

Transistors

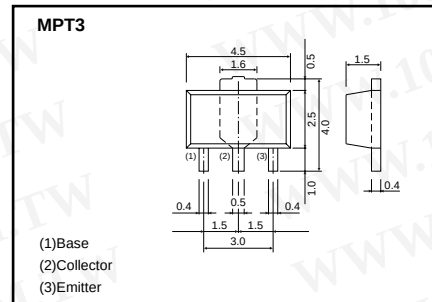
Medium power transistor (−50V, −1A)

2SA1900

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = -0.15V$ at $I_C/I_B = -500mA/-50mA$
- 2) $P_C = 2W$ (on $40 \times 40 \times 0.7mm$ ceramic board)
- 3) Complements the 2SC5053

●External dimensions (Unit : mm)



● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−60	V
Collector-emitter voltage	V_{CEO}	−50	V
Emitter- base voltage	V_{EBO}	−5	V
Collector current	I_C	−1	A
		−2	A (Pulse) *1
Collector power dissipation	P_C	0.5	W
		2	W *2
Collector power dissipation	T_J	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

*1 Single pulse $P_W = 20ms$, Duty=1/2

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

●External dimensions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−60	−	−	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−50	−	−	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	−5	−	−	V	$I_E = -50\mu A$
Collector cutoff current	I_{CBO}	−	−	−0.1	μA	$V_{CB} = -40V$
Emitter cutoff current	I_{EBO}	−	−	−0.1	μA	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	−	−	−0.4	V	$I_C/I_B = -500mA/-50mA$
DC current transfer ratio	h_{FE}	120	−	270	−	$V_{CE}/I_C = -3V/-0.5A$
Transition frequency	f_T	−	150	−	MHz	$V_{CE} = -5V$, $I_E = 50mA$, $f = 100MHz$
Output capacitance	C_{ob}	−	20	−	pF	$V_{CB} = -10V$, $I_E = 0A$, $f = 1MHz$

●Packaging specifications and h_{FE}

Type	2SA1900
Package	MPT3
h_{FE}	Q
Marking	AL *
Code	T100
Basic ordering unit (pieces)	1000

* Denotes h_{FE}

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●Electric characteristics curves

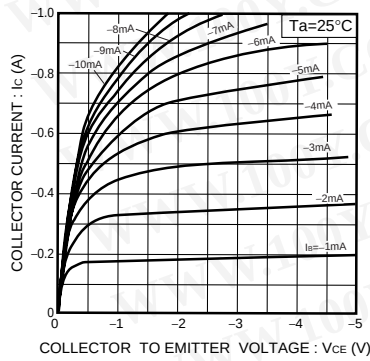


Fig.1 Grounded emitter output characteristics

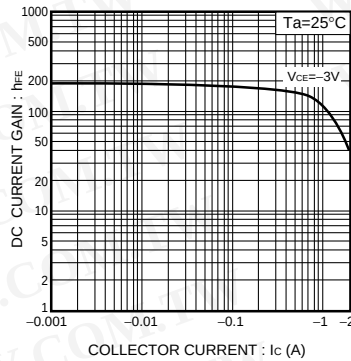


Fig.2 DC current gain vs. collector current

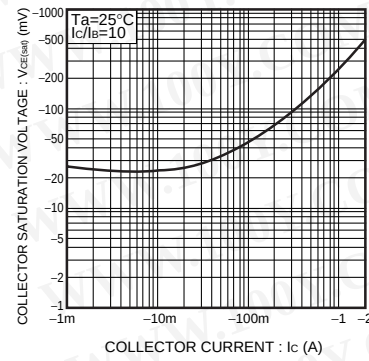


Fig.3 Collector-emitter saturation voltage vs. collector current

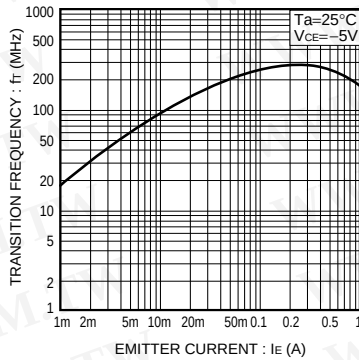


Fig.4 Gain bandwidth product vs. emitter current

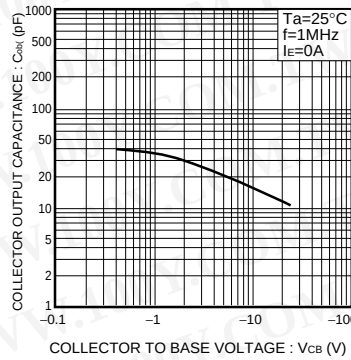


Fig.5 Collector output capacitance vs. collector-base voltage

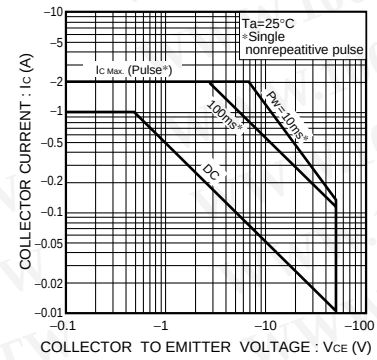


Fig.6 Safe operating area

Appendix

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