

# Power Transistor (120V, 2A)

## 2SC4132 / 2SD1857

### ●Features

- 1) High breakdown voltage. ( $BV_{CEO} = 120V$ )
- 2) Low collector output capacitance.  
(Typ. 20pF at  $V_{CB} = 10V$ )
- 3) High transition frequency. ( $f_T = 80MHz$ )
- 4) Complements the 2SB1236.

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	120	V
Collector-emitter voltage	$V_{CEO}$	120	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	2	A
	$I_{CP}$	3	A *1
Collector power dissipation	$P_C$	0.5	W
		2 *2	
	2SD1857	1 *3	
Junction temperature	$T_J$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$

\*1 Single pulse  $P_w = 10ms$ \*2 When mounted on a  $40 \times 40 \times 0.7mm$  ceramic board.\*3 When mounted on 1.7mm thick PCB having collector foil dimensions  $1cm^2$  or more.

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

Type	2SC4132	2SD1857
Package	MPT3	ATV
$h_{FE}$	PQR	QR
Marking	CB*	-
Code	T100	TV2
Basic ordering unit (pieces)	1000	2500

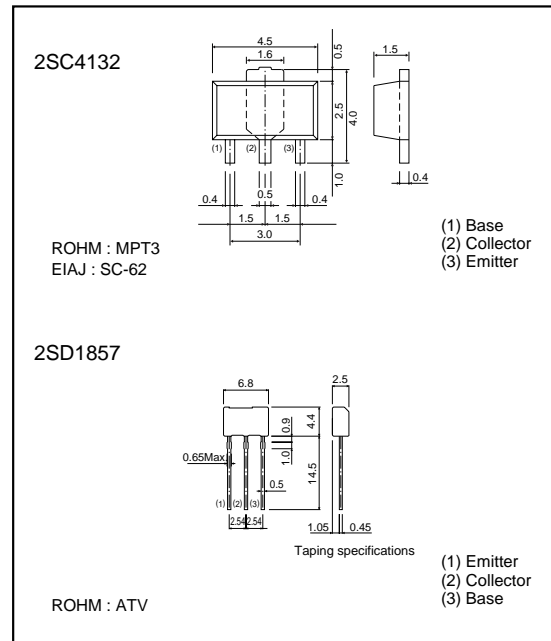
\* Denotes  $h_{FE}$ 

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	120	-	-	V	$I_C = 50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	120	-	-	V	$I_C = 1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	5	-	-	V	$I_E = 50\mu A$
Collector cutoff current	$I_{CBO}$	-	-	1	$\mu A$	$V_{CB} = 100V$
Emitter cutoff current	$I_{EBO}$	-	-	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	$h_{FE}$	82	-	390	-	$V_{CE}/I_C = 5V/0.1A$
Transition frequency	$f_T$	-	80	-	MHz	$V_{CE} = 5V, I_E = -0.1A, f = 30MHz$
Output capacitance	$C_{ob}$	-	20	-	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$ *

\* Measured using pulse current.

### ●Dimensions (Unit : mm)



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●Electrical characteristics curves

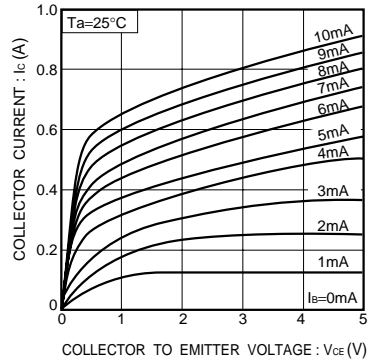


Fig.1 Ground emitter output characteristics

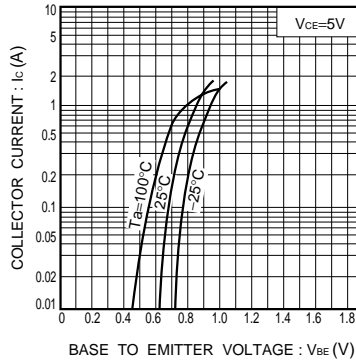


Fig.2 Ground emitter propagation characteristics

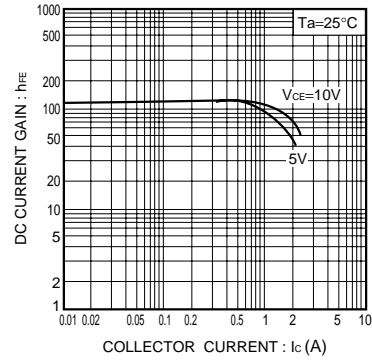


Fig.3 DC current gain vs. collector current (I)

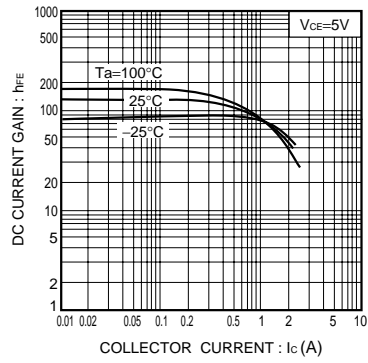


Fig.4 DC current gain vs. collector current (II)

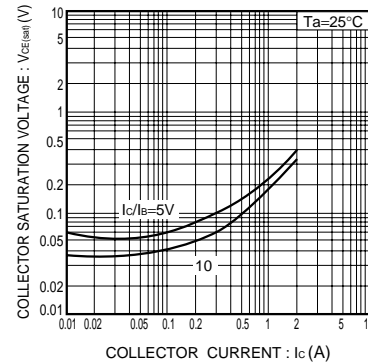


Fig.5 Collector-emitter saturation voltage vs. collector current

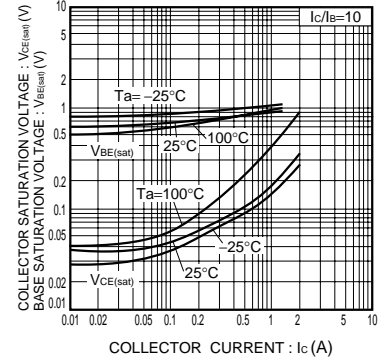


Fig.6 Collector-emitter saturation Base-emitter saturation vs. collector current

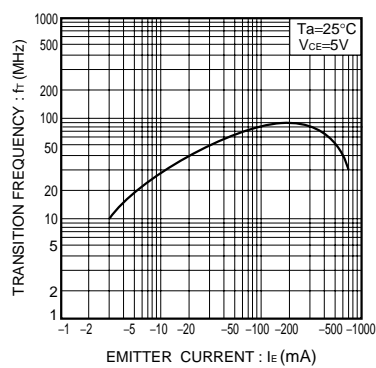


Fig.7 Gain bandwidth product vs. emitter current

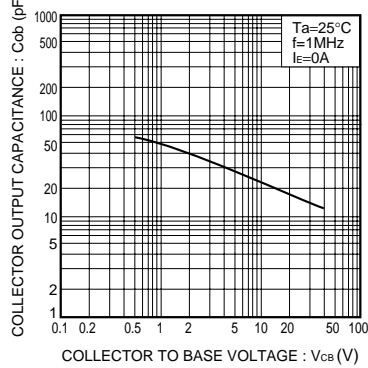


Fig.8 Collector output capacitance vs. collector-base voltage

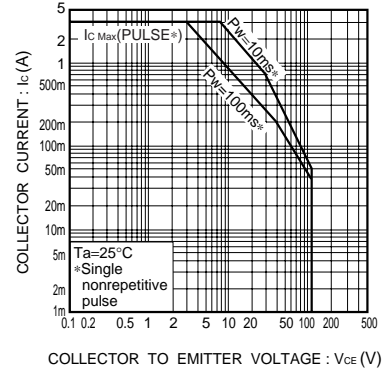


Fig.9 Safe operating area (2SC4132)

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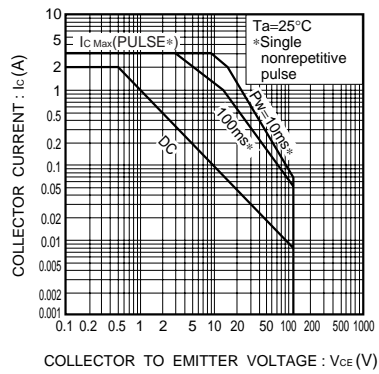


Fig.10 Safe operating area (2SD1857)

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