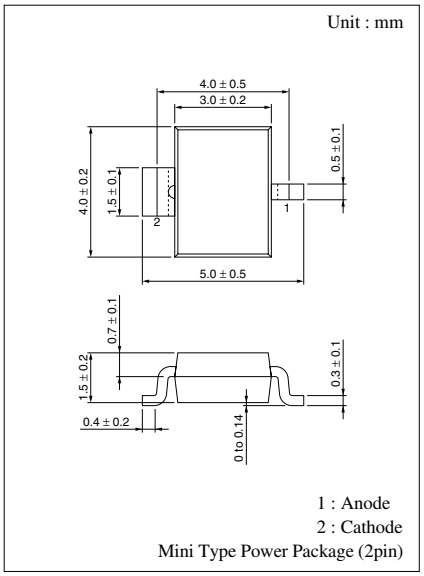
# MA2P701, MA2P701A

## Silicon epitaxial planar type

For high-frequency rectification




### ■ Features

- Low forward rise voltage $V_F$, optimum for low-voltage rectification
- Optimum for high-frequency rectification because of its short reverse recovery time ($t_{rr}$)
- Allowing large-current rectification in spite of its small-size because of its low thermal resistance ($R_{th(j-a)}$)

Marking Symbol

- MA2P701 : 701
- MA2P701A : 701A

### ■ Absolute Maximum Ratings $T_a = 25°C$

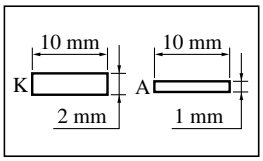
| Parameter | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Reverse voltage (DC) | MA2P701 | $V_R$ | 20 | V |
| | MA2P701A | | 40 | |
| Repetitive peak reverse voltage | MA2P701 | $V_{RRM}$ | 20 | V |
| | MA2P701A | | 40 | |
| Peak forward current | | $I_{FM}$ | 2 | A |
| Average forward current*1 | | $I_{F(AV)}$ | 1 | A |
| Non-repetitive peak forward surge current*2 | | $I_{FSM}$ | 6 | A |
| Junction temperature | | $T_j$ | 125 | °C |
| Storage temperature | | $T_{stg}$ | −55 to +125 | °C |

Note) *1 : With a printed-circuit board (copper foil area cathode side)
2 mm × 10 mm or more (copper foil area anode side)
1 mm × 10 mm or more. Board thickness t = 1.6 mm
*2 : The peak-to-peak value in one cycle of 50 Hz sine-wave (non-repetitive)

### ■ Electrical Characteristics $T_a = 25°C$

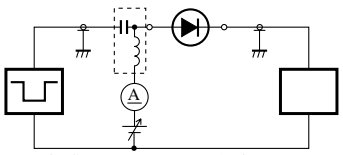
| Parameter | | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Reverse current (DC) | MA2P701 | $I_R$ | $V_R$ = 20 V | | | 1 | mA |
| | MA2P701A | | $V_R$ = 40 V | | | 2 | |
| Forward voltage (DC) | | $V_F$ | $I_F$ = 1.0 A | | | 0.55 | V |
| Terminal capacitance | | $C_t$ | $V_R$ = 0 V, f = 1 MHz | | 210 | | pF |
| Reverse recovery time*2 | | $t_{rr}$ | $I_F = I_R$ = 100 mA<br>$I_{rr}$ = 10 mA, $R_L$ = 100 Ω | | 14 | | ns |
| High voltage rectification*1 | | $R_{th(j-a)}$ | | | 0.15 | | °C/mW |

Note) 1. Schottky barrier diode is sensitive to electric shock (static electricity, etc.). Due attention must be paid on the charge of a human body and the leakage of current from the operating equipment
2. Rated input/output frequency: 150 MHz
3. *1 : With a printed-circuit board (copper foil area cathode side)
2 mm × 10 mm or more (copper foil area anode side)
1 mm × 10 mm or more. Board thickness t = 1.6 mm
*2 : $t_{rr}$ measuring instrument



## Common characteristics charts

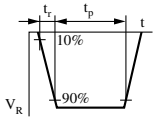
Bias Application Unit N-50BU




Pulse Generator
(PG-10N)
$R_s$ = 50 Ω

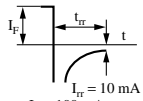
W.F.Analyzer
(SAS-8130)
$R_i$ = 50 Ω

Input Pulse




$t_p$ = 2 µs
$t_r$ = 0.35 ns
δ = 0.05

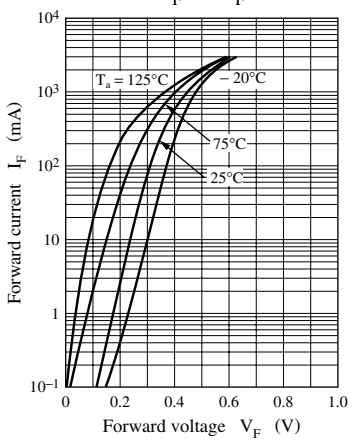
Output Pulse



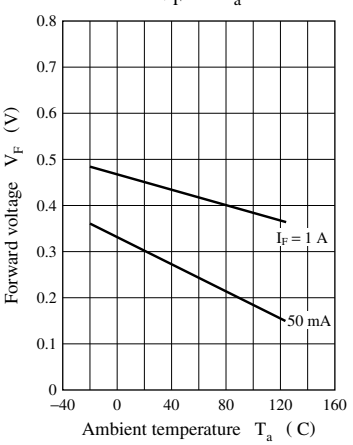

$I_F$ = 100 mA
$I_R$ = 100 mA
$R_L$ = 100 Ω

$t_{rr}$ measuring instrument

$I_F$ — $V_F$

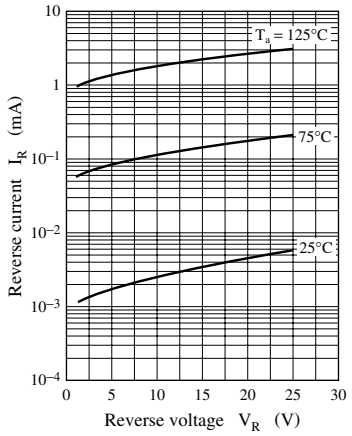



$V_F$ — $T_a$

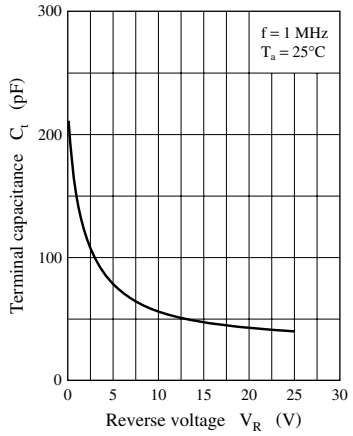



## Characteristics charts of MA2P701

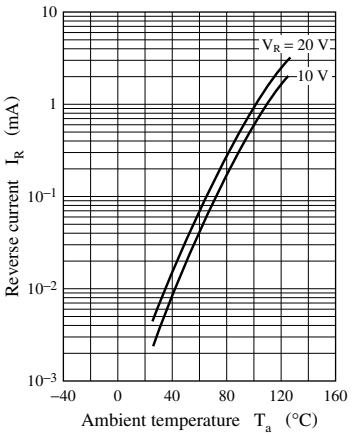
$I_R$ — $V_R$




$C_t$ — $V_R$

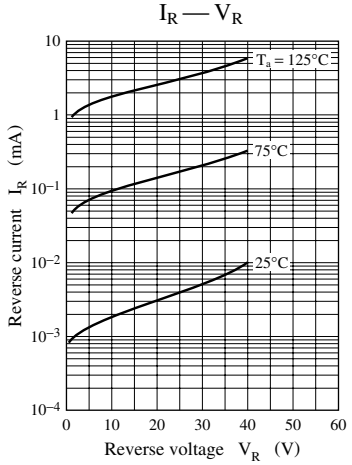



$I_R$ — $T_a$

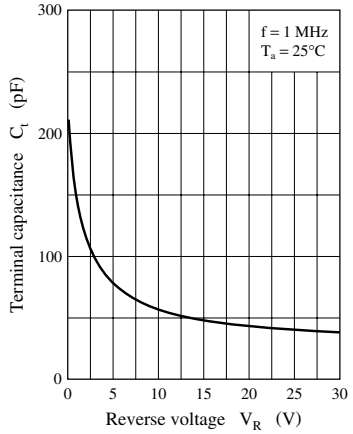



## Characteristics charts of MA2P701A

$I_R$ — $V_R$




$C_t$ — $V_R$




$I_R$ — $T_a$