# Silicon NPN Power Transistors 2SD1591

## DESCRIPTION

- With TO-220Fa package
- DARLINGTON
- Complement to type 2SB1100

## APPLICATIONS

- Low frequency power amplification
- Low speed power switching applications

**PINNING**

| PIN | DESCRIPTION |
|---|---|
| 1 | Base |
| 2 | Collector |
| 3 | Emitter |

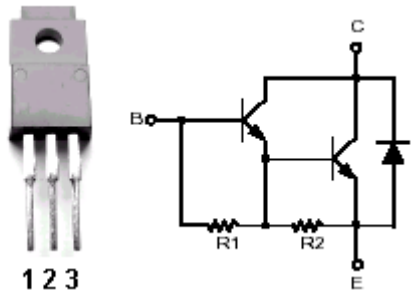



**Fig.1 simplified outline (TO-220Fa) and symbol**

## ABSOLUTE MAXIMUM RATINGS AT Tc=25℃

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | Open emitter | 150 | V |
| $V_{CEO}$ | Collector-emitter voltage | Open base | 100 | |
| $V_{EBO}$ | Emitter-base voltage | Open collector | 7 | V |
| $I_C$ | Collector current (DC) | | 10 | A |
| $I_{CM}$ | Collector current-Peak | | 15 | A |
| $I_B$ | Base current (DC) | | 0.5 | A |
| $P_C$ | Collector power dissipation | $T_a$=25℃ | 2 | W |
| | | $T_C$=25℃ | 30 | |
| $T_j$ | Junction temperature | | 150 | ℃ |
| $T_{stg}$ | Storage temperature | | -55~150 | ℃ |

# Silicon NPN Power Transistors 2SD1591

## CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | $I_C$=0.1A ; $I_B$=0 | 100 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | $I_C$=10A; $I_B$=25mA | | | 1.5 | V |
| $V_{BEsat}$ | Emitter-base saturation voltage | $I_C$=10A; $I_B$=25mA | | | 2.0 | V |
| $I_{CBO}$ | Collector cut-off current | $V_{CB}$=100V; $I_E$=0 | | | 10 | μA |
| $I_{CEO}$ | Collector cut-off current | $V_{CE}$=100V; $I_E$=0 | | | 500 | μA |
| $I_{EBO}$ | Emitter cut-off current | $V_{EB}$=7V ;$I_C$=0 | | | 5 | mA |
| $h_{FE}$ | DC current gain | $I_C$=10A ; $V_{CE}$=2V | 1000 | | 30000 | |

# Silicon NPN Power Transistors 2SD1591

**PACKAGE OUTLINE**

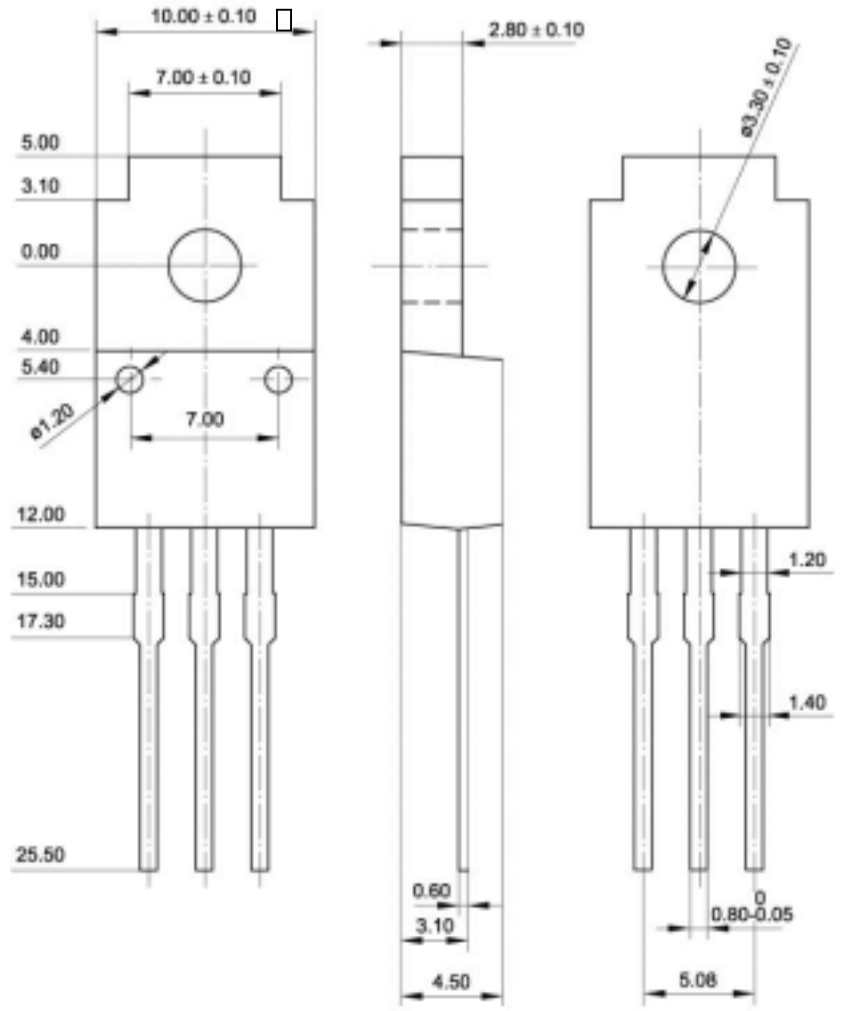



**Fig.2 Outline dimensions (unindicated tolerance:±0.15 mm)**