

Transistors

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

(20V, 10A)

2SC5001

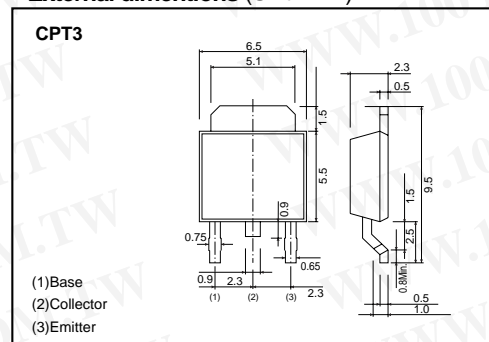
●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = 0.13V$ 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 2SA1834.

●Packaging specifications and h_{FE}

Type	2SC5001
Package	CPT3
h_{FE}	QR
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	$V_{CE(sat)}$	-	0.13	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}	120	-	390	-	$V_{CE}/I_C=2V/0.5A$
DC current transfer ratio	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	$V_{CB}=10V, I_E=0A, f=1MHz$

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●Electrical characteristics (Ta=25°C)

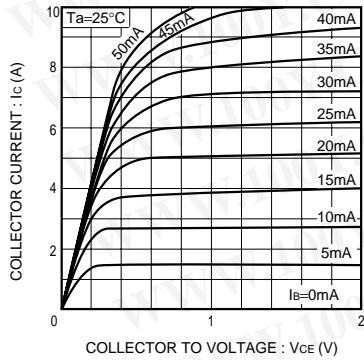


Fig.1 Ground emitter output characteristics

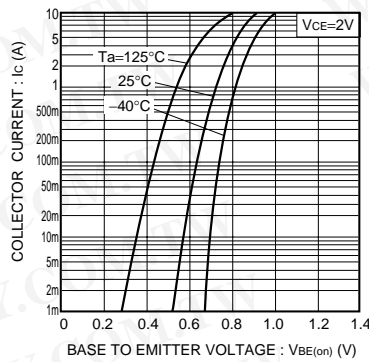


Fig.2 Ground emitter propagation characteristics

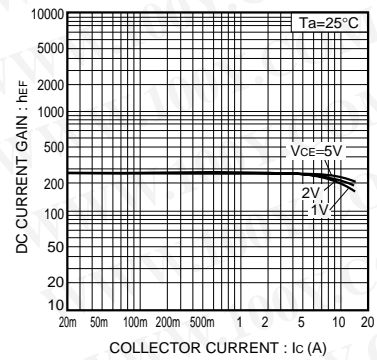


Fig.3 DC current gain vs. collector current

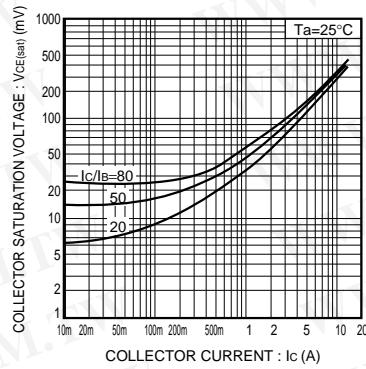


Fig.4 Collector-emitter saturation voltage vs. collector current

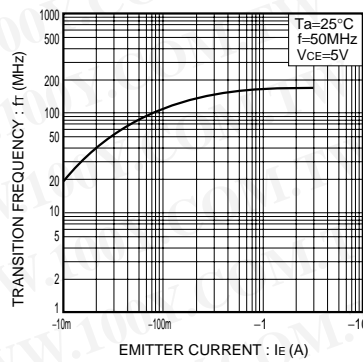


Fig.5 Gain bandwidth product vs. emitter current

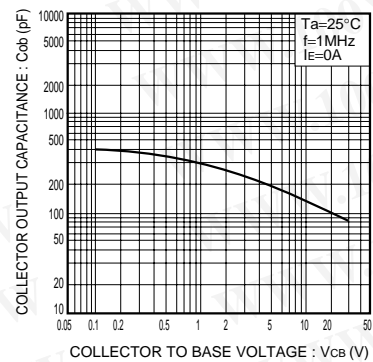


Fig.6 Collector output capacitance vs. collector-base voltage

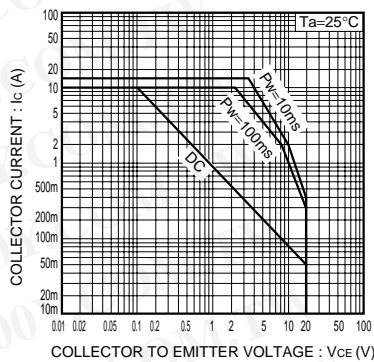


Fig.7 Safe operating area

Appendix

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