

TOSHIBA DIODE SILICON EPITAXIAL PLANAR TYPE

# 1SS387

ULTRA HIGH SPEED SWITCHING APPLICATION

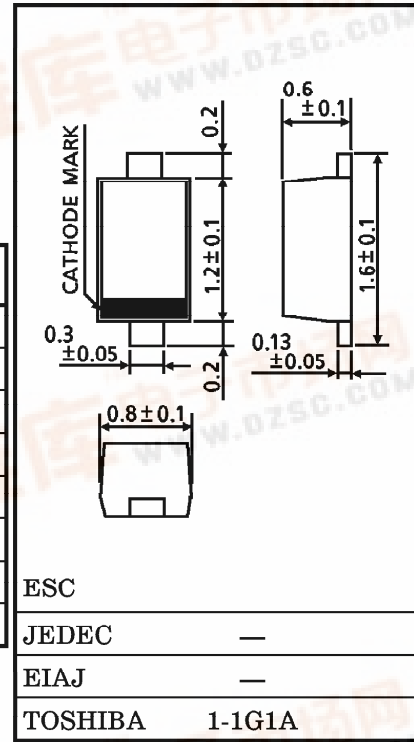
Unit in mm

- Small Package
- Low Forward Voltage :  $V_F(3) = 0.98V$  (Typ.)
- Fast Reverse Recovery Time :  $t_{rr} = 1.6ns$  (Typ.)
- Small Total Capacitance :  $C_T = 0.5pF$  (Typ.)

MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC                 | SYMBOL    | RATING  | UNIT       |
|--------------------------------|-----------|---------|------------|
| Maximum (Peak) Reverse Voltage | $V_{RM}$  | 85      | V          |
| Reverse Voltage                | $V_R$     | 80      | V          |
| Maximum (Peak) Forward Current | $I_{FM}$  | 200     | mA         |
| Average Forward Current        | $I_O$     | 100     | mA         |
| Surge Current (10ms)           | $I_{FSM}$ | 1       | A          |
| Power Dissipation              | P         | 150*    | mW         |
| Junction Temperature           | $T_j$     | 125     | $^\circ C$ |
| Storage Temperature            | $T_{stg}$ | -55~125 | $^\circ C$ |

\* Mounted on a glass epoxy circuit board of 20×20mm  
Pad dimension of 4×4mm.



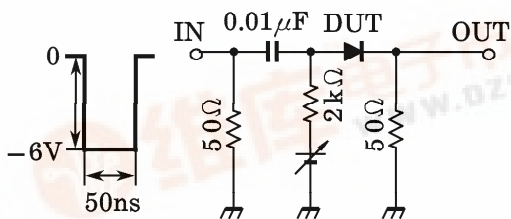
ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

Weight : 1.4mg

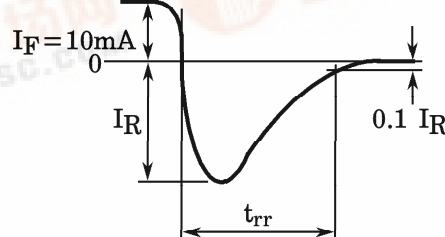
| CHARACTERISTIC        | SYMBOL   | TEST CONDITION      | MIN. | TYP. | MAX. | UNIT    |
|-----------------------|----------|---------------------|------|------|------|---------|
| Forward Voltage       | $V_F(1)$ | $I_F = 1mA$         | —    | 0.62 | —    | V       |
|                       | $V_F(2)$ | $I_F = 10mA$        | —    | 0.75 | —    |         |
|                       | $V_F(3)$ | $I_F = 100mA$       | —    | 0.97 | 1.20 |         |
| Reverse Current       | $I_R(1)$ | $V_R = 30V$         | —    | —    | 0.1  | $\mu A$ |
|                       | $I_R(2)$ | $V_R = 80V$         | —    | —    | 0.5  |         |
| Total Capacitance     | $C_T$    | $V_R = 0, f = 1MHz$ | —    | 0.5  | 3.0  | pF      |
| Reverse Recovery Time | $t_{rr}$ | $I_F = 10mA$ Fig.1  | —    | 1.6  | 4.0  | ns      |

FIG.1 REVERSE RECOVERY TIME ( $t_{rr}$ ) TEST CIRCUIT

INPUT WAVEFORM



OUTPUT WAVEFORM



EQUIVALENT CIRCUIT (TOP VIEW)

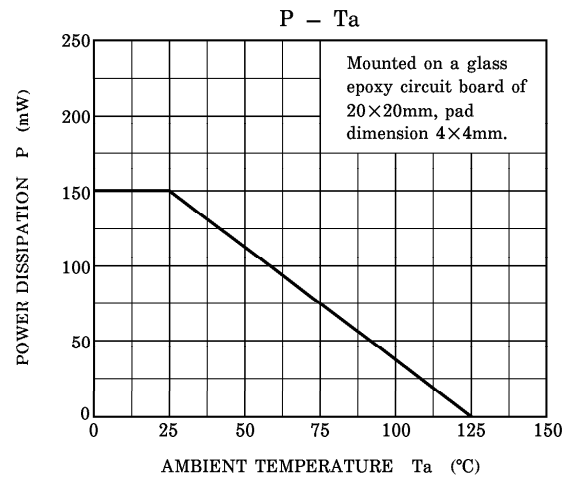
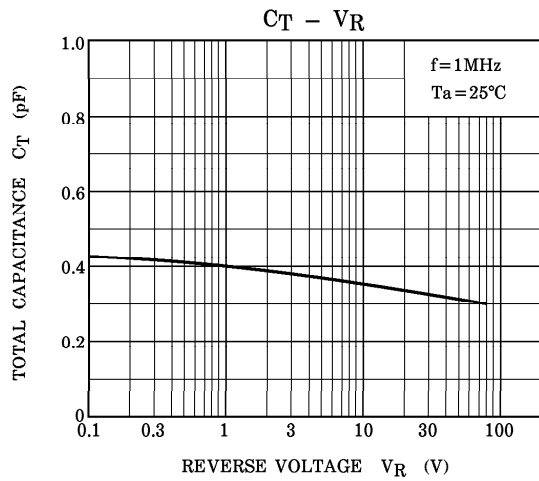
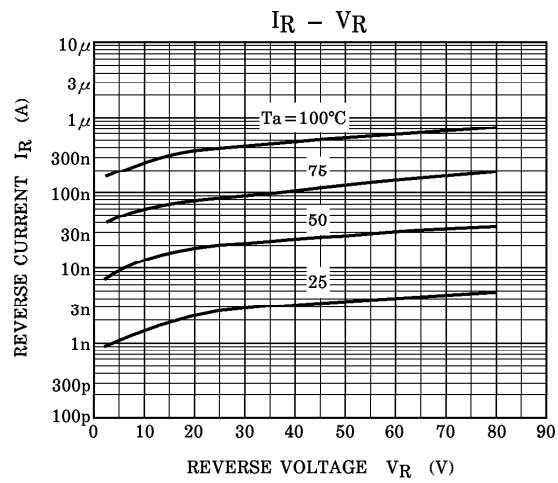
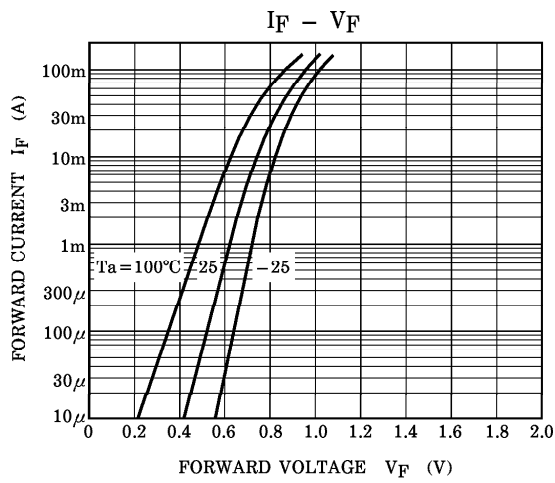


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