

Low $V_{CE(sat)}$ Transistor (Strobe flash)

(-20V, -10A)

2SA1834

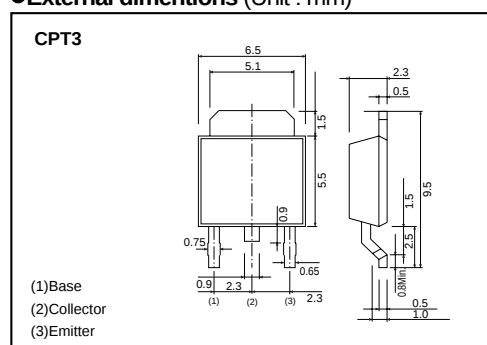
●Features

- 1) Low saturation voltage,
typically $V_{CE(sat)} = -0.16V$ at $I_C / I_B = -4A / -50mA$.
- 2) High current capacity, typically $I_C = -10A$ for DC operation and $-15A$ for 10ms pulse.
- 3) Complements the 2SC5001.

●Packaging specifications and h_{FE}

Type	2SA1834
Package	CPT3
h_{FE}	RS
Code	TL
Basic ordering unit (pieces)	2500

●External dimensions (Unit : mm)



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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	-30	V
Collector-emitter voltage	V_{CEO}	-20	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-10	A
	I_{CP}	-15	A *
Base current	I_B	-2	A
Collector power dissipation	P_C	1	W
		10	W($T_c = 25^\circ C$)
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

* Single pulse $P_w = 10ms$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-30	-	-	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-20	-	-	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	-6	-	-	V	$I_E = -50\mu A$
Collector cutoff current	I_{CBO}	-	-	-1	μA	$V_{CB} = -20V$
Emitter cutoff current	I_{EBO}	-	-	-1	μA	$V_{EB} = -5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-0.16	-0.25	V	$I_C / I_B = -4A / -0.05A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-0.9	-1.2	V	$I_C / I_B = -4A / -0.05A$ *
DC current transfer ratio	h_{FE1}	180	-	560	-	$V_{CE} = -2V, I_C = -0.5A$ *
	h_{FE2}	82	-	-	-	$V_{CE} = -2V, I_C = -4A$ *
Transition frequency	f_T	-	150	-	MHz	$V_{CE} = -5V, I_E = 1.5A, f = 50MHz$
Output capacitance	C_{ob}	-	220	-	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current.

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●Electrical characteristics (Ta=25°C)

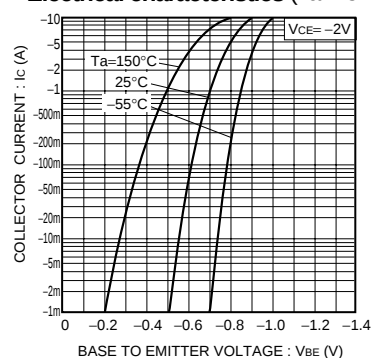


Fig.1 Ground emitter propagation characteristics

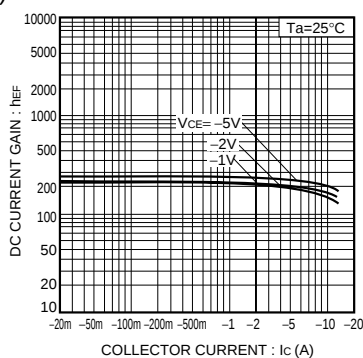


Fig.2 DC current gain vs. collector current (I)

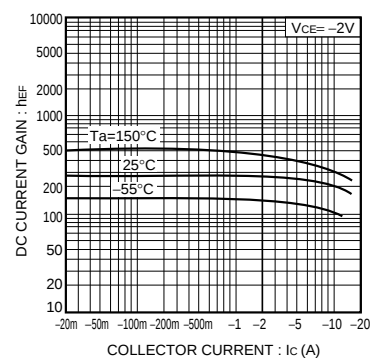


Fig.3 DC current gain vs. collector current (II)

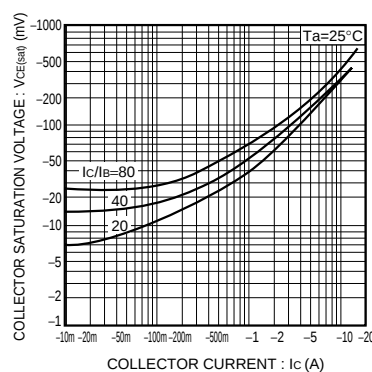


Fig.4 Collector-emitter saturation voltage vs. collector current (I)

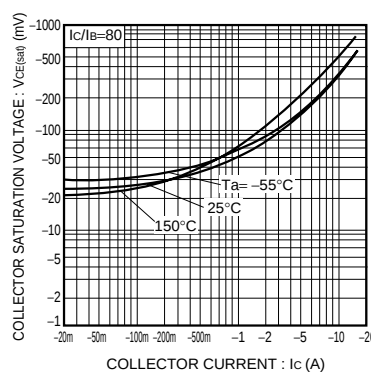


Fig.5 Collector-emitter saturation voltage vs. collector current (II)

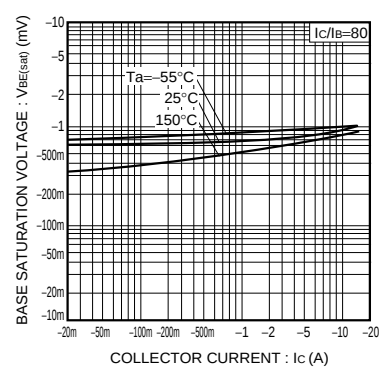


Fig.6 Base-emitter saturation voltage vs. collector current

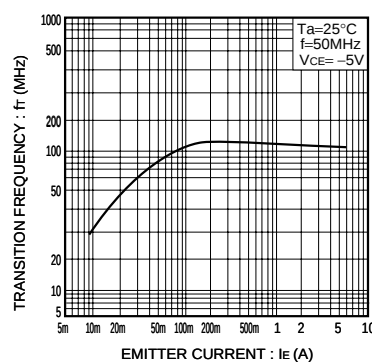


Fig.7 Gain bandwidth product vs. emitter current

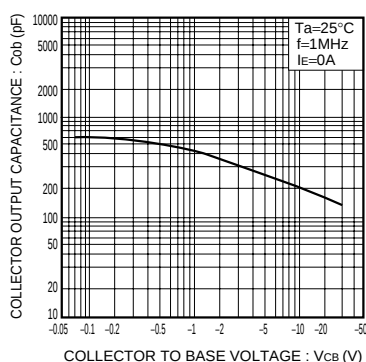


Fig.8 Collector output capacitance vs. collector-base voltage

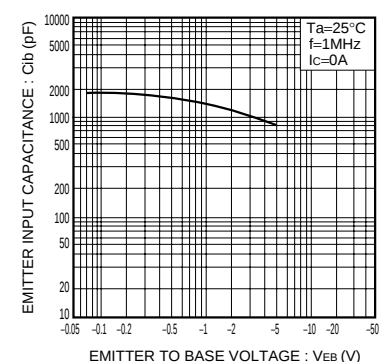


Fig.9 Emitter input capacitance vs. emitter-base voltage

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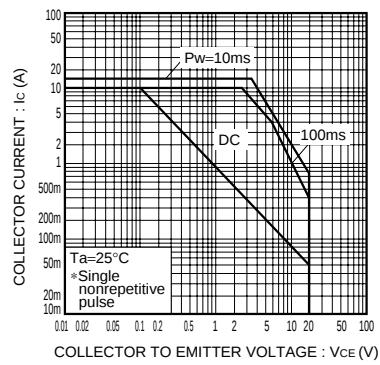


Fig.10 Safe operating area

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