Ordering number:EN590B

NPN Epitaxial Planar Silicon Transistor

# 2SD894

## 25V/1.5A Driver Applications

## Use

· Motor drive, printer hummer drive, relay drive, voltage regulator controller.

## Features

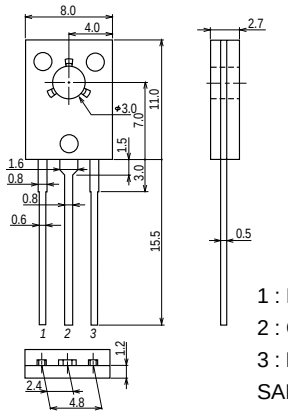
· High DC Current Gain (not less than 4000).
· Wide ASO.
· Low saturation voltage (1.5V max).
· Large power rating ($P_C$=10W).

## Package Dimensions

unit:mm

2009A

[2SD894]




1 : Emitter
2 : Collector
3 : Base
SANYO : TO-126

## Specifications

### Absolute Maximum Ratings at Ta = 25˚C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Collector-to-Base Voltage | $V_{CBO}$ | | 30 | V |
| Collector-to-Emitter Voltage | $V_{CEO}$ | | 25 | V |
| Emitter-to-Base Voltage | $V_{EBO}$ | | 10 | V |
| Collector Current | $I_C$ | | 1.5 | A |
| Collector Current (Pulse) | $I_{CP}$ | | 2.5 | A |
| Collector Dissipation | $P_C$ | | 1 | W |
| | | Tc=25˚C | 10 | W |
| Junction Temperature | Tj | | 150 | ˚C |
| Storage Temperature | Tstg | | –55 to +150 | ˚C |

### Electrical Characteristics at Ta = 25˚C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=20V, $I_E$=0 | | | 1 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=8V, $I_C$=0 | | | 1 | μA |
| DC Current Gain | $h_{FE}1$ | $V_{CE}$=2V, $I_C$=500mA | 4000 | | | |
| | $h_{FE}2$ | $V_{CE}$=2V, $I_C$=10mA | 3000 | | | |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}$=10V, $I_C$=50mA | | 120 | | MHz |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=600mA, $I_B$=0.15mA | | | 1.5 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=600mA, $I_B$=0.15mA | | | 2.0 | V |

Continued on next page.



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Continued from preceding page.

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=10μA, $I_E$=0 | 30 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=1mA, $R_{BE}$=∞ | 25 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=10μA, $I_C$=0 | 10 | | | V |

## Equivalent Circuit