

PNP SILICON POWER TRANSISTOR

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

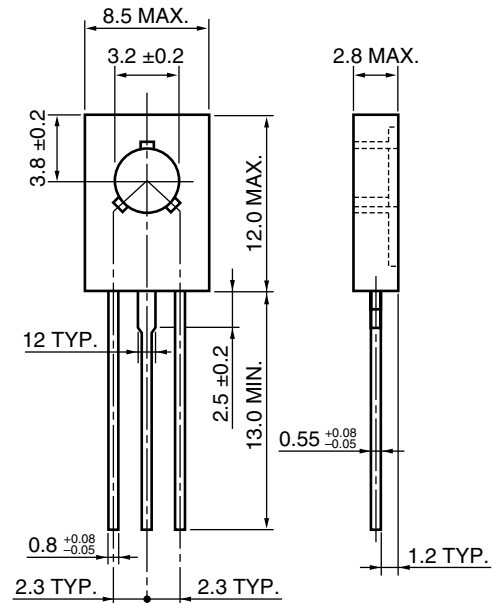
- Low saturation voltage  
 $V_{CE(sat)} \leq -0.5 \text{ V}$  ( $I_C = -2 \text{ A}$ ,  $I_B = -0.2 \text{ A}$ )
- Excellent  $h_{FE}$  linearity and high  $h_{FE}$   
 $h_{FE} = 60 \text{ to } 400$  ( $V_{CE} = -2 \text{ V}$ ,  $I_C = -1 \text{ A}$ )
- Less cramping space required due to small and 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
$I_{C(pulse)}$ <sup>Note</sup> 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	$h_{FE1}$	$V_{CE} = -2.0 \text{ V}$ , $I_C = -20 \text{ mA}$ <sup>Note</sup>	30	220		
DC Current Gain	$h_{FE2}$	$V_{CE} = -2.0 \text{ V}$ , $I_C = -1.0 \text{ mA}$ <sup>Note</sup>	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	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -3.0 \text{ V}$ , $I_C = 0 \text{ A}$			-1.0	$\mu\text{A}$
Collector Saturation Voltage	$V_{CE(sat)}$	$I_C = -2.0 \text{ A}$ , $I_B = -0.2 \text{ A}$ <sup>Note</sup>		-0.3	-0.5	V
Base Saturation Voltage	$V_{BE(sat)}$	$I_C = -2.0 \text{ A}$ , $I_B = -0.2 \text{ A}$ <sup>Note</sup>		-1.0	-2.0	V

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

CLASSIFICATION OF  $h_{FE}$

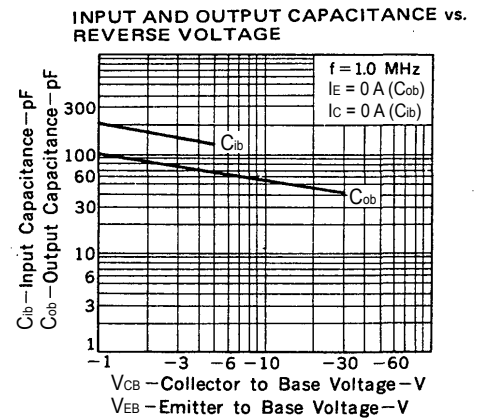
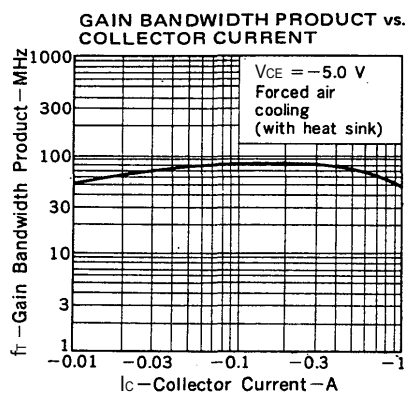
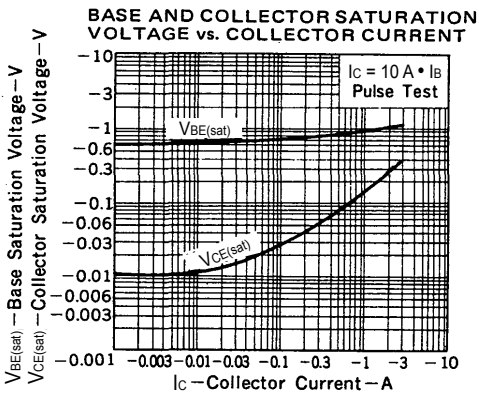
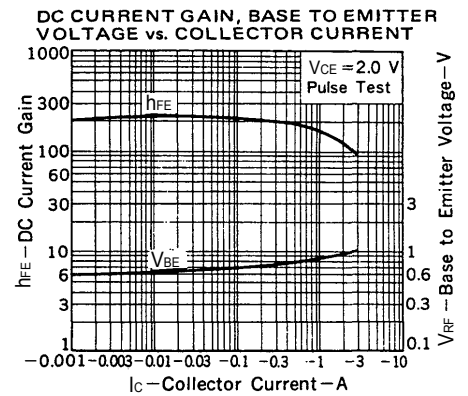
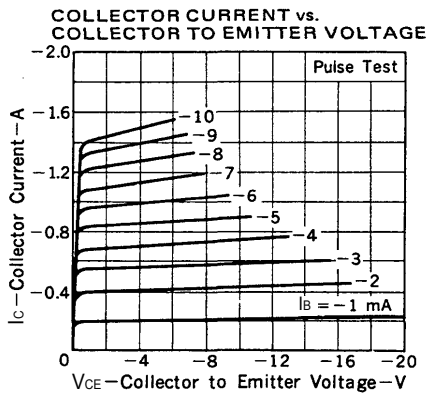
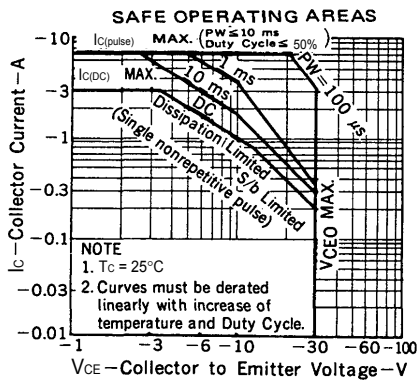
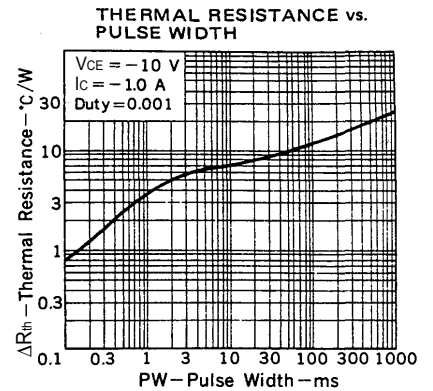
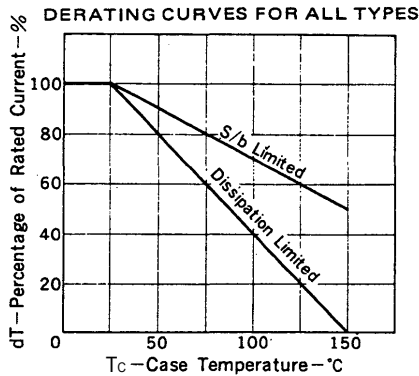
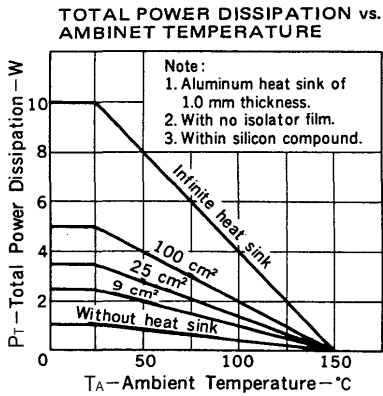
Rank	R	Q	P	E
Range	60 to 120	100 to 200	160 to 320	200 to 400

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

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TYPICAL CHARACTERISTICS (T<sub>A</sub> = 25°C, unless otherwise noted.)



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