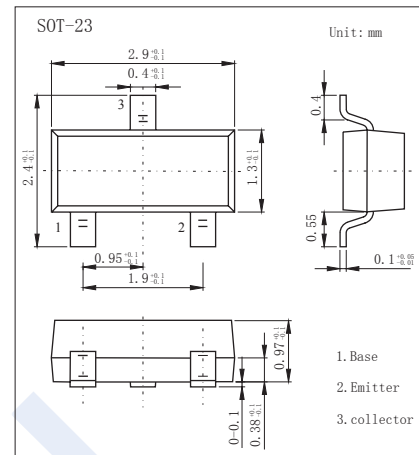


NPN Transistors

2SD596

■ Features

- High DC Current gain.
- Complimentary to 2SB624

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

| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|------------|------------------|
| Collector - Base Voltage | V_{CB0} | 30 | V |
| Collector - Emitter Voltage | V_{CE0} | 25 | |
| Emitter - Base Voltage | V_{EB0} | 5 | |
| Collector Current - Continuous | I_C | 700 | mA |
| Collector Power Dissipation | P_C | 200 | mW |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 to 150 | |

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---------------|---|-----|-----|-----|------|
| Collector- base breakdown voltage | V_{CB0} | $I_C = 100 \mu\text{A}$, $I_E = 0$ | 30 | | | V |
| Collector- emitter breakdown voltage | V_{CE0} | $I_C = 1 \text{ mA}$, $I_B = 0$ | 25 | | | |
| Emitter - base breakdown voltage | V_{EB0} | $I_E = 100 \mu\text{A}$, $I_C = 0$ | 5 | | | |
| Collector-base cut-off current | I_{CB0} | $V_{CB} = 30 \text{ V}$, $I_E = 0$ | | | 100 | nA |
| Emitter cut-off current | I_{EB0} | $V_{EB} = 5 \text{ V}$, $I_C = 0$ | | | 100 | |
| Collector-emitter saturation voltage (Note.1) | $V_{CE(sat)}$ | $I_C = 700 \text{ mA}$, $I_B = 70 \text{ mA}$ | | | 0.6 | V |
| Base - emitter saturation voltage (Note.1) | $V_{BE(sat)}$ | $I_C = 700 \text{ mA}$, $I_B = 70 \text{ mA}$ | | | 1.2 | |
| Base - emitter voltage (Note.1) | V_{BE} | $V_{CE} = 6 \text{ V}$, $I_C = 10 \text{ mA}$ | 0.6 | | 0.7 | |
| DC current gain (Note.1) | $h_{FE(1)}$ | $V_{CE} = 1 \text{ V}$, $I_C = 100 \text{ mA}$ | 110 | | 400 | |
| | $h_{FE(2)}$ | $V_{CE} = 1 \text{ V}$, $I_C = 700 \text{ mA}$ | 50 | | | |
| Collector output capacitance | C_{ob} | $V_{CB} = 6 \text{ V}$, $I_E = 10 \text{ mA}$, $f = 10 \text{ MHz}$ | | 12 | | pF |
| Transition frequency | f_T | $V_{CE} = 6 \text{ V}$, $I_C = 10 \text{ mA}$ | 170 | | | MHz |

Note.1: Pulse test : Pulse width $\leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$.

■ Classification of $h_{FE(1)}$

| Type | 2SD596-DV1 | 2SD596-DV2 | 2SD596-DV3 | 2SD596-DV4 | 2SD596-DV5 |
|---------|------------|------------|------------|------------|------------|
| Range | 110-180 | 135-220 | 170-270 | 200-320 | 250-400 |
| Marking | DV1 | DV2 | DV3 | DV4 | DV5 |

NPN Transistors

2SD596

■ Typical Characteristics

