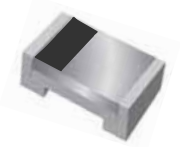
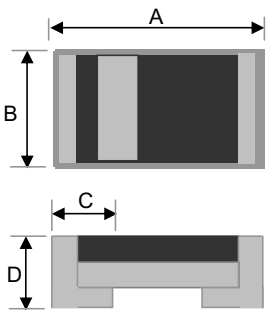
TAIWAN SEMICONDUCTOR

# TS4148 RXG
# 400mW High Speed SMD Switching Diode

## Small Signal Diode



**1206**




## Features

- ✧Designed for mounting on small surface.
- ✧Extremely thin/leadless package
- ✧High mounting capability,strong surage with stand, high reliability.
- ✧Pb free version and RoHS compliant
- ✧Halogen free

## Mechanical Data

- ✧Case :1206 standard package, molded plastic
- ✧Terminal: Gold plated, solderable per MIL-STD-750, method 2026 guaranteed
- ✧High temperature soldering guaranteed: 260°C/10s
- ✧Polarity : Indicated by cathode band
- ✧Weight : 0.010 gram (approximately)

| Dimensions | 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 | 0.75 | 0.95 | 0.030 | 0.037 |

## Ordering Information

| Part No. | Package | Packing |
|---|---|---|
| TS4148 RXG | 1206 | 5Kpcs / 7" Reel |

## Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

### Maximum Ratings

| Type Number | Symbol | Value | Units |
|---|---|---|---|
| Power Dissipation | $P_D$ | 400 | mW |
| Non-Repetitive Peak Reverse Voltage | $V_{RSM}$ | 100 | V |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | 75 | V |
| Repetitive Peak Forward Current | $I_{FRM}$ | 300 | mA |
| Mean Forward Current | $I_O$ | 150 | mA |
| Non-Repetitive Peak Forward Surge Current<br>Tp=1sec square waveform<br>8.3ms single half sine waveform | $I_{FSM}$ | <br>0.5<br>2.0 | A |
| Thermal Resistance (Junction to Ambient) (Note 1) | RθJA | 375 | °C/W |
| Junction and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to + 175 | °C |

### Electrical Characteristics

| Type Number | | | Symbol | Min | Max | Units |
|---|---|---|---|---|---|---|
| Reverse Breakdown Voltage | | (Note 2) | $V_{(BR)}$ | - | 75 | V |
| Forward Voltage | $I_F$= | 10mA | $V_F$ | - | 1.00 | V |
| Reverse Leakage Current | $V_R$= | 20V | $I_R$ | - | 25 | nA |
| | $V_R$= | 75V | | - | 5 | μA |
| Junction Capacitance | $V_R$=0, f=1.0MHz | | $C_J$ | | 4.0 | pF |
| Reverse Recovery Time | (Note3) | | Trr | | 4 | ns |

Notes:1. Valid provided that electrodes are kept at ambient temperature

Notes:2. Test Condition : $I_R$=100μA

Notes:3. Test Condition : $I_F$=10mA, $I_R$=1mA,$R_L$=100Ω

## Small Signal Diode

## Rating and Sharacteristic Curves

**FIG 1 Typical Forward Characteristics**

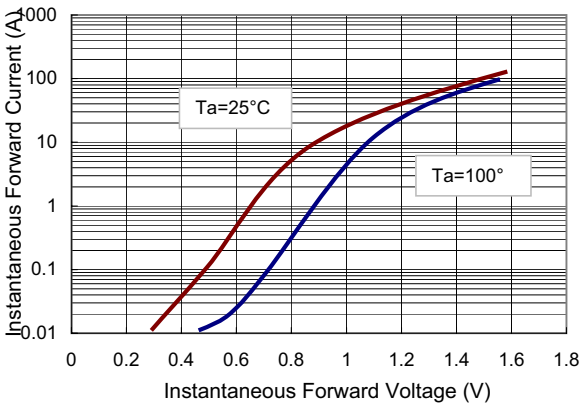



**FIG 2 Reverse Current vs Reverse Voltage**

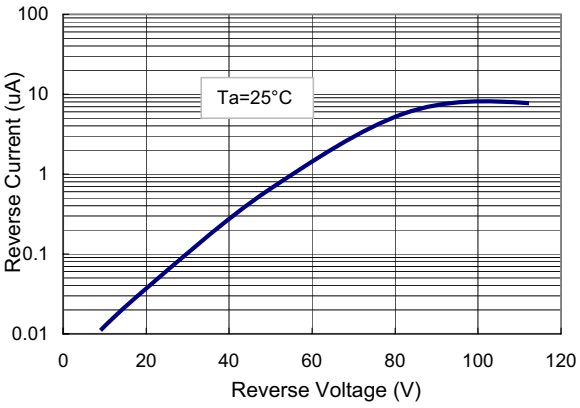



**FIG 3 Admissible Power Dissipation Curve**

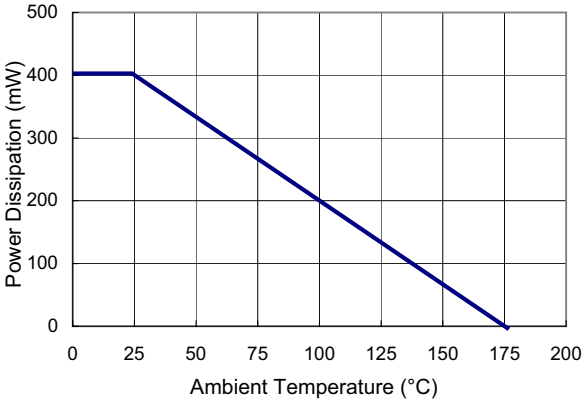



**FIG 4 Typical Junction Capacitance**

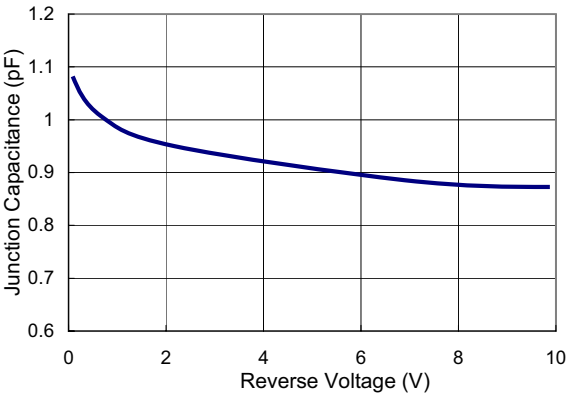



**FIG 5 Forward Resistance vs. Forward Current**