Low $V_{CE(sat)}$ Transistor (Strobe flash) (20V, 10A)

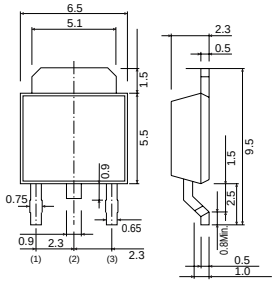
2SC5001

●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.

●External dimentions (Unit : mm)

CPT3



(1)Base
(2)Collector
(3)Emitter

●Packaging specifications and h_{FE}

Type	2SC5001
Package	CPT3
h_{FE}	QR
Code	TL
Basic ordering unit (pieces)	2500

●Absolute maximum ratings (Ta=25°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(Tc=25°C)	
Junction temperature	T_j	150	°C	
Storage temperature	Tstg	−55 to +150	°C	

* Single pulse Pw=10ms

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	30	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	20	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	6	–	–	V	I_E=50μA
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	Cob	–	220	–	pF	V_{CB}=10V , I_E=0A , f=1MHz

●**Electrical characteristics** (Ta=25°C)

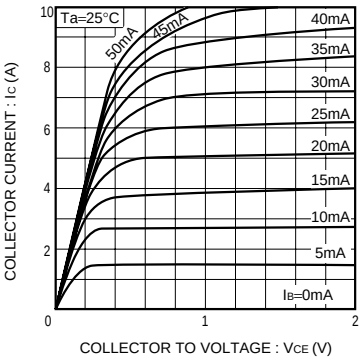


Fig.1 Ground emitter output characteristics

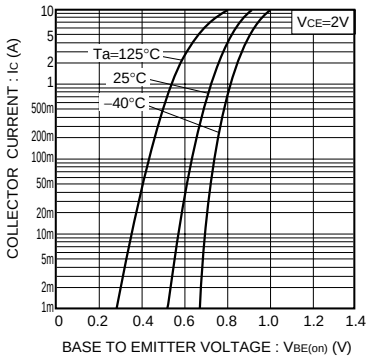


Fig.2 Ground emitter propagation characteristics

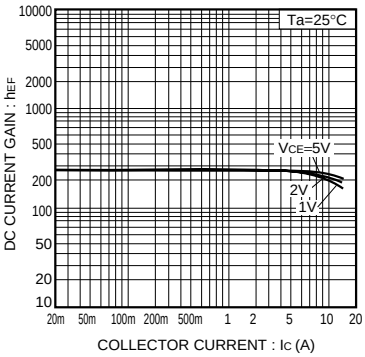


Fig.3 DC current gain vs. collector current

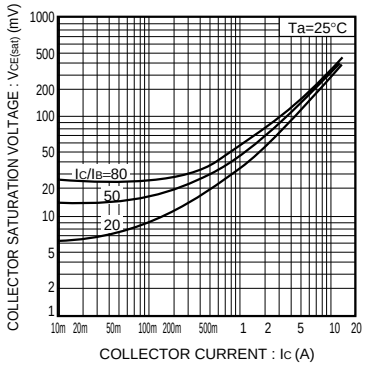


Fig.4 Collector-emitter saturation voltage vs. collector current

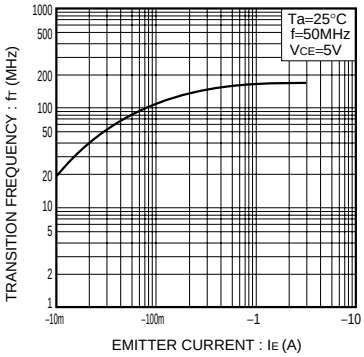


Fig.5 Gain bandwidth product vs. emitter current

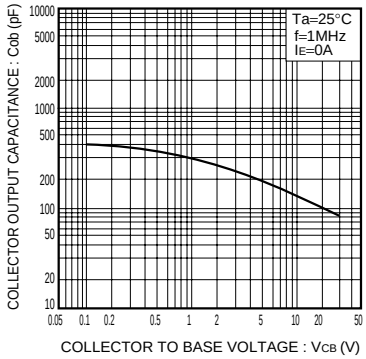


Fig.6 Collector output capacitance vs. collector-base voltage

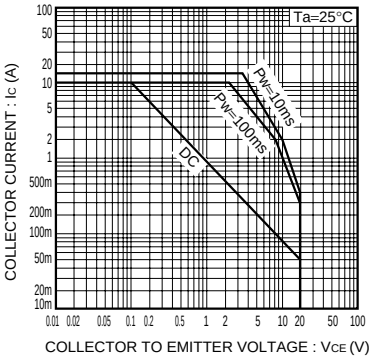


Fig.7 Safe operating area

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