

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

## (-20V, -10A)

### 2SA1834

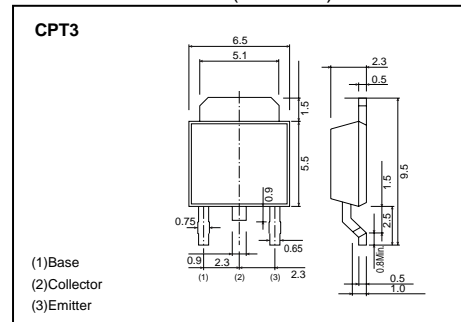
#### ●Features

- 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	$\mu A$	$V_{CB} = -20V$
Emitter cutoff current	$I_{EBO}$	-	-	-1	$\mu A$	$V_{EB} = -5V$
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	$f_r$	-	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)

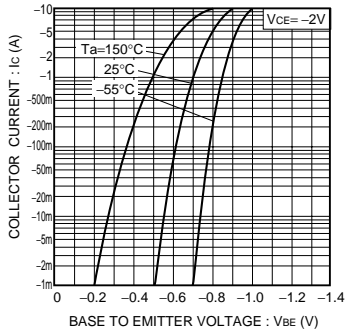


Fig.1 Ground emitter propagation characteristics

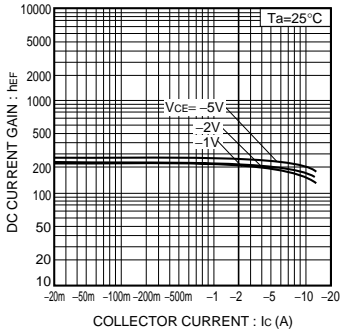


Fig.2 DC current gain vs. collector current( I )

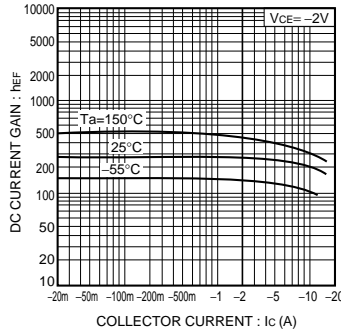


Fig.3 DC current gain vs. collector current ( II )

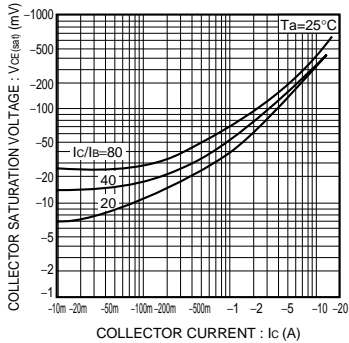


Fig.4 Collector-emitter saturation voltage vs. collector current ( I )

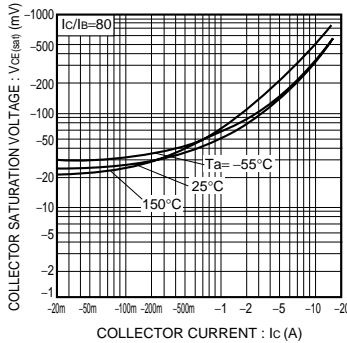


Fig.5 Collector-emitter saturation voltage vs. collector current ( II )

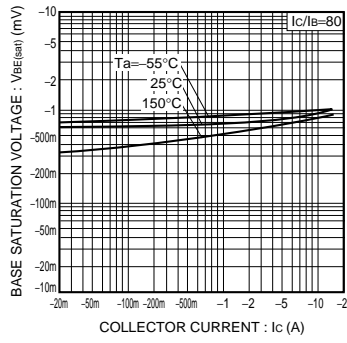


Fig.6 Base-emitter saturation voltage vs. collector current

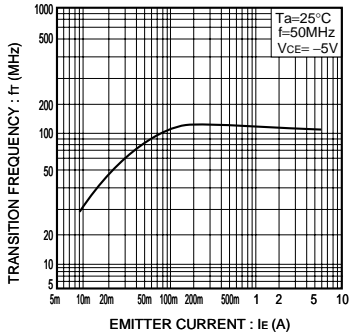


Fig.7 Gain bandwidth product vs. emitter current

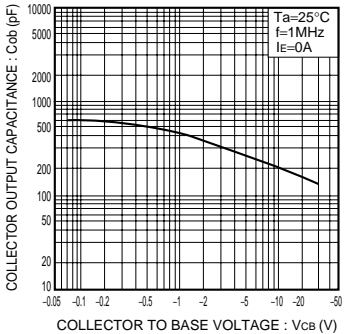


Fig.8 Collector output capacitance vs. collector-base voltage

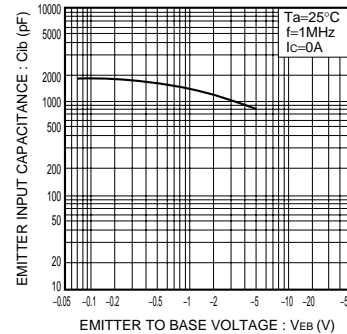


Fig.9 Emitter input capacitance vs. emitter-base voltage

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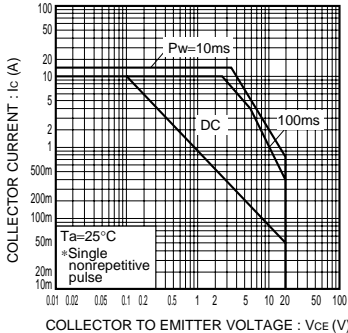


Fig.10 Safe operating area

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