

# MA3D654 (MA6D54)

Silicon planar type (cathode common)

For high-frequency rectification

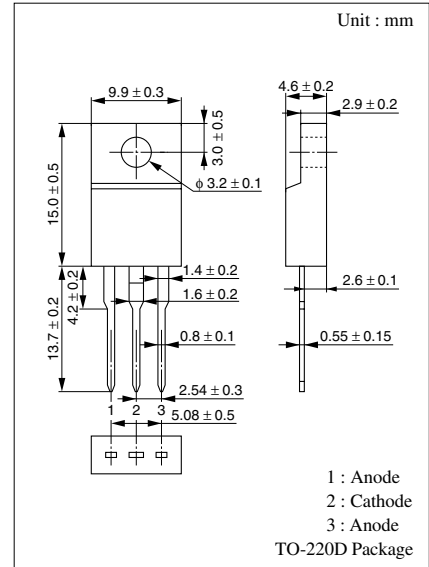
## ■ Features

- Low forward rise voltage  $V_F$
- Fast reverse recovery time  $t_{rr}$
- TO-220D (Full-pack package) with high dielectric breakdown voltage  $> 5.0$  kV
- Easy-to-mount, caused by its V cut lead end

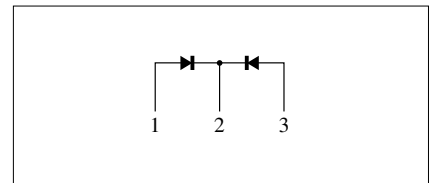
## ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                                  | Symbol      | Rating      | Unit             |
|--|-------------|-------------|------------------|
| Repetitive peak reverse voltage            | $V_{RRM}$   | 300         | V                |
| Non-repetitive peak reverse surge voltage  | $V_{RSM}$   | 300         | V                |
| Average forward current                    | $I_{F(AV)}$ | 10          | A                |
| Non-repetitive peak forward surge current* | $I_{FSM}$   | 60          | A                |
| Junction temperature                       | $T_j$       | -40 to +150 | $^\circ\text{C}$ |
| Storage temperature                        | $T_{stg}$   | -40 to +150 | $^\circ\text{C}$ |

Note) \* : Half sine-wave; 10 ms/cycle



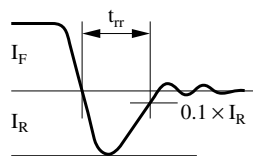
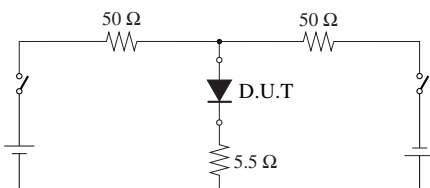
## Internal Connection



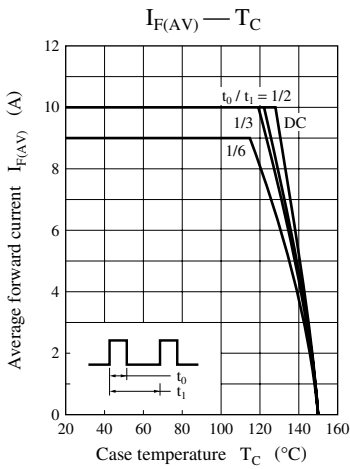
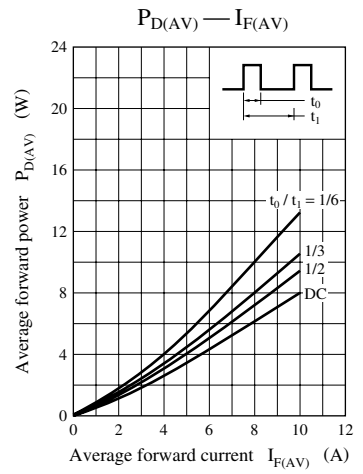
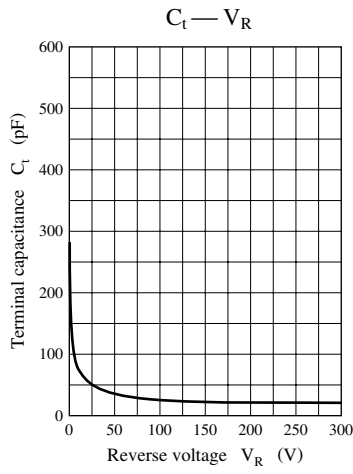
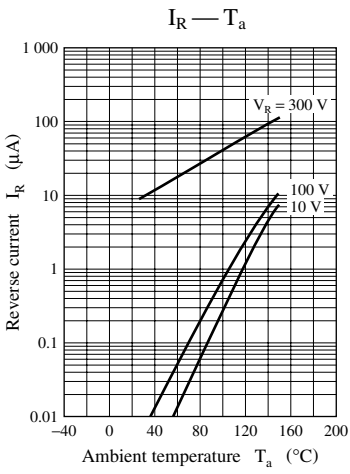
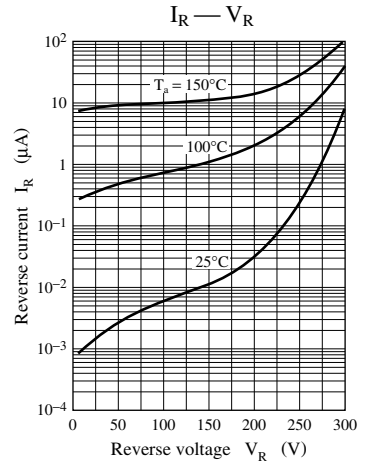
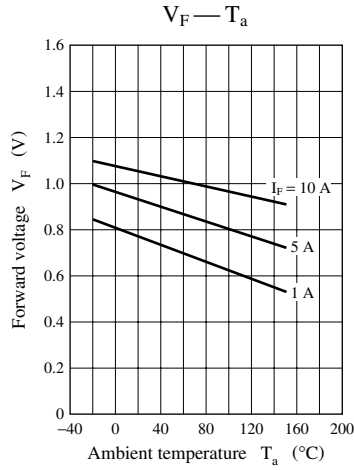
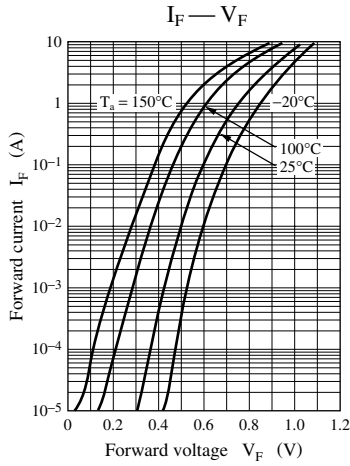
## ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                       | Symbol        | Conditions                                   | Min | Typ | Max  | Unit                      |
|---------------------------------|---------------|--|-----|-----|------|---------------------------|
| Repetitive peak reverse current | $I_{RRM1}$    | $V_{RRM} = 300$ V, $T_C = 25^\circ\text{C}$  |     |     | 20   | $\mu\text{A}$             |
|                                 | $I_{RRM2}$    | $V_{RRM} = 300$ V, $T_j = 150^\circ\text{C}$ |     |     | 2    | mA                        |
| Forward voltage (DC)            | $V_F$         | $I_F = 5$ A, $T_C = 25^\circ\text{C}$        |     |     | 0.98 | V                         |
| Reverse recovery time*          | $t_{rr}$      | $I_F = 1$ A, $I_R = 1$ A                     |     |     | 50   | ns                        |
| Thermal resistance              | $R_{th(j-c)}$ |  |     |     | 3    | $^\circ\text{C}/\text{W}$ |
|                                 | $R_{th(j-a)}$ |  |     |     | 63   | $^\circ\text{C}/\text{W}$ |

- Note) 1. Rated input/output frequency: 10 MHz  
 2. Tightening torque-max. 8 kg  $\times$  cm  
 3. \* :  $t_{rr}$  measuring circuit



Note) The part number in the parenthesis shows conventional part number.



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