

### 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
- ✧ High temperature soldering:  
260°C / 10 seconds at terminals

| Item | 1206                      | 0805                       |
|------|---------------------------|----------------------------|
| L    | 0.135(3.40)<br>0.119(3.0) | 0.088(2.20)<br>0.072(1.8)  |
| W    | 0.07(1.70)<br>0.054(1.30) | 0.058(1.45)<br>0.042(1.05) |
| T    | 0.038(0.95)<br>0.03(0.75) | 0.038(0.95)<br>0.03(0.75)  |
| C    | 0.03(0.75)<br>0.014(0.35) | 0.026(0.65)<br>0.01(0.25)  |

### Mechanical Data

- ✧ Cases: 0805, 1206
- ✧ Terminals: Pure tin plated lead free,
- ✧ Polarity: indicated by cathode arrow
- ✧ Packaging: 8 mm tape per EIA STD RS-481

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          | 0805         | 1206 | Units                     |
|--|-----------------|--------------|------|---------------------------|
| Maximum Repetitive Peak Reverse Voltage  | $V_{RRM}$       | 100          |      | V                         |
| Reverse Voltage  | $V_R$           | 75           |      | V                         |
| Maximum Average Forward Rectified Current<br>Resistive Load $f > 50\text{Hz}$                          | $I_{F(AV)}$     | 150          |      | mA                        |
| Peak Forward Surge Current<br>8.3 ms   | $I_{FSM}$       | 500          |      | mA                        |
| Half Sine-wave<br>1 $\mu\text{s}$  |                 | 2.0          |      | A                         |
| Maximum Instantaneous Forward Voltage<br>@100mA  | $V_F$           | 1.0          |      | V                         |
| Maximum D.C. Reverse Current @ $T_c=25^\circ\text{C}$<br>$V_R=20\text{V}$ at Rated DC Blocking Voltage | $I_R$           | 25           |      | nA                        |
| @ $T_c=125^\circ\text{C}$ $V_R=20\text{V}$   |                 | 50           |      | $\mu\text{A}$             |
| Typical Reverse Recovery Time(Note 2)<br>$T_J=25^\circ\text{C}$  | $T_{rr}$        | 5.0          |      | nS                        |
| Typical Junction Capacitance (Note 1)  | $C_j$           | 1.65         | 1.60 | pF                        |
| Typical Thermal Resistance   | $R_{\theta JA}$ | 190          | 150  | $^\circ\text{C}/\text{W}$ |
|  | $R_{\theta JC}$ | 80           | 60   |                           |
| Power Dissipation  | $P_D$           | 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- MAXIMUM FORWARD CURRENT DERATING CURVE

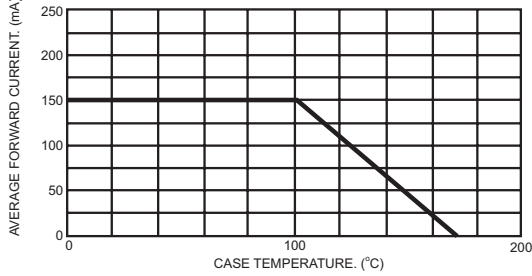


FIG.2- TYPICAL REVERSE CHARACTERISTICS

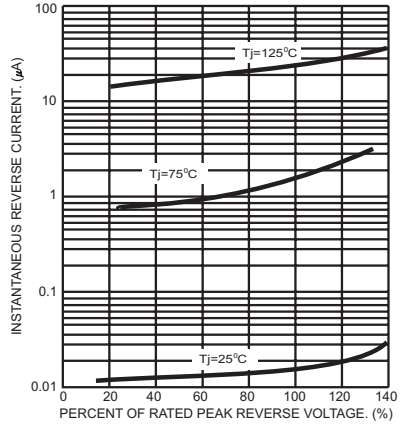


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

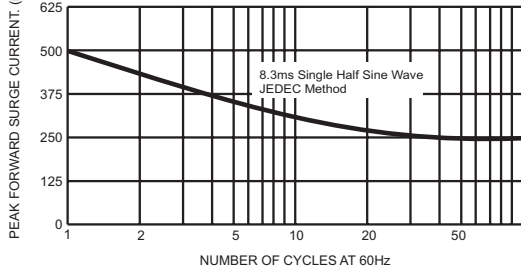


FIG.5- FORWARD CHARACTERISTICS CURVE

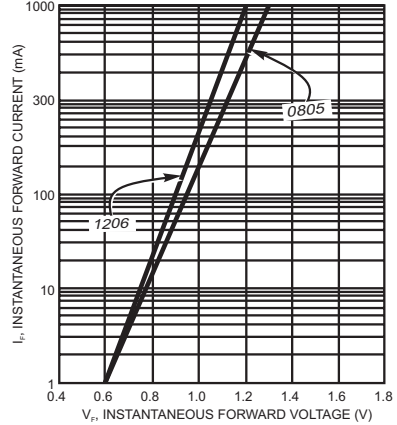


FIG.4- TYPICAL JUNCTION CAPACITANCE

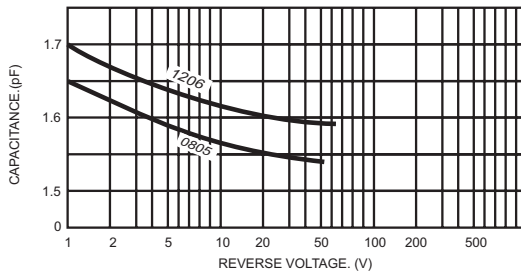
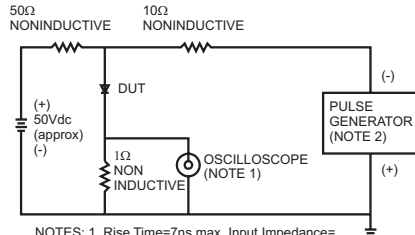


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance= 50 ohms

