

2SB1520

Preliminary

Silicon PNP Epitaxial
High Voltage Amplifier

Features

- Low saturation voltage
 $V_{CE(sat)} \leq -0.3\text{ V}$
- Large current capacitance
 $I_C = -2\text{ A}$

Table 1 Absolute Maximum Ratings
(Ta = 25°C)

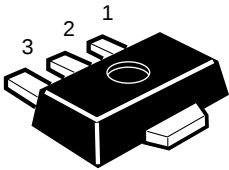
Item	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	-80	V
Collector to emitter voltage	V_{CEO}	-80	V
Emitter to base voltage	V_{EBO}	-5	V
Collector current	I_C	-2	A
Peak collector current	$i_{C(peak)}^*$	-3	A
Collector power dissipation	P_C^{**}	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

* $P_W \leq 10\text{ ms}$, duty cycle $\leq 20\%$
** When using the alumina ceramic board (12.5 × 20 × 0.7 mm)

Table 2 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	-80	—	—	V	$I_C = -10\text{ }\mu\text{A}$, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-80	—	—	V	$I_C = -1\text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_C = -10\text{ }\mu\text{A}$, $I_E = 0$
Collector cutoff current	I_{CBO}	—	—	-1	μA	$V_{CB} = -65\text{ V}$, $I_E = 0$
Collector cutoff current	I_{CEO}	—	—	-5	μA	$V_{CE} = -65\text{ V}$, $R_{BE} = \infty$
Emitter cutoff current	I_{EBO}	—	—	-1	μA	$V_{EB} = -4\text{ V}$, $I_C = 0$
DC current transfer ratio	h_{FE1}	120	—	300	—	$V_{CE} = -2\text{ V}$, $I_C = -0.5\text{ A}^*$
DC current transfer ratio	h_{FE2}	40	—	—	—	$V_{CE} = -2\text{ V}$, $I_C = -1.5\text{ A}^*$

UPAK



- 1. Base
- 2. Collector
- 3. Emitter

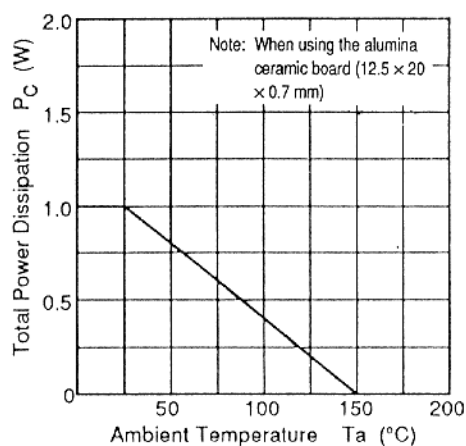
Table 2 Electrical Characteristics ($T_a = 25^\circ\text{C}$) (cont)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.3	V	$I_C = -1\text{ A}$, $I_B = -50\text{ mA}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	-1.2	V	$I_C = -1\text{ A}$, $I_B = -50\text{ mA}^*$

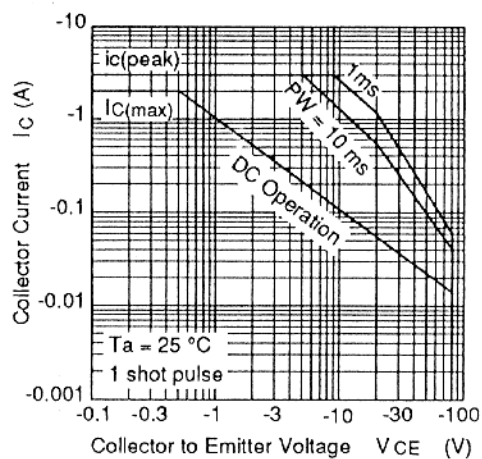
* Pulse test

** Marking is "GS".

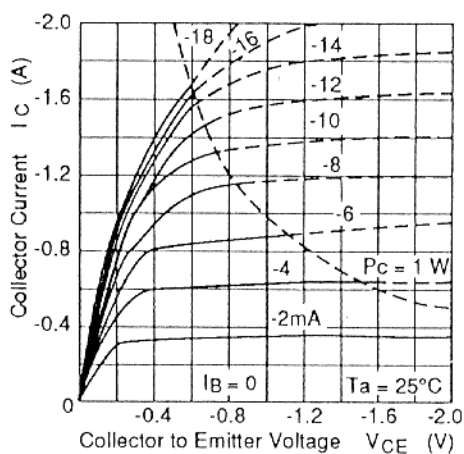
Maximum power dissipation curve



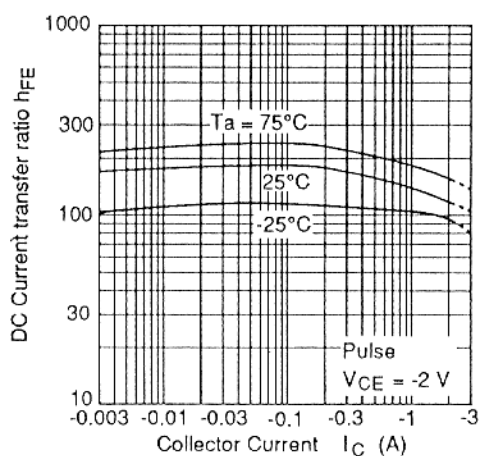
Area of safe operation



Typical transfer characteristics

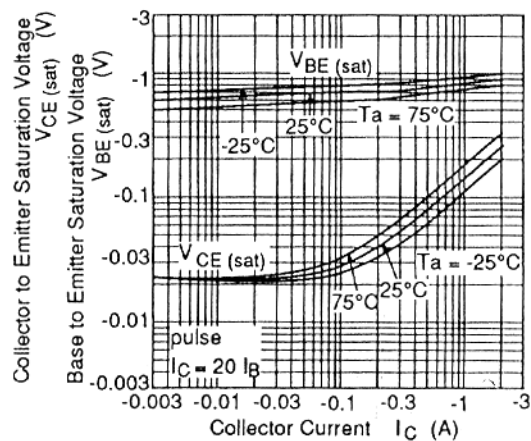


DC Current transfer ratio vs. collector current

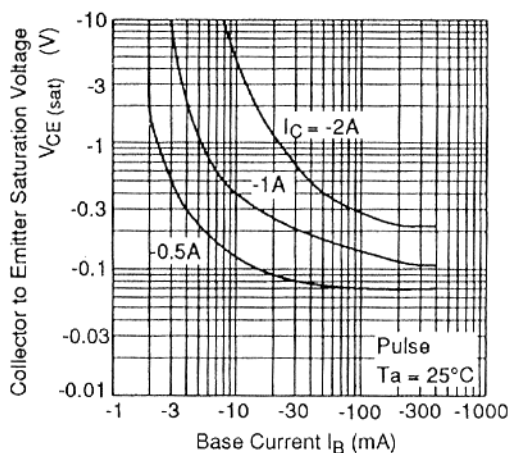


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Saturation voltage vs. collector current



Collector to emitter saturation voltage vs. base current



Typical transfer characteristics

