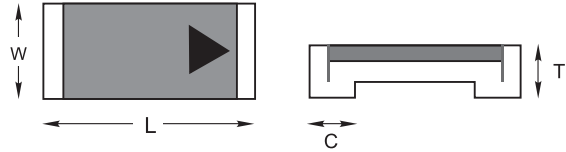




TS4148

0.5AMPS High Speed Switching Diode



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) 0.119(3.0)	0.088(2.20) 0.072(1.8)
W	0.07(1.70) 0.054(1.30)	0.058(1.45) 0.042(1.05)
T	0.038(0.95) 0.03(0.75)	0.038(0.95) 0.03(0.75)
C	0.03(0.75) 0.014(0.35)	0.026(0.65) 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 Resistive Load $f > 50\text{Hz}$	$I_{F(AV)}$	150		mA
Peak Forward Surge Current 8.3 ms	I_{FSM}	500		mA
Half Sine-wave 1 μs		2.0		A
Maximum Instantaneous Forward Voltage @100mA	V_F	1.0		V
Maximum D.C. Reverse Current @ $T_c=25\text{ }^\circ\text{C}$ $V_R=20\text{V}$ at Rated DC Blocking Voltage	I_R	25		nA
@ $T_c=125\text{ }^\circ\text{C}$ $V_R=20\text{V}$		50		μA
Typical Reverse Recovery Time(Note 2) $T_J=25\text{ }^\circ\text{C}$	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	$^\circ\text{C/W}$
	$R_{\theta JC}$	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

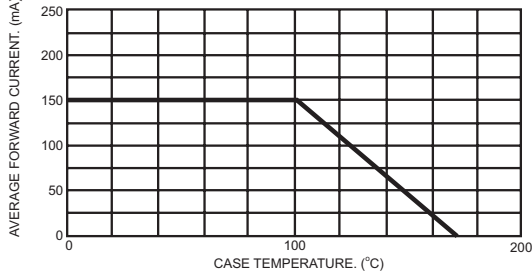


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

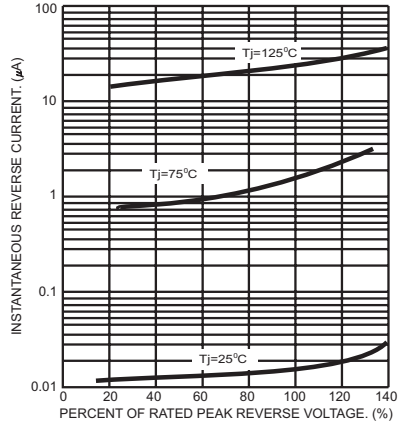


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

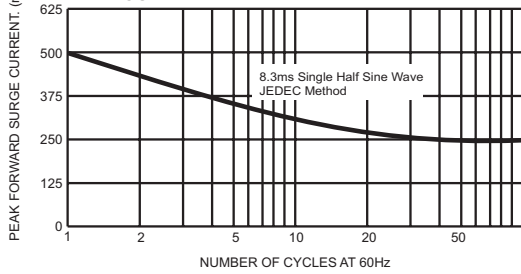


FIG. 5- FORWARD CHARACTERISTICS CURVE

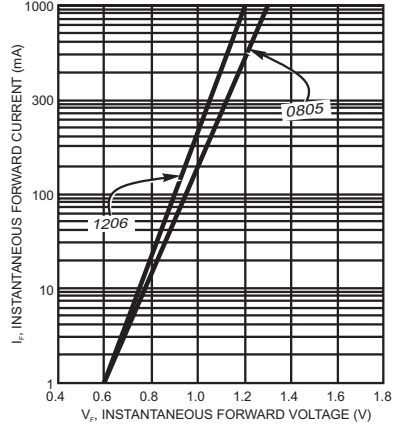


FIG. 4- TYPICAL JUNCTION CAPACITANCE

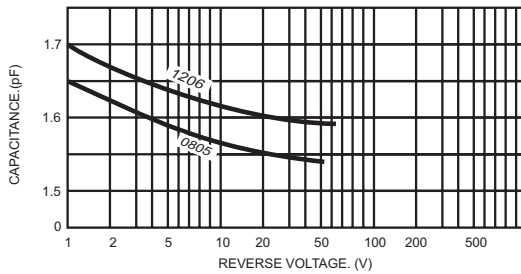
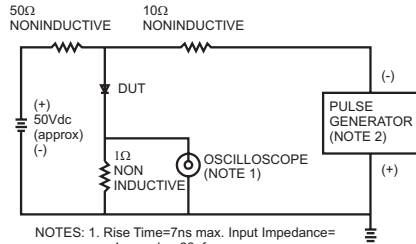


FIG. 6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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

