

# 2SC5591

## Silicon NPN triple diffusion mesa type

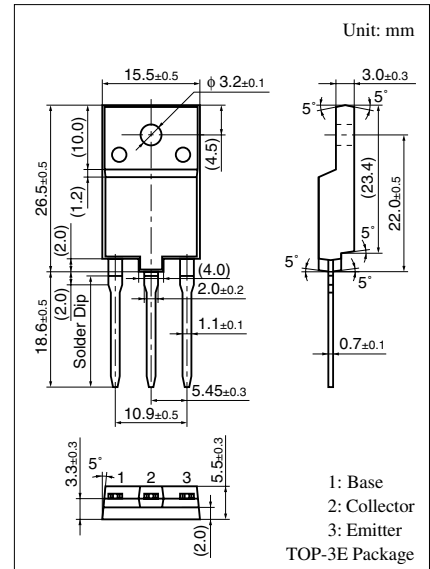
For horizontal deflection output

### ■ Features

- High breakdown voltage: 1 700 V; supporting a large screen CRT and wider visible angle
- High-speed switching:  $t_f < 0.2 \mu\text{s}$
- Low Collector to emitter saturation voltage:  $V_{CE(sat)} < 3 \text{ V}$
- Wide area of safe operation (ASO)

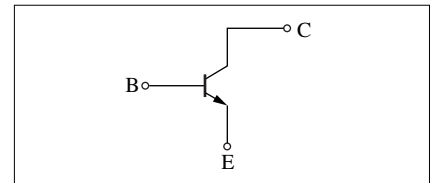
### ■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

| Parameter                    | Symbol    | Rating                   | Unit             |   |
|------------------------------|-----------|--------------------------|------------------|---|
| Collector to base voltage    | $V_{CBO}$ | 1 700                    | V                |   |
| Collector to emitter voltage | $V_{CES}$ | 1 700                    | V                |   |
|                              | $V_{CEO}$ | 600                      | V                |   |
| Emitter to base voltage      | $V_{EBO}$ | 7                        | V                |   |
| Peak collector current       | $I_{CP}$  | 30                       | A                |   |
| Collector current            | $I_C$     | 20                       | A                |   |
| Base current                 | $I_B$     | 11                       | A                |   |
| Collector power dissipation  | $P_C$     | $T_C = 25^\circ\text{C}$ | 70               | W |
|                              |           | $T_a = 25^\circ\text{C}$ | 3.5              |   |
| Junction temperature         | $T_j$     | 150                      | $^\circ\text{C}$ |   |
| Storage temperature          | $T_{stg}$ | -55 to +150              | $^\circ\text{C}$ |   |



Marking Symbol: C5591

Internal Connection



### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter                               | Symbol        | Conditions  | Min | Typ | Max | Unit          |
|---|---------------|---|-----|-----|-----|---------------|
| Collector cutoff current                | $I_{CBO}$     | $V_{CB} = 1\ 000 \text{ V}, I_E = 0$                              |     |     | 50  | $\mu\text{A}$ |
|   |               | $V_{CB} = 1\ 700 \text{ V}, I_E = 0$                              |     |     | 1   | mA            |
| Emitter cutoff current                  | $I_{EBO}$     | $V_{EB} = 7 \text{ V}, I_C = 0$                                   |     |     | 50  | $\mu\text{A}$ |
| Forward current transfer ratio          | $h_{FE}$      | $V_{CE} = 5 \text{ V}, I_C = 10 \text{ A}$                        | 6   |     | 12  |               |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 10 \text{ A}, I_B = 2.5 \text{ A}$                         |     |     | 3   | V             |
| Base to emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 10 \text{ A}, I_B = 2.5 \text{ A}$                         |     |     | 1.5 | V             |
| Transition frequency                    | $f_T$         | $V_{CE} = 10 \text{ V}, I_C = 0.1 \text{ A}, f = 0.5 \text{ MHz}$ |     | 3   |     | MHz           |
| Storage time                            | $t_{stg}$     | $I_C = 10 \text{ A}, \text{Resistance loaded}$                    |     |     | 3.0 | $\mu\text{s}$ |
| Fall time                               | $t_f$         | $I_{B1} = 2.5 \text{ A}, I_{B2} = -5.0 \text{ A}$                 |     |     | 0.2 | $\mu\text{s}$ |

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