

# MA3100W

## Silicon planer type

Constant voltage, constant current, waveform clipper and surge absorption circuit

### ■ Features

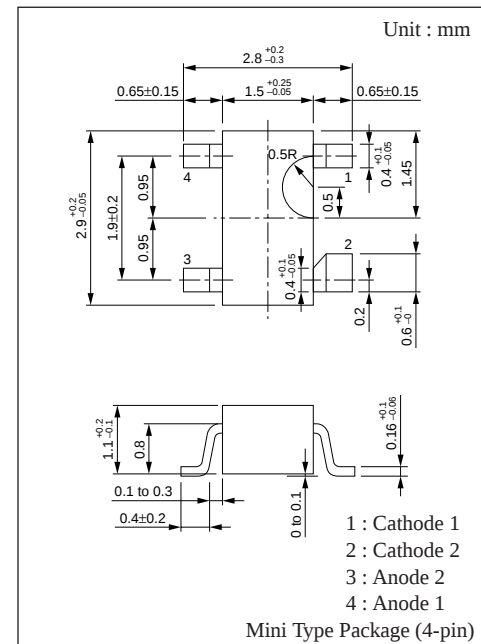
- Mini type package (4-pin)
- Two-element wiring in parallel of MA3100

### ■ Absolute Maximum Ratings (Ta= 25°C)

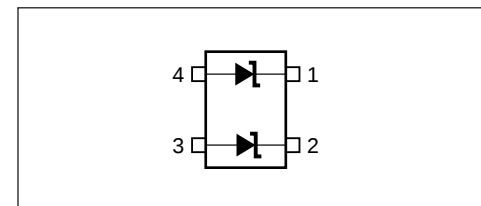
| Parameter                                      |        | Symbol         | Rating        | Unit |
|------------------------------------------------|--------|----------------|---------------|------|
| Average forward current                        | Single | $I_{F(AV)}$    | 100           | mA   |
|                                                | Double | $I_{F(AV)}$    | 75            | mA   |
| Instantaneous forward current                  | Single | $I_{FRM}$      | 200           | mA   |
|                                                | Double | $I_{FRM}$      | 150           | mA   |
| Total power dissipation                        | Single | $P_{tot}^{*1}$ | 150           | mW   |
|                                                | Double | $P_{tot}^{*1}$ | 110           | mW   |
| Non-repetitive reverse surge power dissipation |        | $P_{ZSM}^{*2}$ | 15            | W    |
| Junction temperature                           |        | $T_j$          | 125           | °C   |
| Storage temperature                            |        | $T_{stg}$      | - 55 to + 125 | °C   |

\*1 With a printed-circuit board

\*2  $t=100\mu s$ ,  $T_j=125^\circ C$



### ■ Internal Connection



### ■ Electrical Characteristics (Ta= 25°C)\*1

| Parameter                                | Symbol     | Condition            | min | typ  | max  | Unit     |
|------------------------------------------|------------|----------------------|-----|------|------|----------|
| Forward voltage                          | $V_F$      | $I_F=10mA$           |     | 0.8  | 0.9  | V        |
| Zener voltage                            | $V_Z^{*2}$ | $I_Z= 5mA$           | 9.4 | 10.0 | 10.6 | V        |
| Operating resistance                     | $R_{ZK}$   | $I_Z= 0.5mA$         |     |      | 130  | $\Omega$ |
|                                          | $R_Z$      | $I_Z= 5mA$           |     | 8    | 20   | $\Omega$ |
| Reverse current                          | $I_{R1}$   | $V_R= 7V$            |     |      | 0.2  | $\mu A$  |
|                                          | $I_{R2}$   | $V_R= 8.9V$          |     |      | 60   | $\mu A$  |
| Temperature coefficient of zener voltage | $S_Z^{*3}$ | $I_Z= 5mA$           | 4.5 | 6.4  | 8.0  | mV/°C    |
| Terminal capacitance                     | $C_t$      | $V_R= 0V$ , $f=1MHz$ |     | 70   | 90   | pF       |

Note 1. Rated input/output frequency : 5MHz

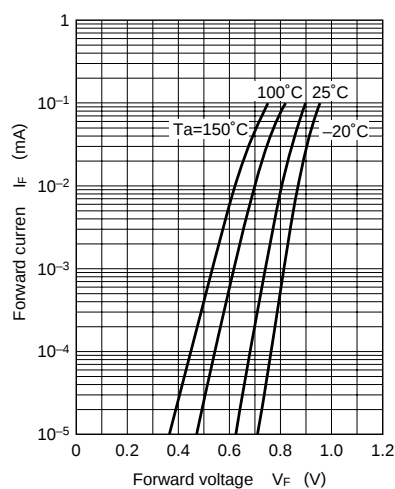
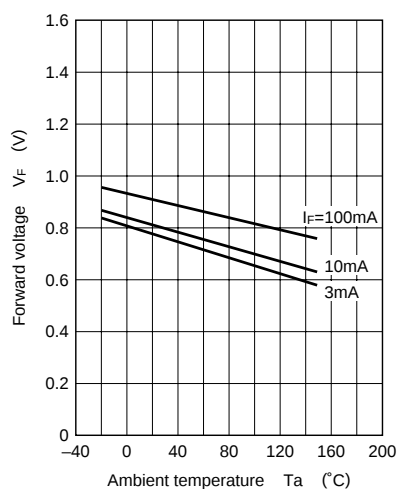
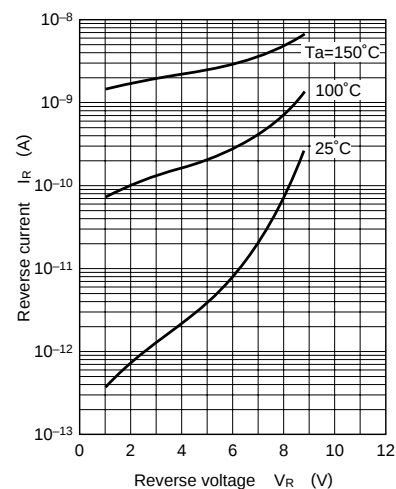
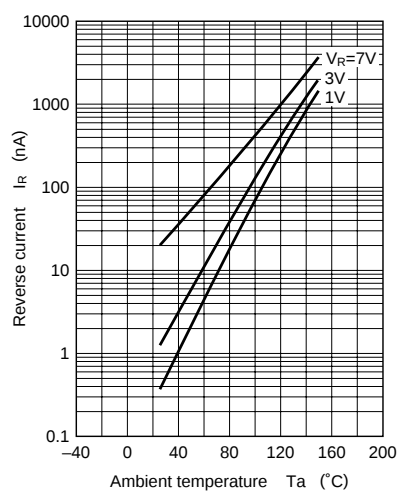
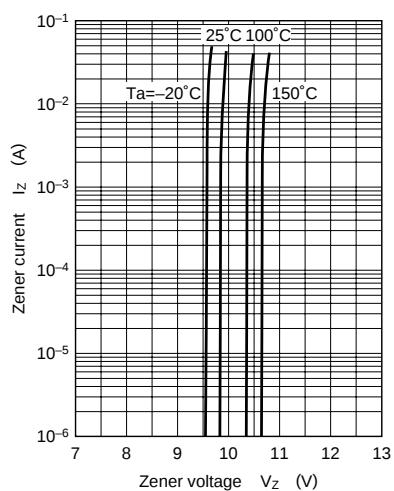
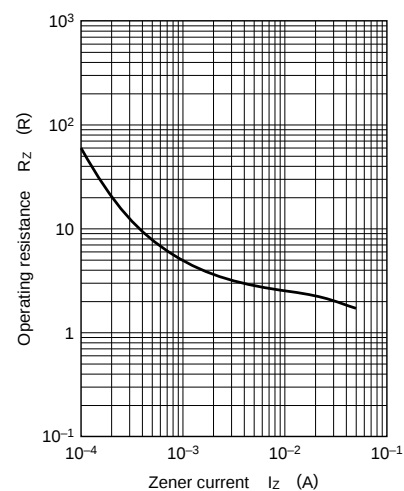
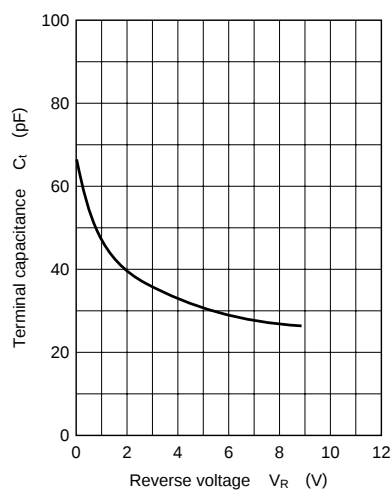
2. \*1 : The  $V_Z$  value is for the temperature of 25°C. In other cases, carry out the temperature compensation.

\*2 : Guaranteed at 20ms after power application

\*3 :  $T_j= 25$  to  $125^\circ C$

### ■ Marking



$I_F - V_F$  $V_F - T_a$  $I_R - V_R$  $I_R - T_a$  $I_Z - V_Z$  $R_Z - I_Z$  $C_t - V_R$  $P_{ZSM} - t_w$ 