

PNP SILICON POWER TRANSISTOR 2SB772

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DESCRIPTION

The 2SB772 is PNP silicon transistor suited for the output stage of 3 W audio amplifier, voltage regulator, DC-DC converter and relay driver.

FEATURES

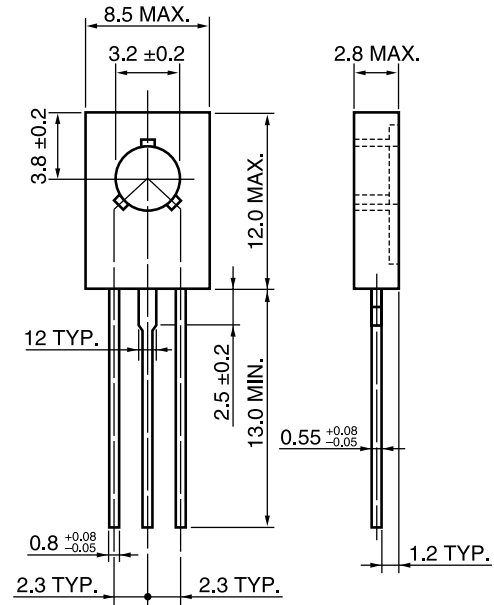
- Low saturation voltage
 $V_{CE(sat)} \leq -0.5 \text{ V}$ ($I_C = -2 \text{ A}$, $I_B = -0.2 \text{ A}$)
- Excellent h_{FE} linearity and high h_{FE}
 $h_{FE} = 60$ to 400 ($V_{CE} = -2 \text{ V}$, $I_C = -1 \text{ A}$)
- Less cramping space required due to small and thin package and reducing the trouble for attachment to a radiator.
 No insulator bushing required.

ABSOLUTE MAXIMUM RATINGS

| | |
|--|---------------|
| Maximum Temperature | |
| Storage Temperature | -55 to +150°C |
| Junction Temperature | 150°C Maximum |
| Maximum Power Dissipation | |
| Total Power Dissipation ($T_A = 25^\circ\text{C}$) | 1.0 W |
| Total Power Dissipation ($T_C = 25^\circ\text{C}$) | 10 W |
| Maximum Voltages and Currents ($T_A = 25^\circ\text{C}$) | |
| V_{CBO} Collector to Base Voltage | -40 V |
| V_{CEO} Collector to Emitter Voltage | -30 V |
| V_{EBO} Emitter to Base Voltage | -5.0 V |
| $I_{C(DC)}$ Collector Current (DC) | -3.0 A |
| $I_{C(pulse)}$ ^{Note} Collector Current (pulse) | -7.0 A |

Note Pulse Test $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

★ PACKAGE DRAWING (Unit: mm)



- 1: Emitter
- 2: Collector: connected to mounting plane
- 3: Base

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|------------------------------|---------------|---|------|------|------|---------------|
| DC Current Gain | h_{FE1} | $V_{CE} = -2.0 \text{ V}$, $I_C = -20 \text{ mA}$ ^{Note} | 30 | 220 | | |
| DC Current Gain | h_{FE2} | $V_{CE} = -2.0 \text{ V}$, $I_C = -1.0 \text{ mA}$ ^{Note} | 60 | 160 | 400 | |
| Gain Bandwidth Product | f_T | $V_{CE} = -5.0 \text{ V}$, $I_C = -0.1 \text{ A}$ | | 80 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = -10 \text{ V}$, $I_E = 0$, $f = 1.0 \text{ MHz}$ | | 55 | | pF |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = -30 \text{ V}$, $I_E = 0 \text{ A}$ | | | -1.0 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = -3.0 \text{ V}$, $I_C = 0 \text{ A}$ | | | -1.0 | μA |
| Collector Saturation Voltage | $V_{CE(sat)}$ | $I_C = -2.0 \text{ A}$, $I_B = -0.2 \text{ A}$ ^{Note} | | -0.3 | -0.5 | V |
| Base Saturation Voltage | $V_{BE(sat)}$ | $I_C = -2.0 \text{ A}$, $I_B = -0.2 \text{ A}$ ^{Note} | | -1.0 | -2.0 | V |

Note Pulse Test: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

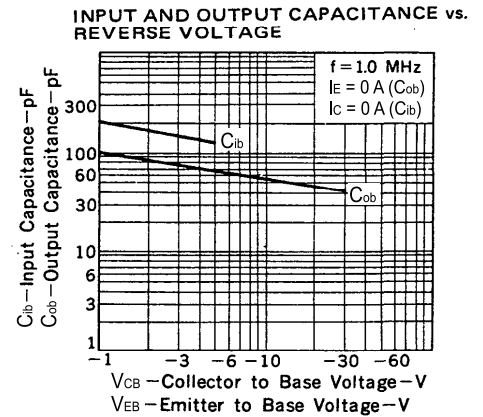
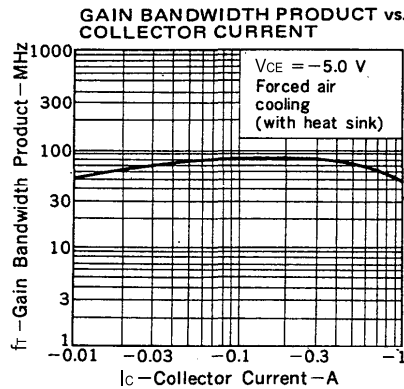
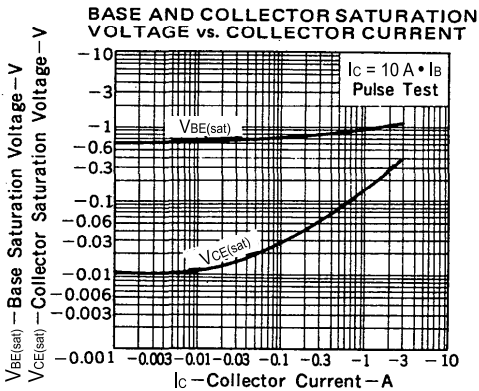
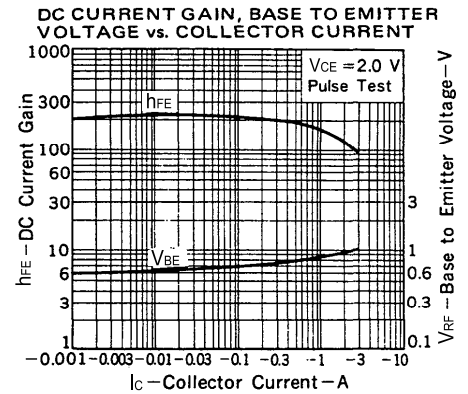
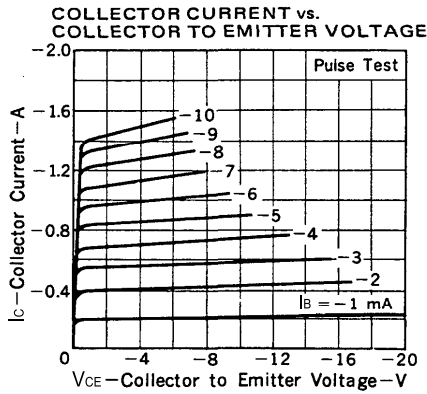
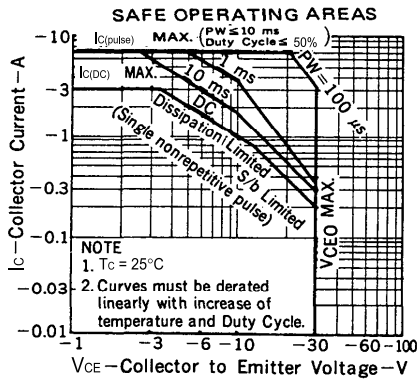
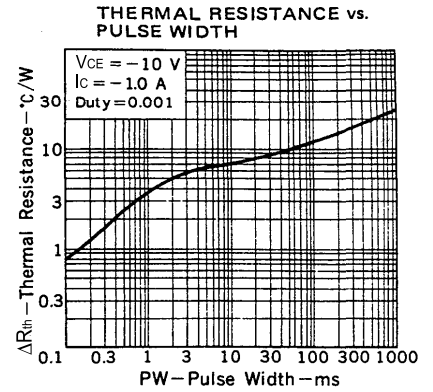
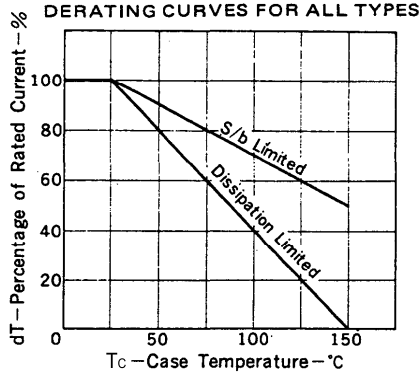
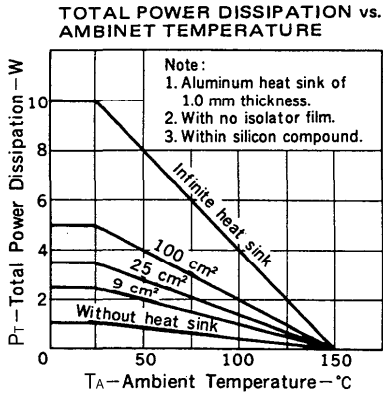
CLASSIFICATION OF h_{FE}

| Rank | R | Q | P | E |
|-------|-----------|------------|------------|------------|
| Range | 60 to 120 | 100 to 200 | 160 to 320 | 200 to 400 |

Remark Test Conditions: $V_{CE} = -2.0 \text{ V}$, $I_C = 1.0 \text{ A}$

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TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise noted.)



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