

# Power Transistor (−120V, −1.5A)

## 2SB1236

### ●Features

- 1) High breakdown voltage. ( $BV_{CEO} = -120V$ )
- 2) Low collector output capacitance.  
(Typ. 30pF at  $V_{CB} = -10V$ )
- 3) High transition frequency. ( $f_r = 50MHz$ )
- 4) Complements the 2SD1857.

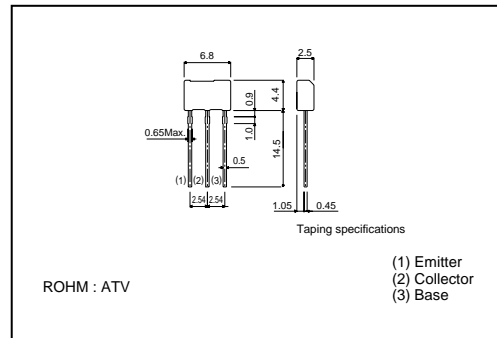
### ●Absolute maximum ratings ( $T_a = 25^\circ C$ )

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	−120	V
Collector-emitter voltage	$V_{CE0}$	−120	V
Emitter-base voltage	$V_{EB0}$	−5	V
Collector current	$I_c$	−1.5	A (DC)
		−3	A (Pulse) ※1
Collector power dissipation	$P_c$	1	W ※2
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	−55 to +150	°C

※1 Single pulse  $P_w = 100ms$

※2 Printed circuit board 1.7mm thick, collector plating 1cm<sup>2</sup> or larger.

### ●External dimensions (Unit : mm)



### ●Packaging specifications and $h_{FE}$

Type	2SB1236
Package	ATV
$h_{FE}$	QR
Code	TV2
Basic ordering unit (pieces)	2500

### ●Electrical characteristics ( $T_a = 25^\circ C$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CB0}$	−120	−	−	V	$I_c = -50\mu A$
Collector-emitter breakdown voltage	$BV_{CE0}$	−120	−	−	V	$I_{cV} = -1mA$
Emitter-base breakdown voltage	$BV_{EB0}$	−5	−	−	V	$I_E = -50\mu A$
Collector cutoff current	$I_{CB0}$	−	−	−1	$\mu A$	$V_{CB} = -100V$
Emitter cutoff current	$I_{EB0}$	−	−	−1	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	−	−	−2	V	$I_c/I_B = -1A/-0.1A$ ※
DC current transfer ratio	$h_{FE}$	120	−	390	−	$V_{CE} = -5V, I_c = -0.1A$
Transition frequency	$f_r$	−	50	−	MHz	$V_{CE} = -5V, I_E = 0.1A, f = 30MHz$
Output capacitance	$C_{ob}$	−	30	−	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

※Measured using pulse current.

Transistors

●Electrical characteristics curves

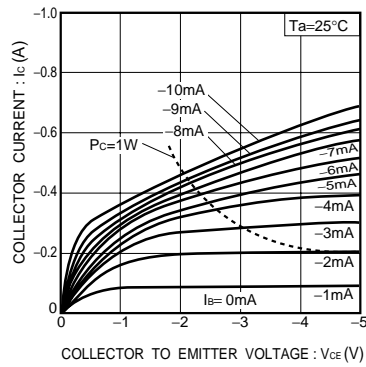


Fig.1 Ground emitter output characteristics

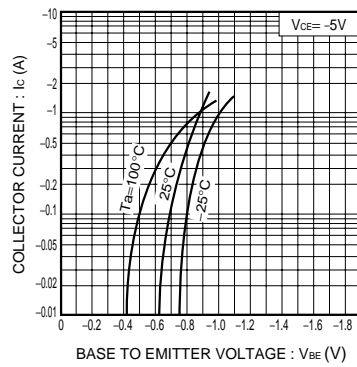


Fig.2 Ground emitter propagation characteristics

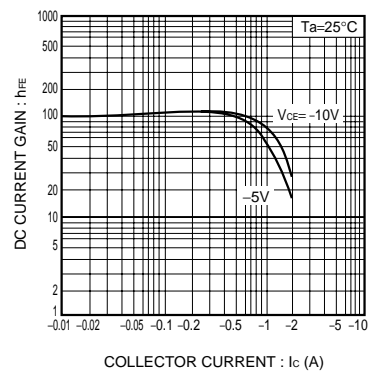


Fig.3 DC current gain vs. collector current (I)

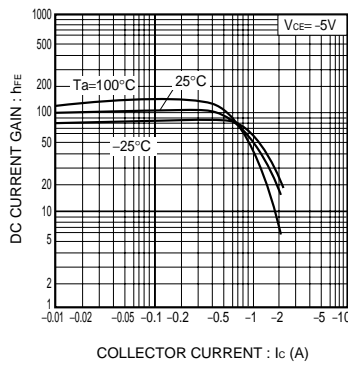


Fig.4 DC current gain vs. collector current (II)

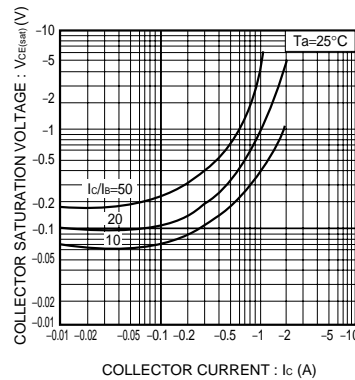


Fig.5 Collector-emitter saturation voltage vs. collector current

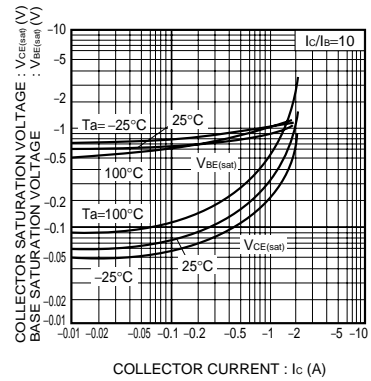


Fig.6 Collector-emitter saturation voltage vs. collector current  
Base-emitter saturation voltage

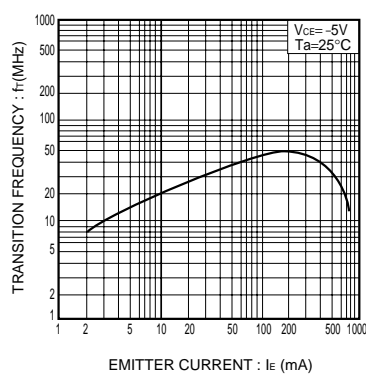


Fig.7 Gain bandwidth product vs. emitter current

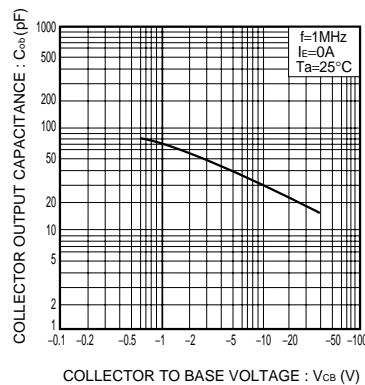


Fig.8 Collector output capacitance vs. collector-base voltage

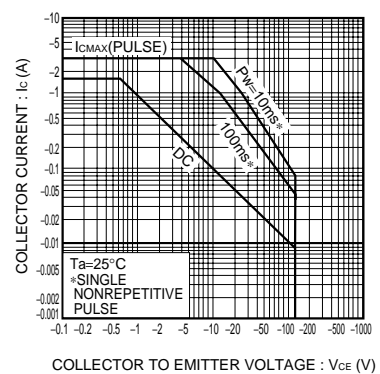


Fig.9 Safe operating area

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