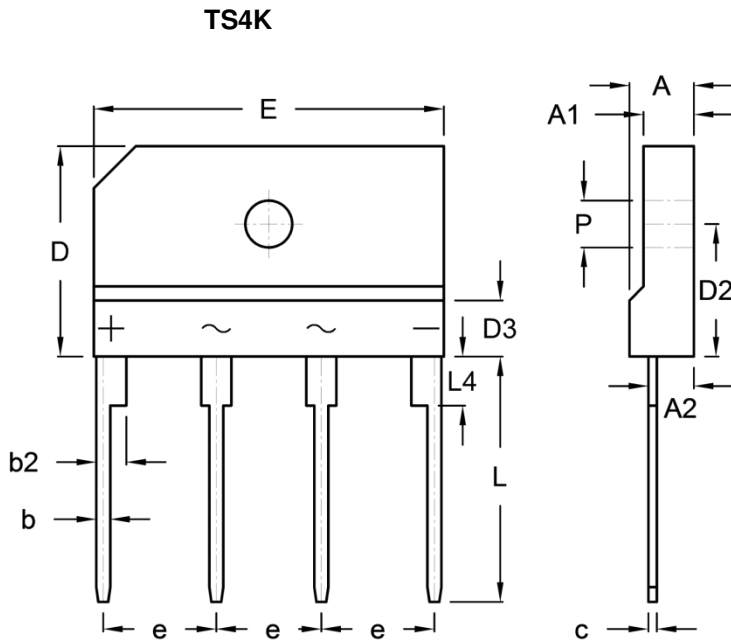
**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**



| 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   | 3.10      | 3.40  | 0.122       | 0.134 |
| b    | 0.90      | 1.10  | 0.035       | 0.043 |
| b2   | 2.00      | 2.30  | 0.079       | 0.091 |
| c    | 0.50      | 0.70  | 0.020       | 0.028 |
| D    | 14.70     | 15.30 | 0.579       | 0.602 |
| D2   | 9.30      | 9.60  | 0.366       | 0.378 |
| D3   | 3.00      | 5.00  | 0.118       | 0.197 |
| E    | 24.70     | 25.30 | 0.972       | 0.996 |
| 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      | 3.60  | 0.122       | 0.142 |

**MARKING DIAGRAM**



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

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