

150mA, 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
- Compliance 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: 1206(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: 0.01g (approximately)

| KEY PARAMETERS | | |
|----------------------|-----------------|------|
| PARAMETER | VALUE | UNIT |
| P_D | 500 | mW |
| $I_{F(AV)}$ | 150 | mA |
| V_{RRM} | 75 | V |
| I_{FSM} | 2 | A |
| V_F at $I_F=100mA$ | 1.00 | V |
| T_J Max. | 150 | °C |
| Package | 1206 (Ceramics) | |
| Configuration | Single die | |



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | |
|---|-------------|----------------------------------|------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Power dissipation | P_D | 500 | mW |
| Repetitive peak reverse voltage | V_{RRM} | 75 | V |
| Non-repetitive peak reverse voltage | V_{RSM} | 100 | V |
| Forward current | $I_{F(AV)}$ | 150 | mA |
| Repetitive peak forward current | I_{FRM} | 300 | mA |
| Non-repetitive peak forward surge current | I_{FSM} | tp = 1s square wave | 0.5 |
| | | tp = 8.3ms single half sine wave | 2.0 |
| Junction temperature range | T_J | -55 to +150 | °C |
| Storage temperature range | T_{STG} | -55 to +150 | °C |

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

| ELECTRICAL SPECIFICATIONS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted) | | | | | |
|---|---|---------------|-------------|-------------|---------------|
| PARAMETER | CONDITIONS | SYMBOL | TYP. | MAX. | UNIT |
| Reverse breakdown voltage ⁽²⁾ | $I_R=100\mu\text{A}, T_J=25^{\circ}\text{C}$ | V_R | 75 | - | V |
| Forward voltage per diode ⁽¹⁾ | $I_F=100\text{mA}, T_J=25^{\circ}\text{C}$ | V_F | - | 1 | V |
| Reverse recovery time | $I_F=10\text{mA}, I_R=10\text{mA}, R_L=100\Omega$ | t_{rr} | - | 4 | ns |
| Reverse current @ rated V_R per diode ⁽²⁾ | $V_R=20\text{V } T_J=25^{\circ}\text{C}$ | I_R | - | 25 | nA |
| | $V_R=75\text{V } T_J=25^{\circ}\text{C}$ | | - | 5 | μA |
| Junction capacitance | 1 MHz, $V_R=0\text{V}$ | C_J | - | 4 | pF |

Notes:

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

| ORDERING INFORMATION | | |
|-----------------------------|----------------|----------------|
| ORDERING CODE | PACKAGE | PACKING |
| TS4148 RXG | 1206 | 5K / 7" Reel |
| TS4148 RAG | | 10K / 13" Reel |

CHARACTERISTICS CURVES

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

Fig. 1 Typical Forward Characteristics

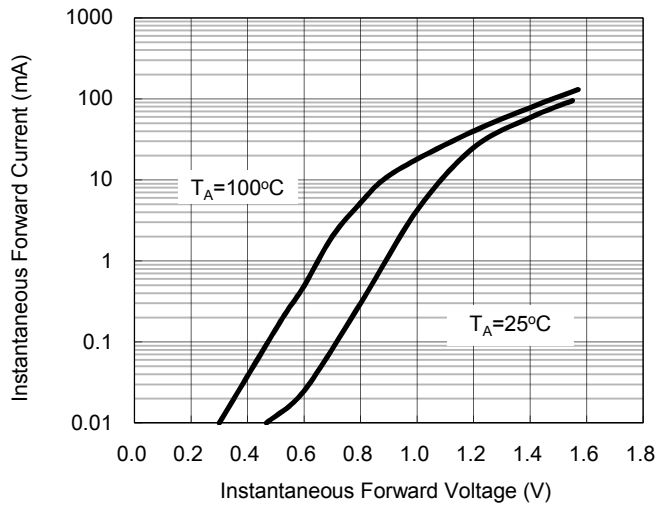


Fig. 2 Reverse Current VS. Reverse Voltage

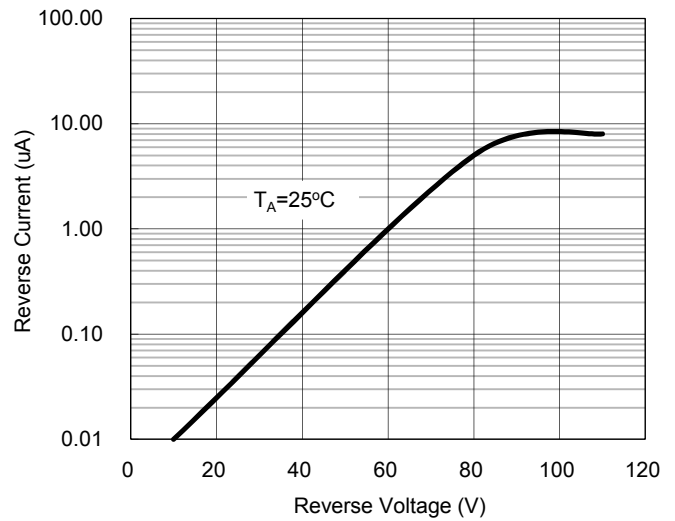


Fig. 3 Admissible Power Dissipation Curve

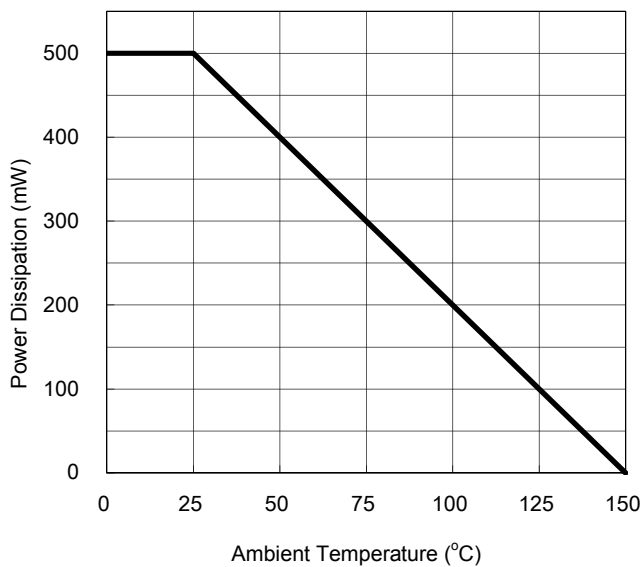
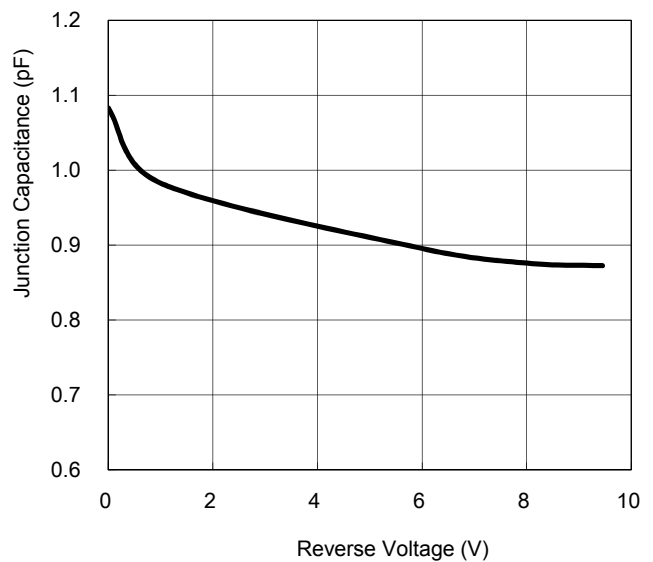


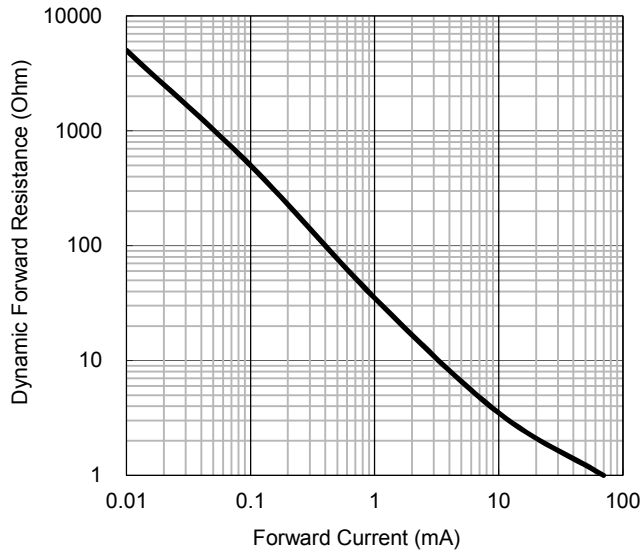
Fig. 4 Typical Junction Capacitance



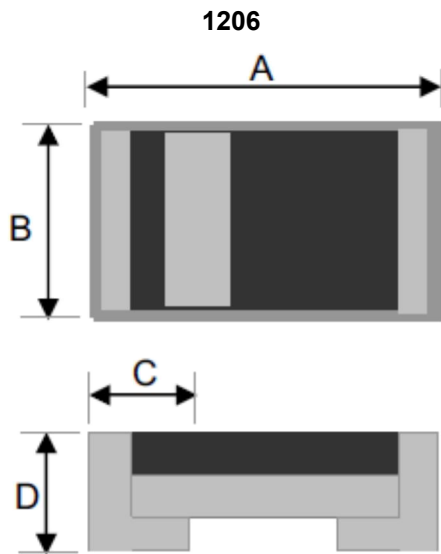
CHARACTERISTICS CURVES

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

Fig. 5 Forward Resistance VS. Forward Current



PACKAGE OUTLINE DIMENSION



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 3.00 | 3.40 | 0.118 | 0.134 |
| B | 1.30 | 1.70 | 0.051 | 0.067 |
| C | 0.35 | 0.75 | 0.014 | 0.030 |
| D | 0.65 | 0.85 | 0.026 | 0.033 |

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