

Power Transistor (–50V, –3A)

2SA1797

●Features

- 1) Low saturation voltage. $V_{CE(sat)} = -0.35V$ (Max.) at $I_C / I_B = -1A / -50mA$.
- 2) Excellent DC current gain characteristics.
- 4) Complements the 2SA1797 and 2SC4672.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CB0}	–50	V	
Collector-emitter voltage	V_{CE0}	–50	V	
Emitter-base voltage	V_{EB0}	–6	V	
Collector current	I_C	–3	A (DC)	
		–6	A (Pulse) *1	
Collector power dissipation	2SA1797	P_C	0.5	W *2
			2	
Junction temperature	T_j	150	°C	
Storage temperature	T_{stg}	–55~+150	°C	

*1 Single pulse, $P_w=10ms$

*2 When mounted on a $40 \times 40 \times 0.7mm$ ceramic board.

●Packaging specifications and h_{FE}

Type	2SA1797
Package	MPT3
h_{FE}	PQ
Marking	AG *
Code	T100
Basic ordering unit (pieces)	1000

*Denotes h_{FE}

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	–50	–	–	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	BV_{CE0}	–50	–	–	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EB0}	–6	–	–	V	$I_E = -50\mu A$
Collector cutoff current	I_{CB0}	–	–	–0.1	μA	$V_{CB} = -50V$
Emitter cutoff current	I_{EB0}	–	–	–0.1	μA	$V_{EB} = -5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–0.15	–0.35	V	$I_C / I_B = -1A / -50mA$ *
DC current transfer ratio	h_{FE}	82	–	270	–	$V_{CE} / I_C = -2V / -0.5A$
Transition frequency	f_T	–	200	–	MHz	$V_{CE} = -2V, I_E = 0.5A, f = 100MHz$ *
Output capacitance	C_{ob}	–	36	–	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current

Transistors

● Electrical characteristic curves

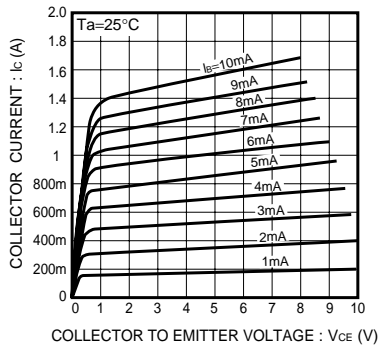


Fig.1 Grounded emitter output characteristics

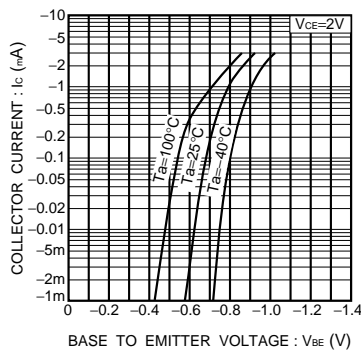


Fig.2 Grounded emitter propagation characteristics

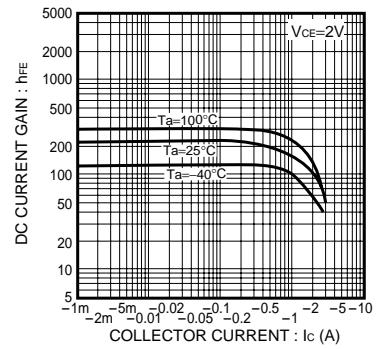


Fig.3 DC current gain vs. collector current

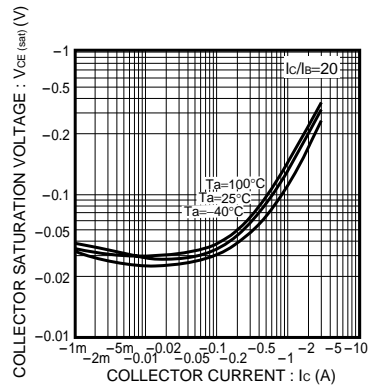


Fig.4 Collector-emitter saturation voltage vs. collector current

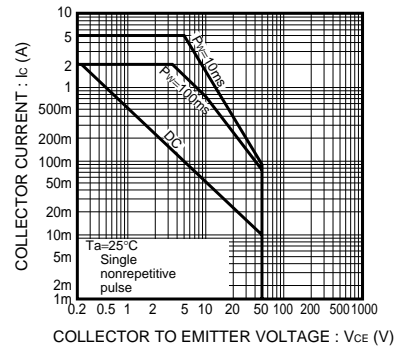


Fig.5 Safe operating area

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