NEC

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

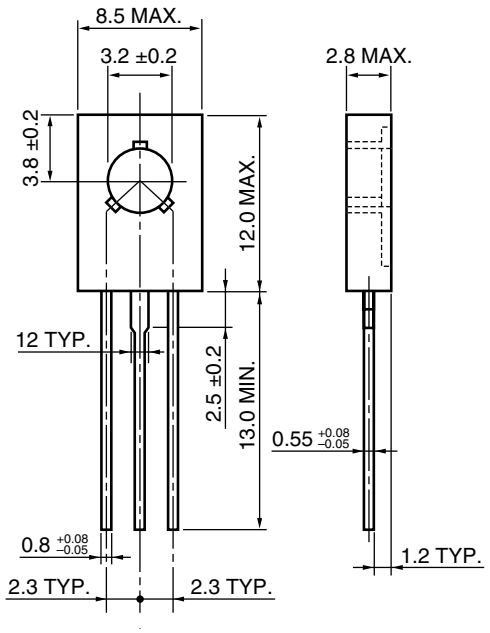
- Low saturation voltage
  $V_{CE(sat)} \leq -0.5$ V ($I_C = -2$ A, $I_B = -0.2$ A)
- Excellent h_{FE} linearity and high h_{FE}
  h_{FE} = 60 to 400 ($V_{CE} = -2$ V, $I_C = -1$ A)
- Less cramping space required due to small and thin package and reducing the trouble for attachment to a radiator.
  No 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°C)		1.0 W
Total Power Dissipation (T_C = 25°C)		10 W
Maximum Voltages and Currents (T_A = 25°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 ≤ 350 μs, Duty Cycle ≤ 2%

★ PACKAGE DRAWING (Unit: mm)



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

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

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

Note Pulse Test: PW ≤ 350 μs, Duty Cycle ≤ 2%

CLASSIFICATION OF h_{FE}

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

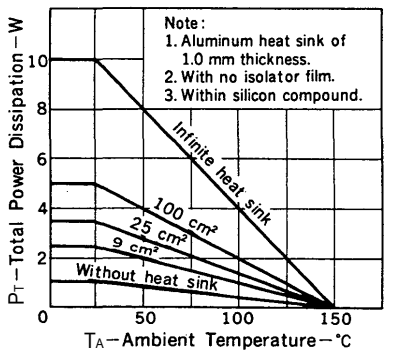
Remark Test Conditions: $V_{CE} = -2.0$ V, $I_C = 1.0$ A

Document No. D17118EJ2V0DS00 (2nd edition)
(Previous No. TC-3569)
Date Published March 2004 N CP(K)
Printed in Japan

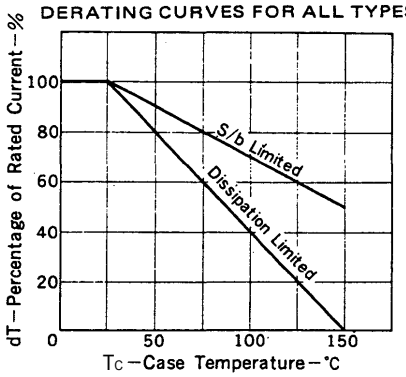
The mark ★ shows major revised points.

TYPICAL CHARACTERISTICS (T_A = 25°C, unless otherwise noted.)

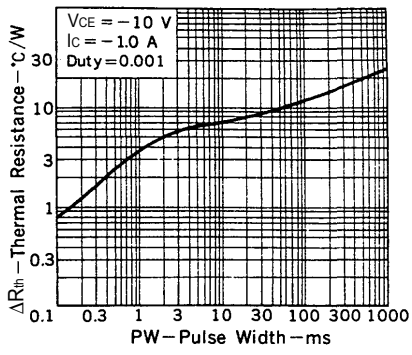
TOTAL POWER DISSIPATION vs. AMBINET TEMPERATURE



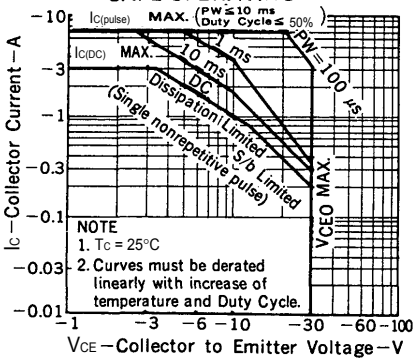
DERATING CURVES FOR ALL TYPES



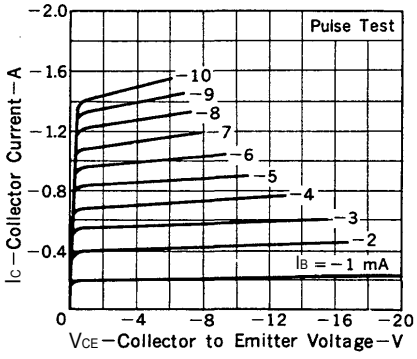
THERMAL RESISTANCE vs. PULSE WIDTH



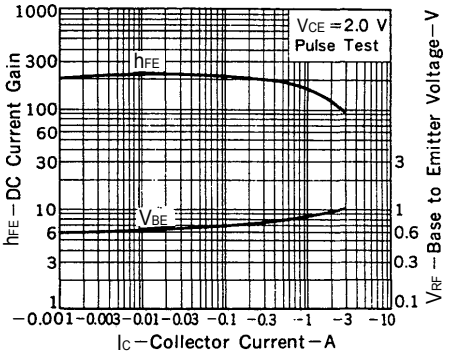
SAFE OPERATING AREAS



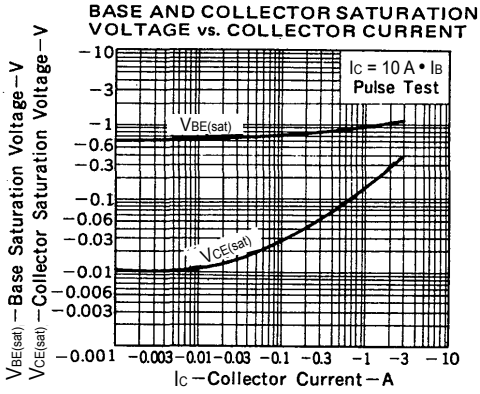
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



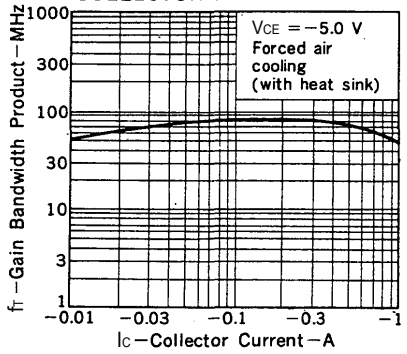
DC CURRENT GAIN, BASE TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



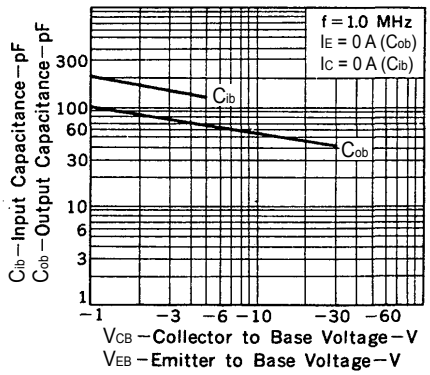
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



INPUT AND OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



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