



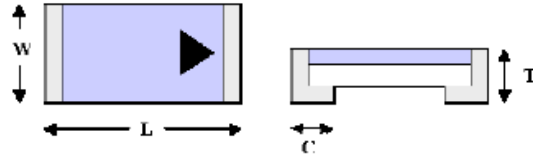
TS4148

0.35 / 0.5AMPS High Speed Switching Diode

Voltage Range
100 Volts
Current
0.35 / 0.5 Ampere

Features

- ✧ For surface mounted application
- ✧ Low forward voltage drop
- ✧ High Current capability
- ✧ Fast switching for high efficiency
- ✧ High surge current capability
- ✧ Chip version in 1206 and 0805, 0603
- ✧ High temperature soldering:
260°C / 10 seconds at terminals



Mechanical Data

- ✧ Cases: 1206, 0805 or 0603
- ✧ Terminals: Tin plated
- ✧ Polarity: indicated by cathode arrow
- ✧ Packaging: 8 mm tape per EIA STD RS-481

| Item | 1206 | 0805 | 0603 |
|------|---------------------------|----------------------------|----------------------------|
| L | 0.135(3.40) 0.119(3.0) | 0.088(2.20) 0.072(1.8) | 0.071(1.65) 0.59(1.45) |
| W | 0.07(1.70) 0.054(1.30) | 0.058(1.45) 0.042(1.05) | 0.039(0.9) 0.027(0.7) |
| T | 0.038(0.95) 0.03(0.75) | 0.038(0.95) 0.03(0.75) | 0.034(0.75) 0.026(0.55) |
| C | 0.03(0.75) 0.014(0.35) | 0.026(0.65) 0.01(0.25) | 0.018(0.45) 0.010(0.25) |

Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number | Symbol | 0603 | 1206 | 0805 | Units |
|---|-----------------|--------------|------|------|---------------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 100 | | | V |
| Reverse Voltage | V_R | 75 | | | V |
| Maximum Average Forward Rectified Current Resistive Load $f > 50\text{Hz}$ | $I_{F(AV)}$ | 150 | | | mA |
| Peak Forward Surge Current 8.3 ms Half Sine-wave 1 μs | I_{FSM} | 350 | 500 | | mA |
| | | 2.0 | | | A |
| Maximum Instantaneous Forward Voltage @100mA | V_F | 1.0 | | | V |
| Maximum D.C. Reverse Current @ $T_c=25^\circ\text{C}$ $V_R=20\text{V}$ at Rated DC Blocking Voltage @ $T_c=125^\circ\text{C}$ $V_R=20\text{V}$ | I_R | 25 | | | nA |
| | | 50 | | | μA |
| Typical Reverse Recovery Time(Note 2) $T_J=25^\circ\text{C}$ | T_{rr} | 5.0 | | | nS |
| Typical Junction Capacitance (Note 1) | C_j | 1.55 | 1.65 | 1.60 | pF |
| Typical Thermal Resistance | $R_{\theta JA}$ | 200 | 190 | 150 | $^\circ\text{C}/\text{W}$ |
| | $R_{\theta JC}$ | 105 | 80 | 60 | |
| Power Dissipation | P_D | 350 | 500 | | mW |
| Operating Junction Temperature Range | T_J | -65 to + 200 | | | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65 to + 200 | | | $^\circ\text{C}$ |

Notes: 1. Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

2. Reverse Recovery Test Conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, Recover to 0.25A.



RATINGS AND CHARACTERISTIC CURVES (TS4148)

FIG.1- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

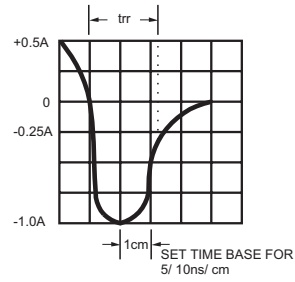
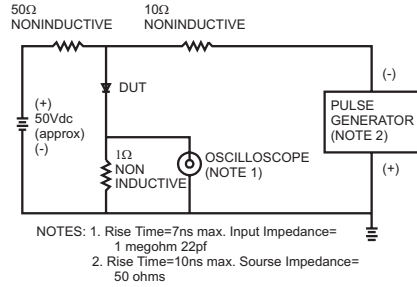


FIG.2- MAXIMUM FORWARD CURRENT DERATING CURVE

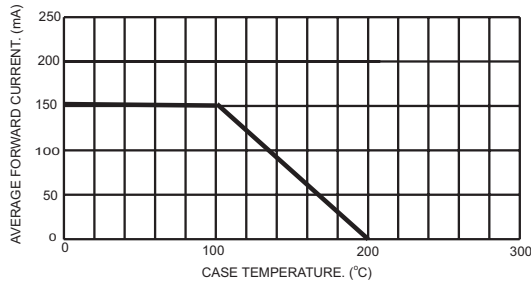


FIG.3- TYPICAL REVERSE CHARACTERISTICS

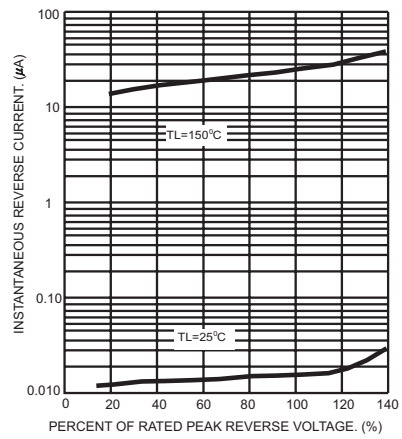


FIG.4- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

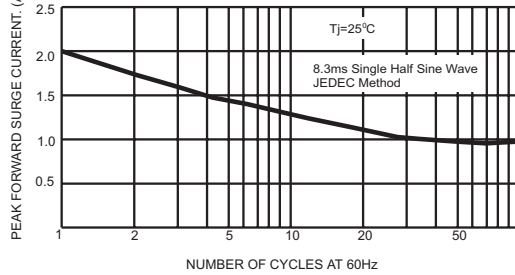


FIG.6- TYPICAL FORWARD CHARACTERISTICS

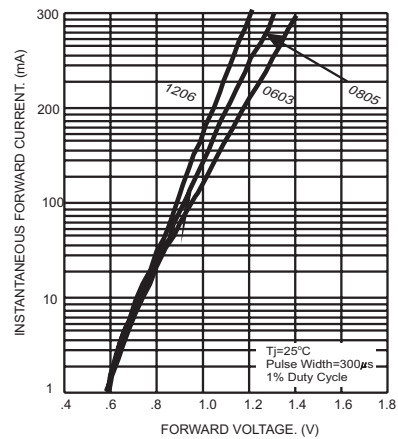


FIG.5- TYPICAL JUNCTION CAPACITANCE

