

2SC4132 / 2SD1857

Transistors

Power Transistor (120V, 1.5A)

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	
		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

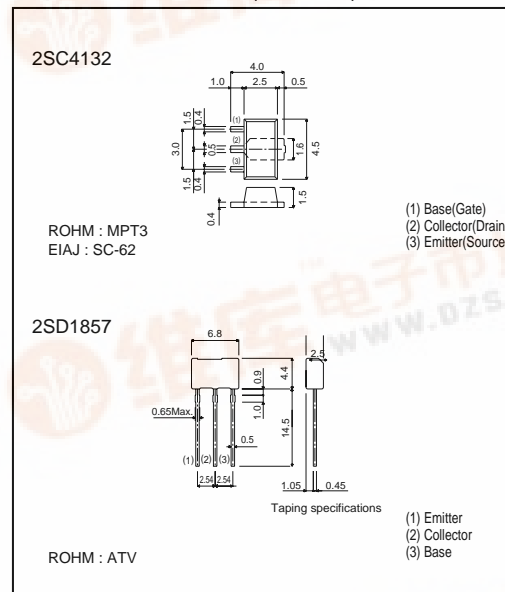
* Denotes h_{FE}

●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	μA	$V_{CB} = 100V$
Emitter cutoff current	I_{EBO}	-	-	1	μA	$V_{EB} = 4V$
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.

●External dimensions (Unit : mm)



Transistors

●Electrical characteristics curves

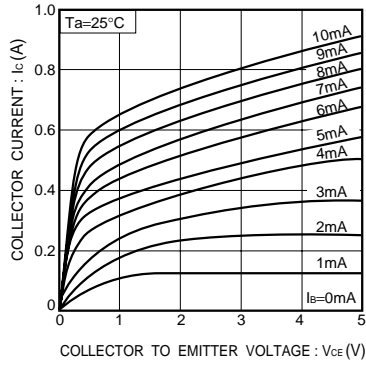


Fig.1 Ground emitter output characteristics

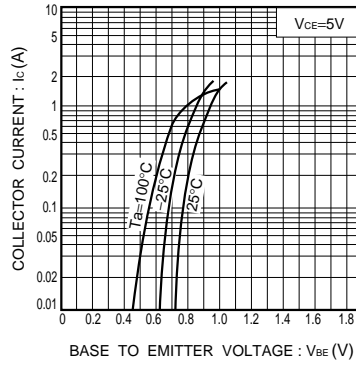


Fig.2 Ground emitter propagation characteristics

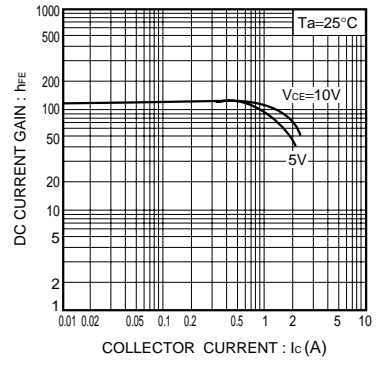


Fig.3 DC current gain vs. collector current (I)

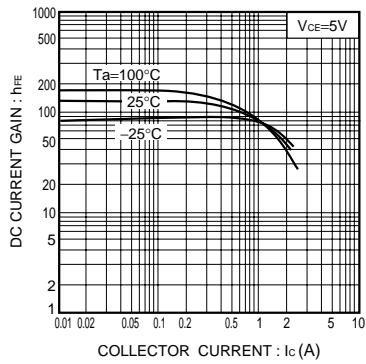


Fig.4 DC current gain vs. collector current (II)

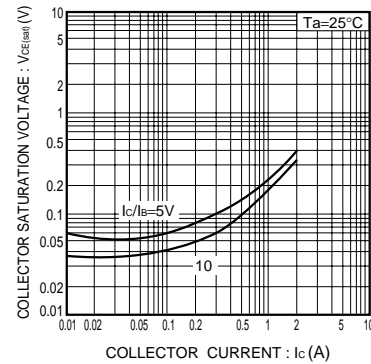


Fig.5 Collector-emitter saturation voltage vs. collector current

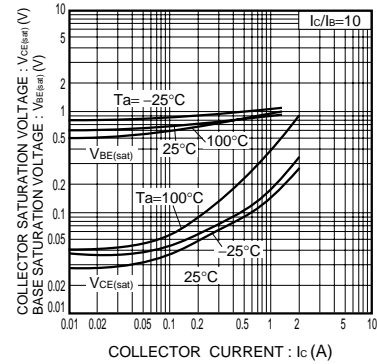


Fig.6 Collector-emitter saturation vs. collector current
Base-emitter saturation vs. collector current

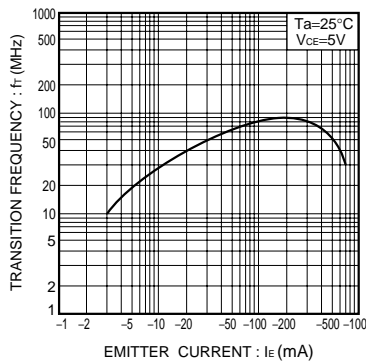


Fig.7 Gain bandwidth product vs. emitter current

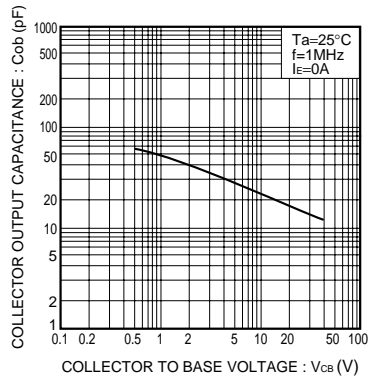


Fig.8 Collector output capacitance vs. collector-base voltage

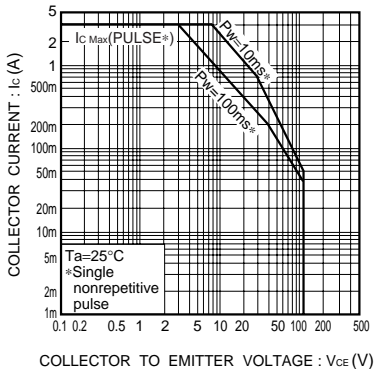


Fig.9 Safe operating area (2SC4132)

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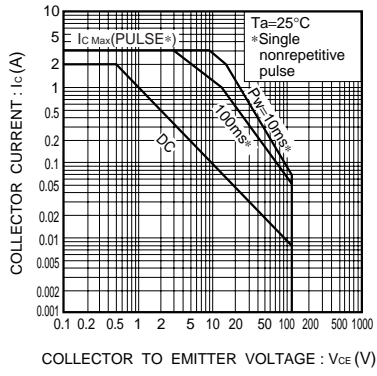


Fig.10 Safe operating area (2SD1857)

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