TAIWAN SEMICONDUCTOR

Pb **RoHS** COMPLIANCE

TS4448

0.125 AMPS High Speed Switching Diode

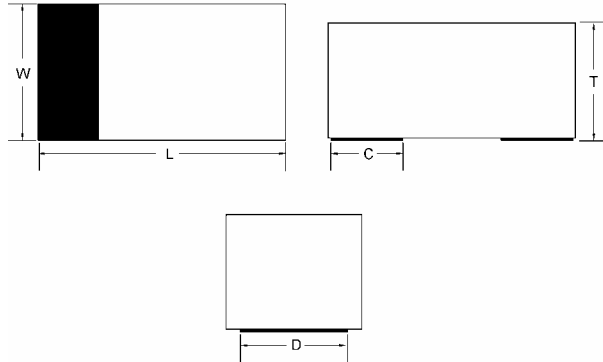### 0603

Features

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

Mechanical Data

✧ Cases: 0603
✧ Terminals: Gold plated, solderable per
✧   MIL-STD-750, method 2026,
✧ Polarity: indicated by cathode band
✧ Package code: RZ
✧ Weight: 0.003 gram (approximately)

Item	0603
L	0.071(1.80) 0.063(1.60)
W	0.039(1.00) 0.031(0.80)
T	0.033(0.85) 0.027(0.70)
C	0.018(0.45) Typical
D	0.028(0.70) Typical

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	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Reverse Voltage	V_R	80	V
Maximum Average Forward Rectified Current Resistive Load f>50Hz	$I_{F(AV)}$	125	mA
Peak Forward Surge Current 8.3 ms Half Sine-wave 1 uS	I_{FSM}	1.0	A
		2.0	A
Maximum Instantaneous Forward Voltage @5 mA @100 mA	V_F	0.72 1.0	V
Maximum D.C. Reverse Current VR=20V at Rated DC Blocking Voltage VR=80V	I_R	25 100	nA
Typical Reverse Recovery Time(Note 1) T_J=25 °C	Trr	9.0	nS
Junction Capacitance (Note 2)	Cj	9.0	pF
Power Dissipation	P_D	150	mW
Operating Junction Temperature Range	T_J	-40 to + 125	°C
Storage Temperature Range	T_{STG}	-40 to + 125	°C

Notes: 1. Reverse Recovery Test Conditions: I_F=I_R=10mA, R_L=100 ohms, Irr=1mA.
           2. Measured at 1 MHz and Applied Reverse Voltage of 0.5V D.C.

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RATINGS AND CHARACTERISTIC CURVES (TS4448)
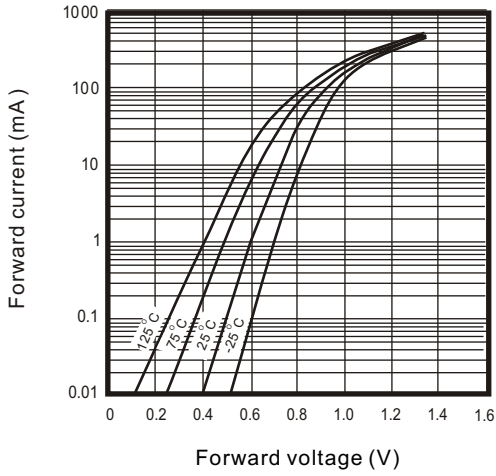
Fig. 1 - Forward characteristics

Forward current (mA) vs Forward voltage (V), with curves for 125°C, 75°C, 25°C, -25°C

Fig. 2 - Reverse characteristics

Reverse current (A) vs Reverse voltage (V), with curves for 125°C, 75°C, 25°C, -25°C
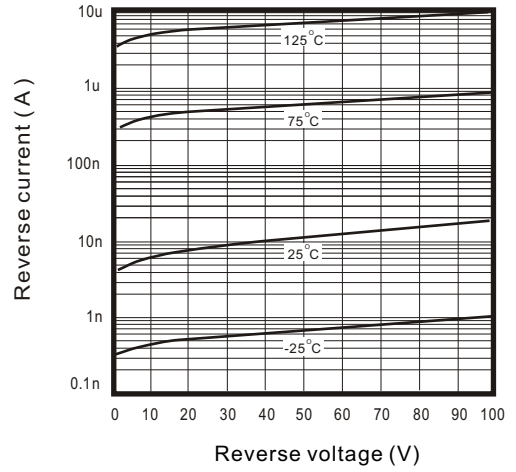
Fig. 3 - Capacitance between terminals characteristics
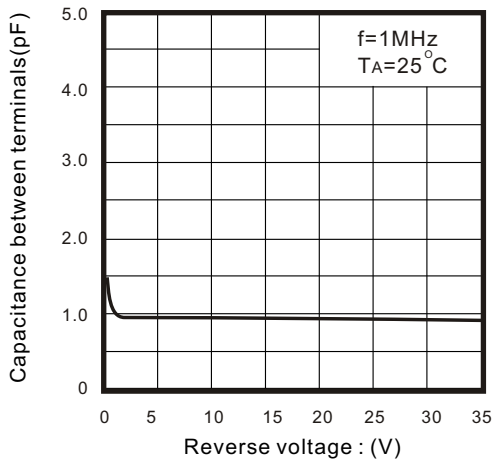

Capacitance between terminals(pF) vs Reverse voltage : (V), f=1MHz, $T_A=25°C$

Fig. 4 - Current derating curve

Average forward current (%) vs Ambient temperature (°C), Mounting on glass epoxy PCBs

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