# MA3X157A

## Silicon epitaxial planar type
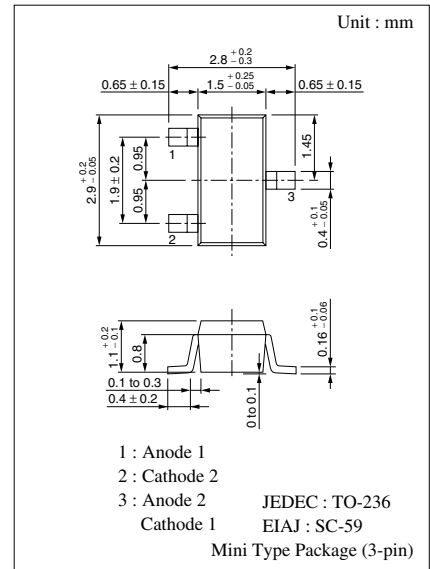
For switching circuits

### ■ Features

- High switching speed
- Small terminal capacitance, $C_t$
- Both chips have even characteristics
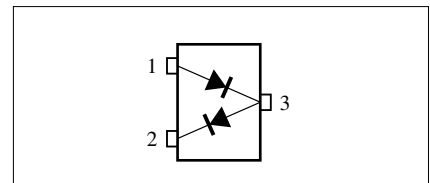- Can be connected in series

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

| Parameter | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Reverse voltage (DC) | | $V_R$ | 80 | V |
| Peak reverse voltage | | $V_{RM}$ | 80 | V |
| Forward current (DC) | Single | $I_F$ | 100 | mA |
| | Series | | 65 | |
| Repetitive peak forward current | Single | $I_{FRM}$ | 225 | mA |
| | Series | | 145 | |
| Non-repetitive peak forward surge current[*] | Single | $I_{FSM}$ | 500 | mA |
| | Series | | 325 | |
| Junction temperature | | $T_j$ | 150 | °C |
| Storage temperature | | $T_{stg}$ | −55 to +150 | °C |

Note) * : t = 1 s

Unit : mm



1 : Anode 1
2 : Cathode 2
3 : Anode 2
   Cathode 1

JEDEC : TO-236
EIAJ : SC-59
Mini Type Package (3-pin)

Marking Symbol: MS

Internal Connection



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

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse current (DC) | $I_R$ | $V_R = 75$ V | | | 0.1 | μA |
| Forward voltage (DC) | $V_F$ | $I_F = 100$ mA | | | 1.2 | V |
| Reverse voltage (DC) | $V_R$ | $I_R = 100$ μA | 80 | | | V |
| Terminal capacitance | $C_t$ | $V_R = 0$ V, f = 1 MHz | | | 2 | pF |
| Reverse recovery time[*] | $t_{rr}$ | $I_F = 10$ mA, $V_R = 6$ V $I_{rr} = 0.1 \cdot I_R$, $R_L = 100$ Ω | | | 3 | ns |

Note)  1.  Rated input/output frequency: 100 MHz

2.  * : $t_{rr}$ measuring circuit



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
$\delta = 0.05$

Output Pulse

$I_{rr} = 0.1 \cdot I_R$
$I_F = 10$ mA
$V_R = 6$ V
$R_L = 100$ Ω

## $I_F$ — $V_F$

Forward current $I_F$ (mA) vs Forward voltage $V_F$ (V)

$T_a$ = 125°C
75°C
25°C
−20°C

## $I_R$ — $V_R$

Reverse current $I_R$ (μA) vs Reverse voltage $V_R$ (V)

$T_a$ = 125°C
75°C
25°C

## $V_F$ — $T_a$

Forward voltage $V_F$ (V) vs Ambient temperature $T_a$ (°C)

$I_F$ = 10 mA
3 mA
1 mA
0.1 mA

## $I_R$ — $T_a$

Reverse current $I_R$ (μA) vs Ambient temperature $T_a$ (°C)

$V_R$ = 80 V
40 V

## $C_t$ — $V_R$

Terminal capacitance $C_t$ (pF) vs Reverse voltage $V_R$ (V)

f = 1 MHz
$T_a$ = 25°C