# 4A, 400V - 800V Glass Passivated Bridge Rectifier

## FEATURES

- Glass passivated junction
- Ideal for printed circuit board
- High surge current capability
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC

## APPLICATIONS

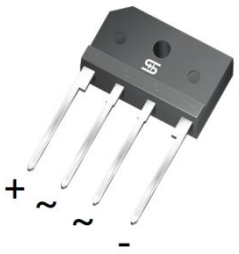
- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

## MECHANICAL DATA

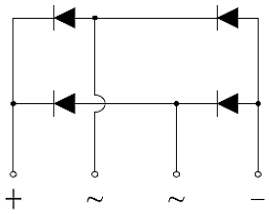
- Case: TS4K
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: As marked
- Mounting torque: 0.92 N·m maximum
- Weight: 4.1 g (approximately)

| KEY PARAMETERS | | |
|---|---|---|
| **PARAMETER** | **VALUE** | **UNIT** |
| $I_F$ | 4 | A |
| $V_{RRM}$ | 400 - 800 | V |
| $I_{FSM}$ | 120 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | TS4K | |
| Configuration | Quad | |

Pb-Free RoHS COMPLIANT




**TS4K**




| ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25°C unless otherwise noted) | | | | | |
|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **TS4K40-A** | **TS4K60-A** | **TS4K80-A** | **UNIT** |
| Marking code on the device | | TS4K40 | TS4K60 | TS4K80 | |
| Repetitive peak reverse voltage | $V_{RRM}$ | 400 | 600 | 800 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 280 | 420 | 560 | V |
| Forward current | $I_F$ | 4 | | | A |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 120 | | | A |
| Rating of fusing ( t<8.3ms) | $I^2t$ | 60 | | | $A^2s$ |
| 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 | $R_{\Theta JL}$ | 7 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\Theta JA}$ | 18 | °C/W |
| Junction-to-case thermal resistance | $R_{\Theta JC}$ | 6 | °C/W |

**Thermal Performance Note:** Mounted on Heat sink Size of 2"x3"x0.25" Al-Plate.

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

| PARAMETER | CONDITIONS | SYMBOL | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|
| Forward voltage per diode (1) | $I_F$ = 2A, $T_J$ = 25°C | $V_F$ | - | 1.0 | V |
| | $I_F$ = 2A, $T_J$ = 125°C | | - | 0.9 | V |
| Reverse current @ rated $V_R$ per diode (2) | $T_J$ = 25°C | $I_R$ | - | 10 | μA |
| | $T_J$ = 125°C | | - | 500 | μA |
| Junction capacitance | 1 MHz, $V_R$=4.0V | $C_J$ | 42 | - | pF |

**Notes:**

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

## ORDERING INFORMATION

| ORDERING CODE | PACKAGE | PACKING |
|---|---|---|
| TS4K40-A D3 | TS4K | 20 / TUBE |
| TS4K60-A D3 | TS4K | 20 / TUBE |
| TS4K80-A D3 | TS4K | 20 / TUBE |

## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig.1 Forward Current Derating Curve**

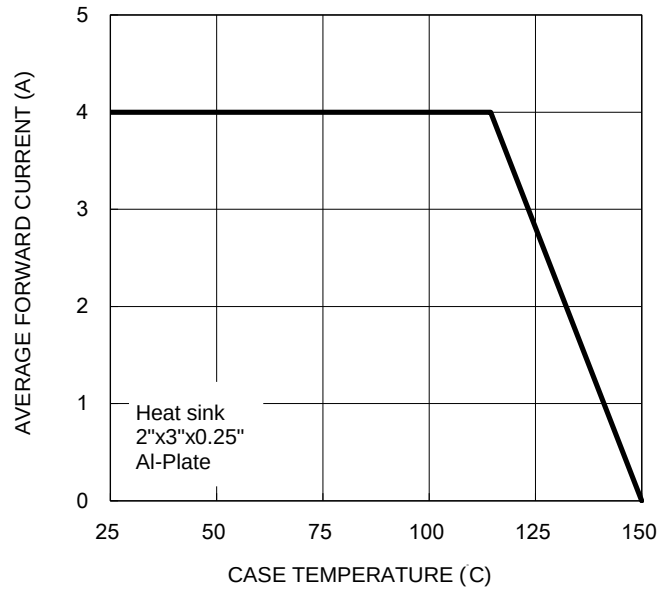



**Fig.2 Typical Junction Capacitance**

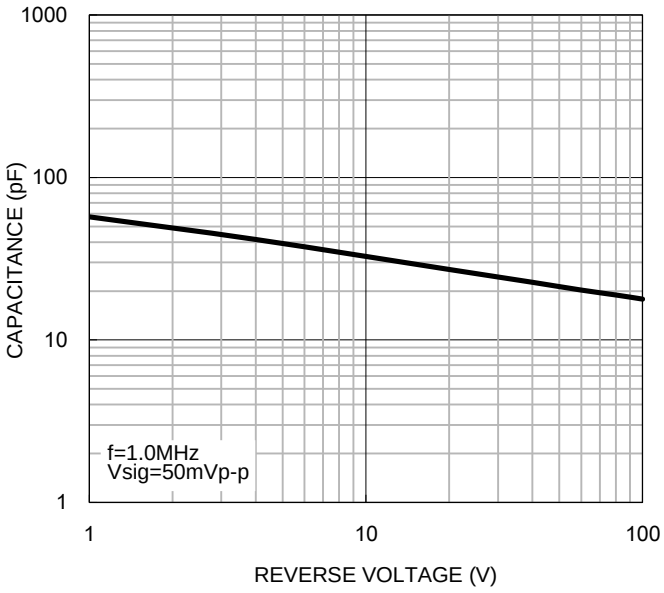



**Fig.3 Typical Reverse Characteristics**

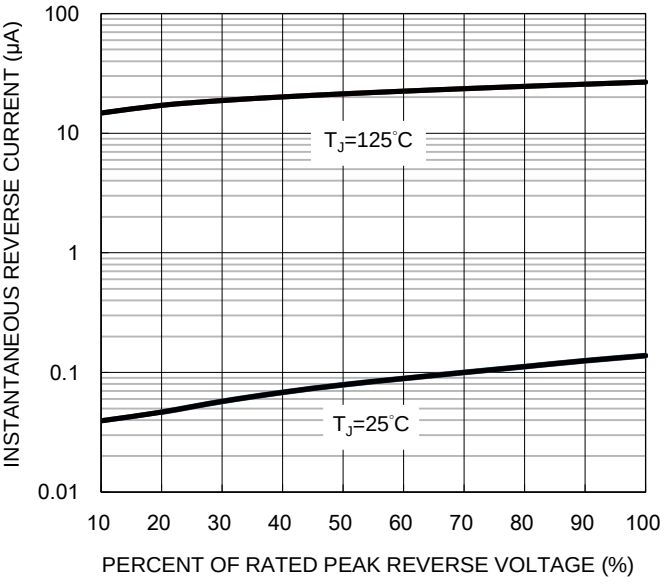
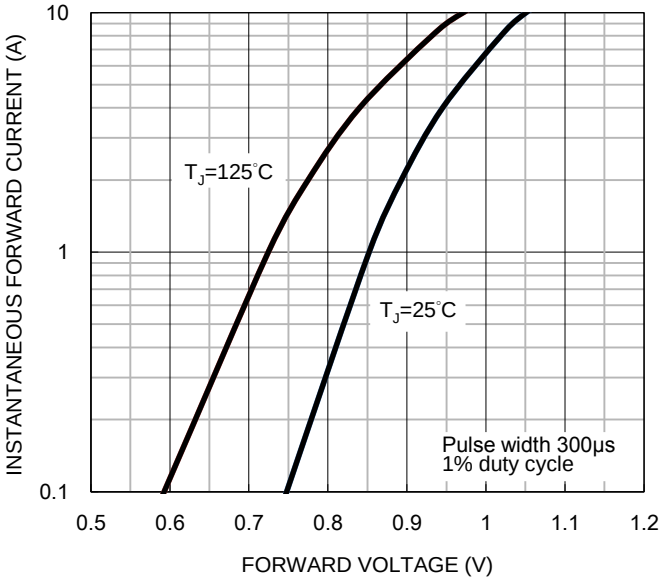
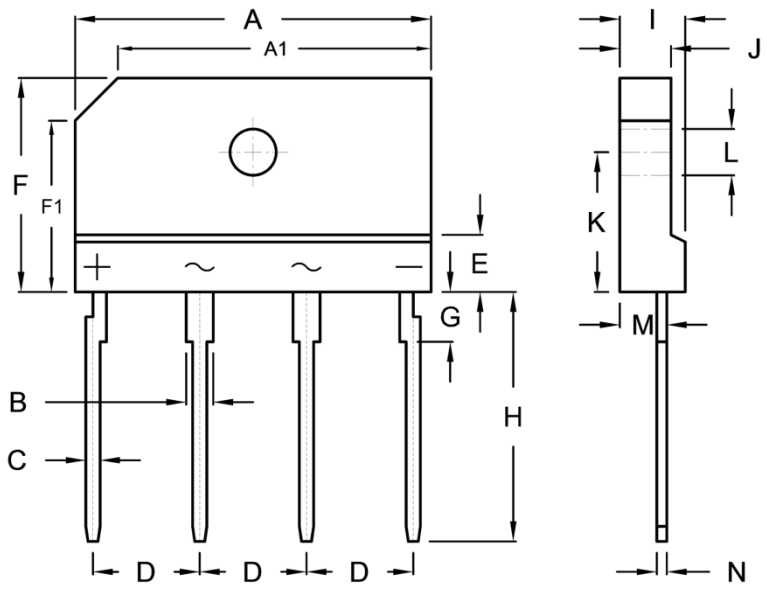



**Fig.4 Typical Forward Characteristics**



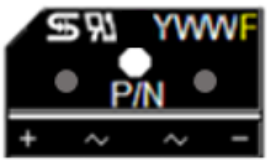
## PACKAGE OUTLINE DIMENSIONS

**TS4K**




| DIM. | Unit (mm) | | Unit (inch) | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 24.70 | 25.30 | 0.972 | 0.996 |
| A1 | 21.50 | 22.50 | 0.846 | 0.886 |
| B | 1.70 | 2.10 | 0.067 | 0.083 |
| C | 0.90 | 1.10 | 0.035 | 0.043 |
| D | 7.30 | 7.70 | 0.287 | 0.303 |
| E | 3.80 | 4.20 | 0.150 | 0.165 |
| F | 14.70 | 15.30 | 0.579 | 0.602 |
| F1 | 11.50 | 12.50 | 0.453 | 0.492 |
| G | 3.30 | 3.70 | 0.130 | 0.146 |
| H | 17.00 | 18.00 | 0.669 | 0.709 |
| I | 4.40 | 4.80 | 0.173 | 0.189 |
| J | 3.40 | 3.80 | 0.134 | 0.150 |
| K | 9.50 | 10.10 | 0.374 | 0.398 |
| L | 3.10 | 3.40 | 0.122 | 0.134 |
| M | 3.20 | 3.40 | 0.126 | 0.134 |
| N | 0.60 | 0.80 | 0.024 | 0.031 |

## MARKING DIAGRAM




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

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