

## 100mA, 75V Switching Diode

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: 0603(Ceramics)
- Molding compound meets UL flammability classification rating 94HB
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 2.7 mg (approximately)

| KEY PARAMETERS       |                 |      |
|----------------------|-----------------|------|
| PARAMETER            | VALUE           | UNIT |
| $I_F$                | 100             | mA   |
| $V_{RRM}$            | 75              | V    |
| $I_{FSM}$            | 0.8             | A    |
| $V_F$ at $I_F=10mA$  | 1.00            | V    |
| $V_F$ at $I_F=100mA$ | 1.25            |      |
| $T_J$ Max.           | 150             | °C   |
| Package              | 0603 (Ceramics) |      |
| Configuration        | Single die      |      |



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |           |                   |      |
|---|-----------|-------------------|------|
| PARAMETER   | SYMBOL    | VALUE             | UNIT |
| Repetitive peak reverse voltage   | $V_{RRM}$ | 75                | V    |
| Mean forward current  | $I_F$     | 100               | mA   |
| Non-repetitive peak forward surge current                                   | $I_{FSM}$ | at $t < 1s$       | 0.4  |
|   |           | at $t \leq 8.3ms$ | 0.8  |
| Junction temperature range  | $T_J$     | -55 to +150       | °C   |
| Storage temperature range   | $T_{STG}$ | -55 to +150       | °C   |

| <b>THERMAL PERFORMANCE</b>             |                 |             |               |
|--|-----------------|-------------|---------------|
| <b>PARAMETER</b>                       | <b>SYMBOL</b>   | <b>TYP.</b> | <b>UNIT</b>   |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 375         | $^{\circ}C/W$ |

| <b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^{\circ}C$ 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>                                       | $I_F=10mA, T_J=25^{\circ}C$         | $V_F$         | -           | 1.00        | V           |
|  | $I_F=100mA, T_J=25^{\circ}C$        |               | -           | 1.25        |             |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup>                         | $V_R=20V, T_J=25^{\circ}C$          | $I_R$         | -           | 25          | nA          |
|  | $V_R=75V, T_J=25^{\circ}C$          |               | -           | 5           | $\mu A$     |
| Reverse recovery time  | $I_F=10mA, I_R=10mA, R_L=100\Omega$ | $t_{rr}$      | -           | 4           | ns          |
| Junction capacitance   | 1 MHz, $V_R=0V$                     | $C_J$         | -           | 4           | pF          |

**Notes:**

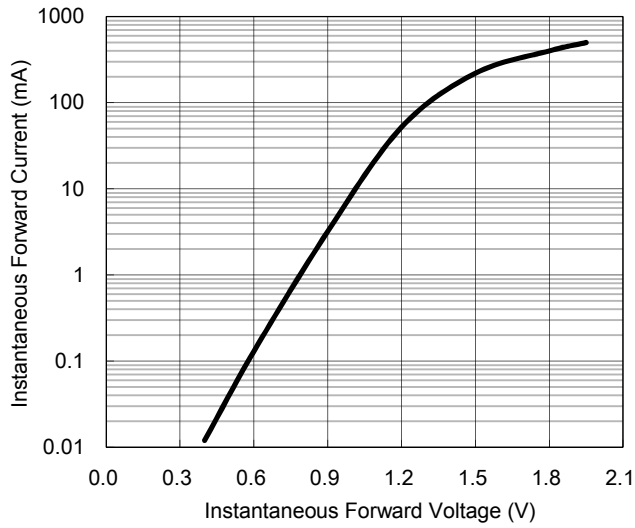
1. Pulse test with  $PW=0.3$  ms
2. Pulse test with  $PW=30$  ms

| <b>ORDERING INFORMATION</b> |                |                |
|-----------------------------|----------------|----------------|
| <b>ORDERING CODE</b>        | <b>PACKAGE</b> | <b>PACKING</b> |
| TS4148C RZG                 | 0603           | 5K / 7" Reel   |
| TS4148C RCG                 |                | 10K / 13" Reel |

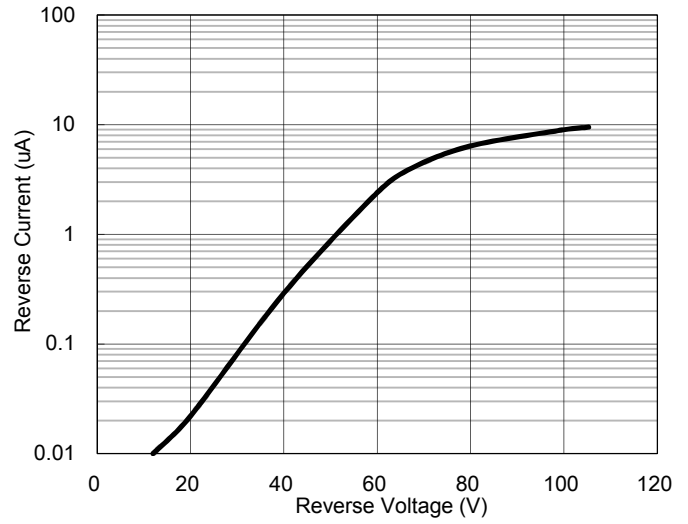
**CHARACTERISTICS CURVES**

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

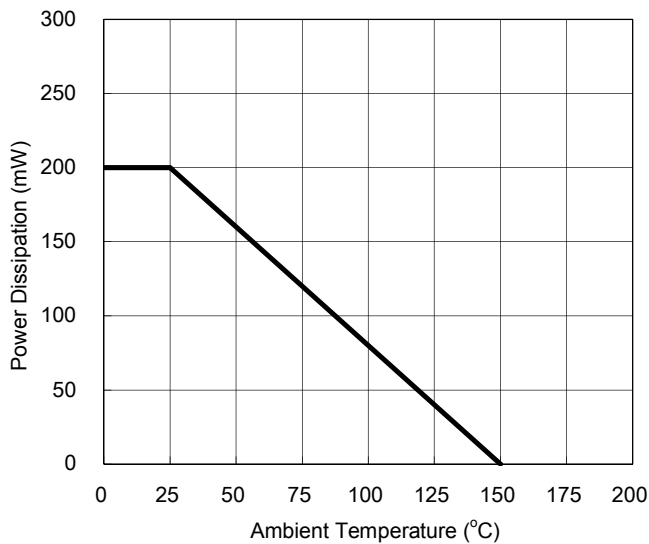
**Fig. 1 Typical Forward Characteristics**



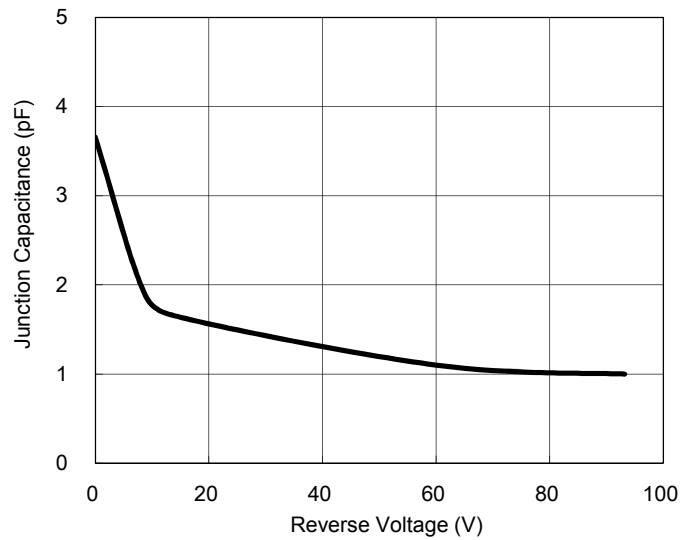
**Fig. 2 Typical Reverse Characteristics**



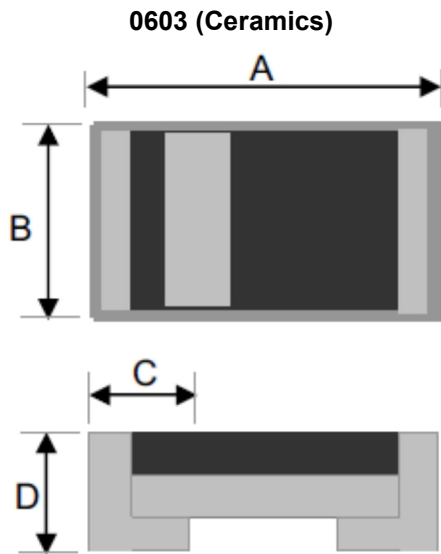
**Fig. 3 Admissible Power Dissipation Curve**



**Fig. 4 Typical Junction Capacitance**



**PACKAGE OUTLINE DIMENSION**



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 1.45      | 1.65 | 0.057       | 0.065 |
| B    | 0.70      | 0.90 | 0.028       | 0.035 |
| C    | 0.25      | 0.45 | 0.010       | 0.018 |
| D    | 0.55      | 0.75 | 0.022       | 0.030 |

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