# Silicon NPN Power Transistors 2SD478



## DESCRIPTION

·With TO-220C package

·Complement to type 2SB568

## APPLICATIONS

·Low frequency high voltage power amplifier TV vertical deflection output

**PINNING**

| PIN | DESCRIPTION |
|---|---|
| 1 | Base |
| 2 | Collector;connected to mounting base |
| 3 | Emitter |

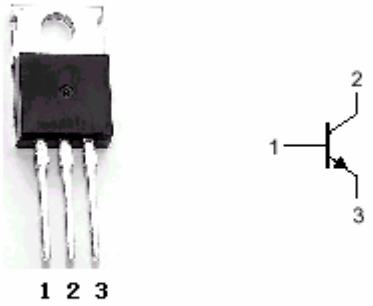


Fig.1 simplified outline (TO-220C) and symbol

## Absolute maximum ratings(Ta=25□)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | Open emitter | 200 | V |
| $V_{CEO}$ | Collector-emitter voltage | Open base | 150 | V |
| $V_{EBO}$ | Emitter-base voltage | Open collector | 6 | V |
| $I_C$ | Collector current | | 2 | A |
| $I_{CM}$ | Collector current-peak | | 5 | A |
| $P_C$ | Collector power dissipation | $T_a$=25□ | 1.8 | W |
| | | $T_C$=25□ | 30 | |
| $T_j$ | Junction temperature | | 150 | □ |
| $T_{stg}$ | Storage temperature | | -45~150 | □ |

## CHARACTERISTICS

**Tj=25□ unless otherwise specified**



| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | $I_C$=50mA; $R_{BE}$=∞ | 150 | | | V |
| $V_{(BR)EBO}$ | Emitter-base breakdown votage | $I_E$=5mA; $I_C$=0 | 6 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | $I_C$=0.5 A;$I_B$=50m A | | | 3.0 | V |
| $V_{BE}$ | Base-emitter voltage | $I_C$=50mA ; $V_{CE}$=4V | | | 1.0 | V |
| $I_{CBO}$ | Collector cut-off current | $V_{CB}$=120V; $I_E$=0 | | | 1.0 | μA |
| $I_{EBO}$ | Emitter cut-off current | $V_{EB}$=4V; $I_C$=0 | | | 1.0 | μA |
| $h_{FE-1}$ | DC current gain | $I_C$=50mA ; $V_{CE}$=4V | 60 | | 320 | |
| $h_{FE-2}$ | DC current gain | $I_C$=0.5A ; $V_{CE}$=10V | 60 | | | |

◆ **$h_{FE-1}$ classifications**

| B | C | D |
|---|---|---|
| 60-120 | 100-200 | 160-320 |

**PACKAGE OUTLINE**



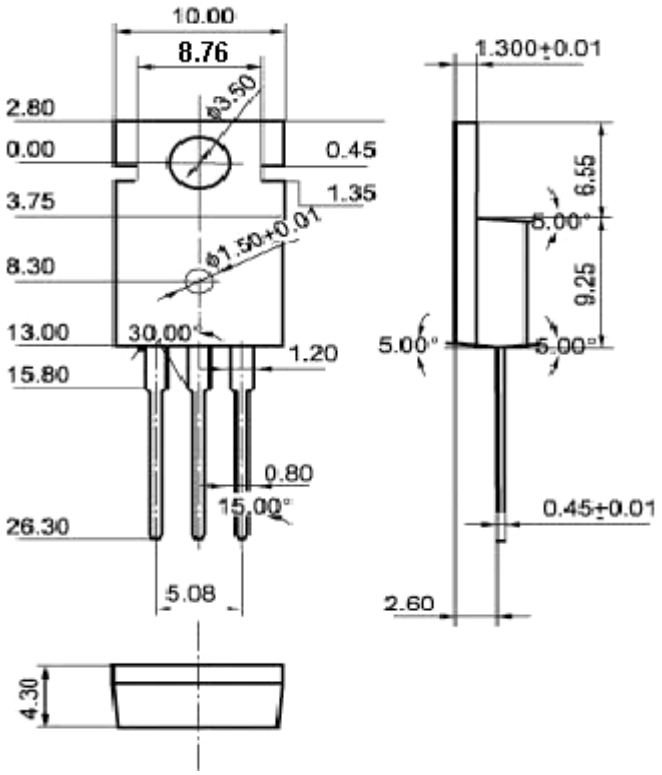


**Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)**