

# 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.

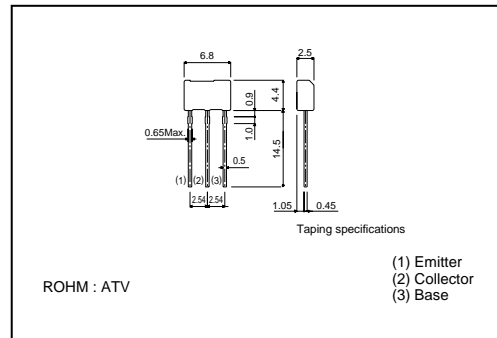
### ●Absolute maximum ratings ( $T_a=25^{\circ}C$ )

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	$^{\circ}C$
Storage temperature	$T_{stg}$	−55 to +150	$^{\circ}C$

※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

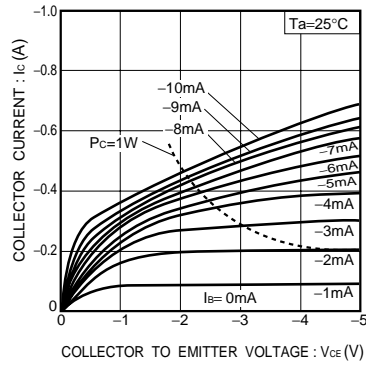


Fig.1 Ground emitter output characteristics

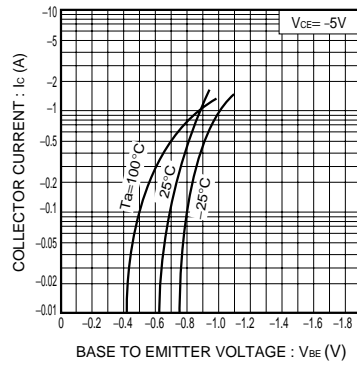


Fig.2 Ground emitter propagation characteristics

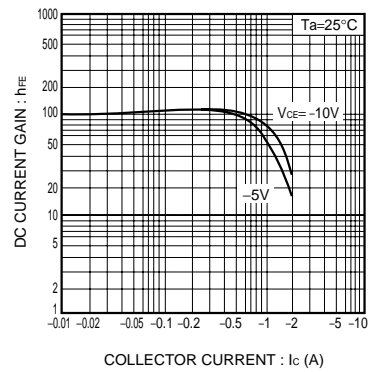


Fig.3 DC current gain vs. collector current ( I )

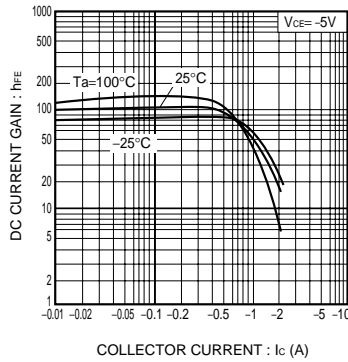


Fig.4 DC current gain vs. collector current ( II )

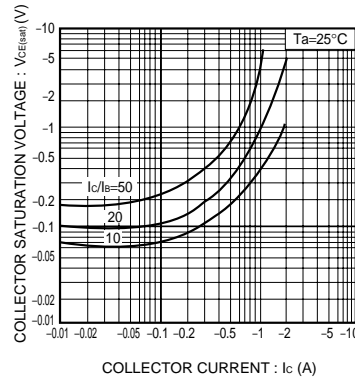


Fig.5 Collector-emitter saturation voltage vs. collector current

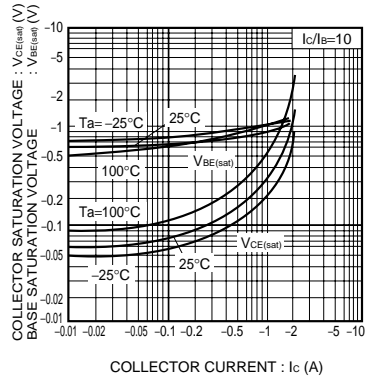


Fig.6 Collector-emitter saturation voltage vs. collector current  
Base-emitter saturation voltage

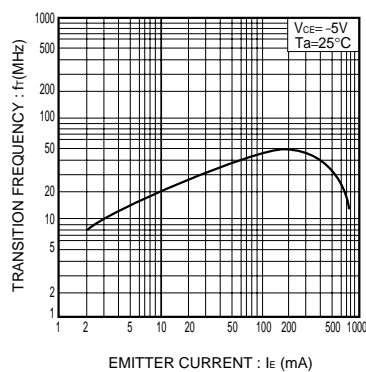


Fig.7 Gain bandwidth product vs. emitter current

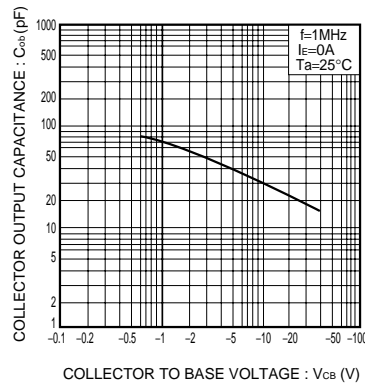


Fig.8 Collector output capacitance vs. collector-base voltage

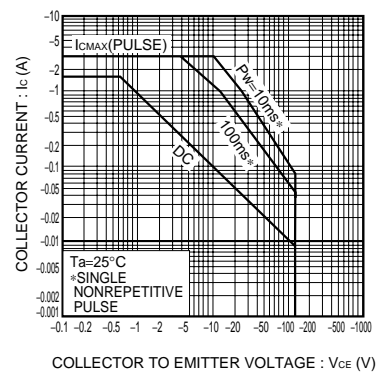


Fig.9 Safe operating area

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