

MA3A100

Silicon planer type

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

■ Features

- Mini type package (6-pin)
- Three-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 |
| | Triple | $I_{F(AV)}$ | 70 | mA |
| Instantaneous forward current | Single | I_{FRM} | 200 | mA |
| | Triple | I_{FRM} | 100 | mA |
| Total power dissipation | Single | P_{tot}^{*1} | 200 | mW |
| | Triple | P_{tot}^{*1} | 100 | mW |
| Non-repetitive reverse surge power dissipation | P_{ZSM}^{*2} | 15 | W | |
| Junction temperature | T_j | 150 | °C | |
| Storage temperature | T_{stg} | - 55 to + 150 | °C | |

*1 With a printed-circuit board

*2 $t=100\mu s$, $T_j=150^\circ C$

■ 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 | Ω |
| | R_Z | $I_Z=5mA$ | | 8 | 20 | Ω |
| Reverse current | I_{R1} | $V_R=7V$ | | | 0.2 | μA |
| | I_{R2} | $V_R=8.9V$ | | | 60 | μA |
| Temperature coefficient of zener voltage | S_Z^{*3} | $I_Z=5mA$ | 4.5 | 6.4 | 8.0 | mV/°C |

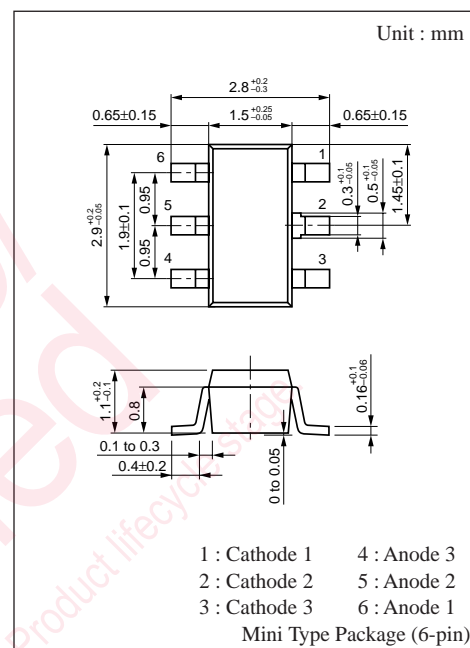
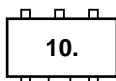
Note 1. Rated input/output frequency : 5MHz

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

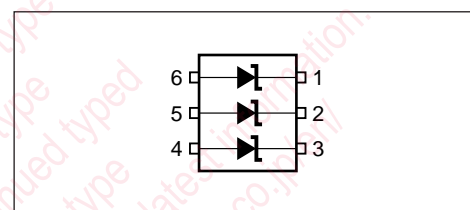
*2 : Guaranteed at 20ms after power application

*3 : $T_j=25$ to $150^\circ C$

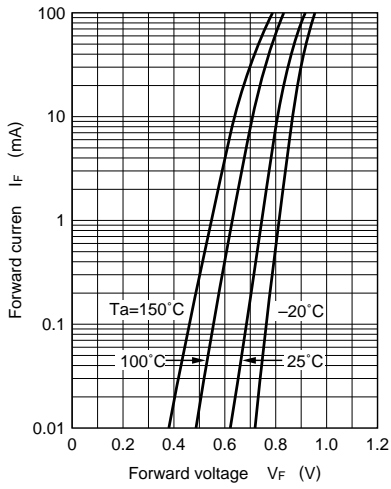
■ Marking



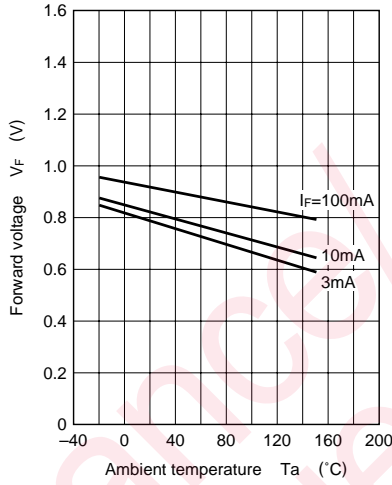
■ Internal Connection



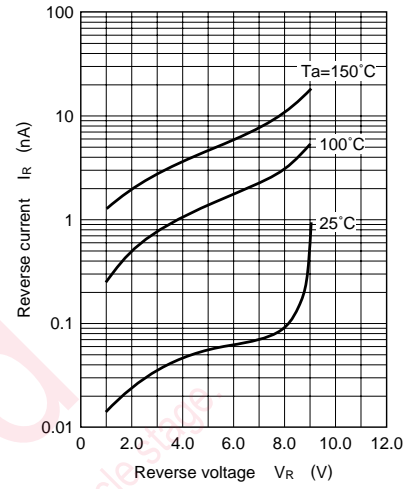
$I_F - V_F$



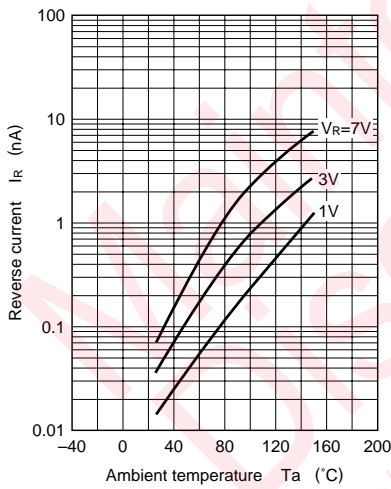
$V_F - T_a$



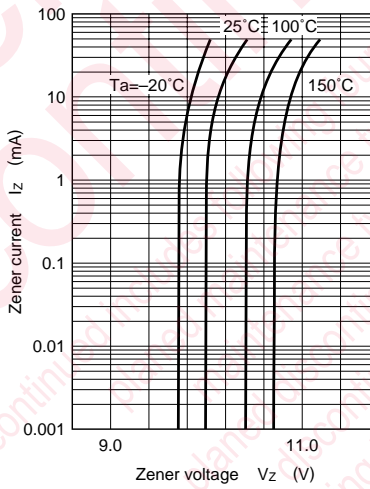
$I_R - V_R$



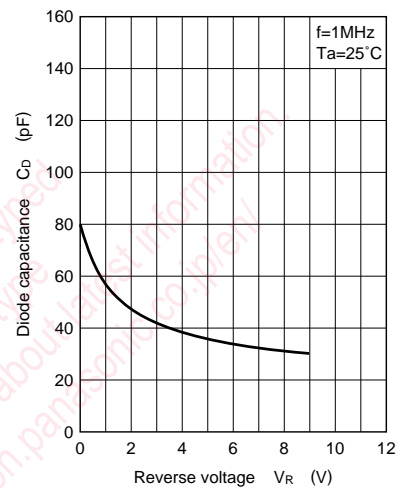
$I_R - T_a$



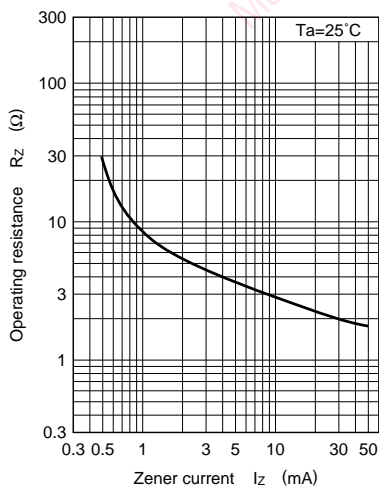
$I_Z - V_Z$



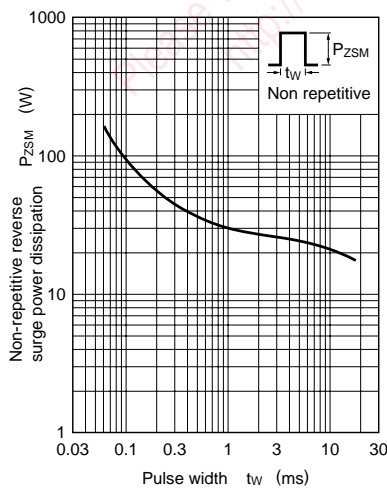
$C_D - V_R$



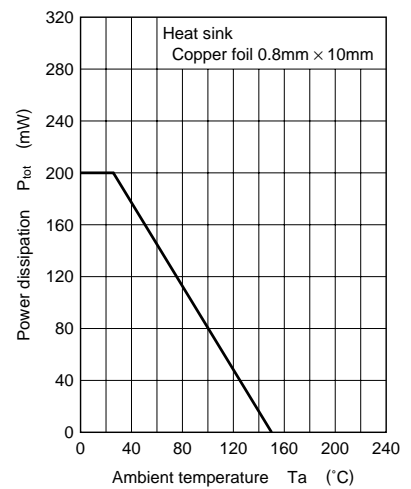
$R_Z - I_Z$



$P_{ZSM} - t_w$



$P_{tot} - T_a$



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