

## 6A, 50V - 1000V Standard Bridge Rectifier

### FEATURES

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

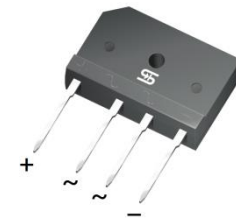
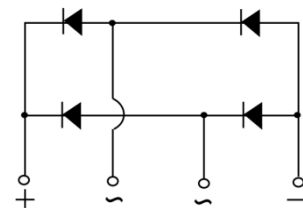
### APPLICATIONS

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

### MECHANICAL DATA

- Case: TS-6P
- 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
- Mounting torque: 0.92 N·m maximum
- Polarity: As marked
- Weight: 7.15g (approximately)

| KEY PARAMETERS |           |              |
|----------------|-----------|--------------|
| PARAMETER      | VALUE     | UNIT         |
| $I_F$          | 6         | A            |
| $V_{RRM}$      | 50 - 1000 | V            |
| $I_{FSM}$      | 150       | A            |
| $T_{J\ MAX}$   | 150       | $^{\circ}$ C |
| Package        | TS-6P     |              |
| Configuration  | Quad      |              |


**TS-6P**


### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^{\circ}$ C unless otherwise noted)

| PARAMETER  | SYMBOL       | TS6P         | TS6P        | TS6P        | TS6P        | TS6P        | TS6P        | TS6P        | UNIT             |
|--|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|
|  |              | 01G          | 02G         | 03G         | 04G         | 05G         | 06G         | 07G         |                  |
| Marking code on the device   |              | TS6P<br>01G  | TS6P<br>02G | TS6P<br>03G | TS6P<br>04G | TS6P<br>05G | TS6P<br>06G | TS6P<br>07G |                  |
| Repetitive peak reverse voltage  | $V_{RRM}$    | 50           | 100         | 200         | 400         | 600         | 800         | 1000        | V                |
| Reverse voltage, total rms value   | $V_{R(RMS)}$ | 35           | 70          | 140         | 280         | 420         | 560         | 700         | V                |
| Forward current  | $I_F$        | 6            |             |             |             |             |             |             | A                |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$    | 150          |             |             |             |             |             |             | A                |
| Rating of fusing ( $t < 8.3ms$ )   | $I^2t$       | 93.37        |             |             |             |             |             |             | A <sup>2</sup> s |
| Junction temperature   | $T_J$        | - 55 to +150 |             |             |             |             |             |             | $^{\circ}$ C     |
| Storage temperature  | $T_{STG}$    | - 55 to +150 |             |             |             |             |             |             | $^{\circ}$ C     |

| <b>THERMAL PERFORMANCE</b>          |                 |            |             |
|-------------------------------------|-----------------|------------|-------------|
| <b>PARAMETER</b>                    | <b>SYMBOL</b>   | <b>TYP</b> | <b>UNIT</b> |
| Junction-to-case thermal resistance | $R_{\theta JC}$ | 1.8        | °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>                              | $T_J = 25^\circ\text{C}$                  | $I_R$         | -          | 10         | $\mu\text{A}$ |
|   | $T_J = 125^\circ\text{C}$                 |               | -          | 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> |
| TS6PxG                                 | TS-6P          | 15 / Tube      |
| TS6PxGH                                | TS-6P          | 15 / Tube      |

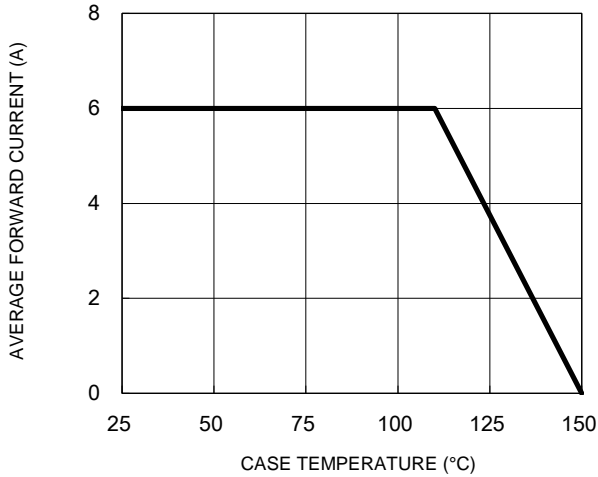
**Notes:**

1. "x" defines voltage from 50V(TS6P01G) to 1000V(TS6P07G)
2. "H" means AEC-Q101 qualified

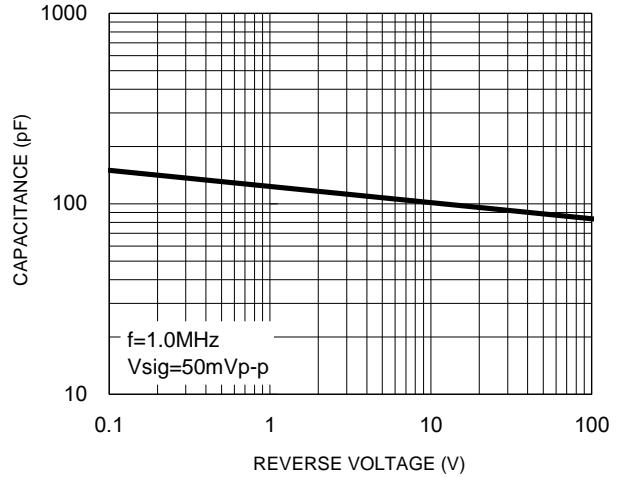
**CHARACTERISTICS CURVES**

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

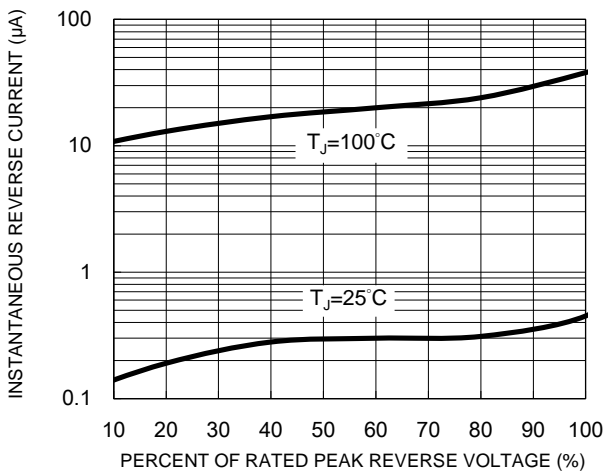
**Fig.1 Forward Current Derating Curve**



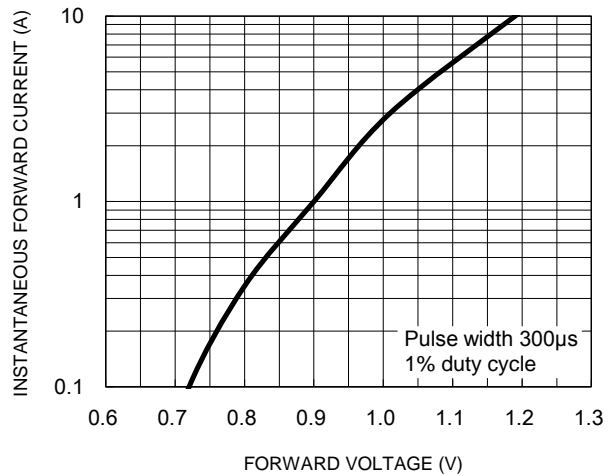
**Fig.2 Typical Junction Capacitance**



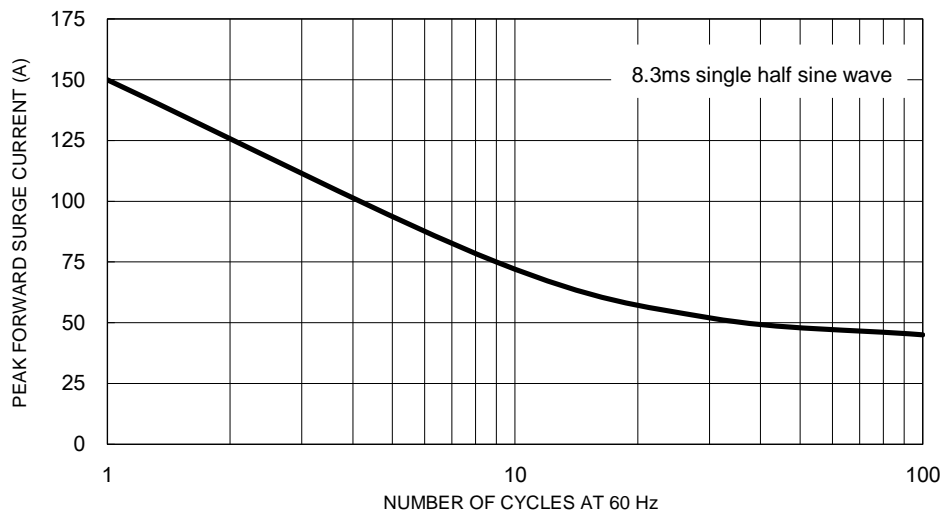
**Fig.3 Typical Reverse Characteristics**



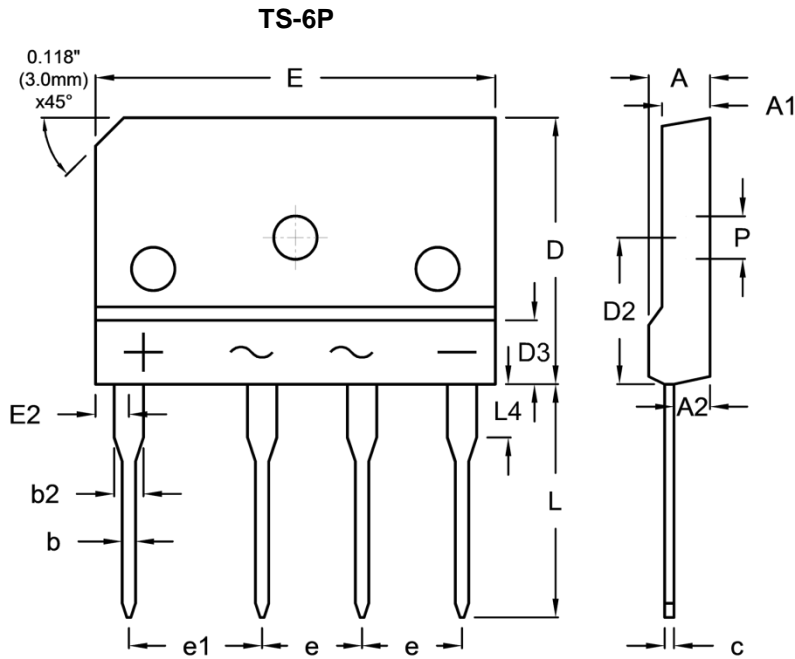
**Fig.4 Typical Forward Characteristics**



**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   | 2.50      | 2.90  | 0.098       | 0.114 |
| b    | 0.90      | 1.10  | 0.035       | 0.043 |
| b2   | 2.00      | 2.40  | 0.079       | 0.094 |
| c    | 0.65      | 0.75  | 0.026       | 0.030 |
| D    | 19.70     | 20.30 | 0.776       | 0.799 |
| D2   | 10.80     | 11.20 | 0.425       | 0.441 |
| D3   | -         | 4.80  | -           | 0.189 |
| E    | 29.70     | 30.30 | 1.169       | 1.193 |
| E2   | 2.30      | 2.70  | 0.091       | 0.106 |
| e    | 7.30      | 7.70  | 0.287       | 0.303 |
| e1   | 9.80      | 10.20 | 0.386       | 0.402 |
| L    | 17.00     | 18.00 | 0.669       | 0.709 |
| L4   | 3.80      | 4.20  | 0.150       | 0.165 |
| 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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