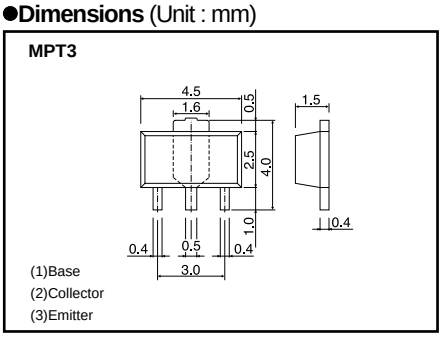
Medium power transistor (50V, 1A)

2SC5053

●Features

1) Low saturation voltage, typically $V_{CE(sat)}$=0.12V at I_C/I_B=500mA/50mA
2) P_C=2W (on 40×40×0.7mm ceramic board)
3) Complements the 2SA1900

●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 Pw=100ms
∗2 When mounted on a 40 × 40 × 0.7mm seramic board.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	60	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	50	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	–	–	V	I_E=50μA
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	–	390	–	V_{CE}/I_C=3V/0.5A
Transition frequency	f_T	–	150	–	MHz	V_{CE}=5V , I_E=−50mA , f=100MHz
Output capacitance	Cob	–	15	–	pF	V_{CB}=10V , I_E=0A , f=1MHz

●Packaging specifications and h_{FE}

Type	2SC5053
Package	MPT3
h_{FE}	QR
Marking	CG ∗
Code	T100
Basic ordering unit (pleces)	1000

∗ Denotes h_{FE}

●Electric characteristics curves

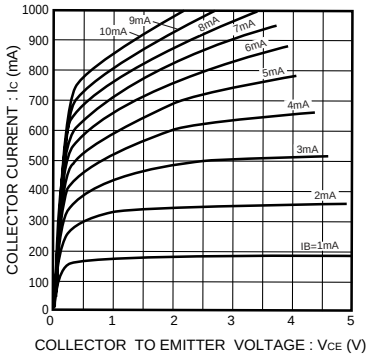


Fig.1 Grounded emitter output characteristics

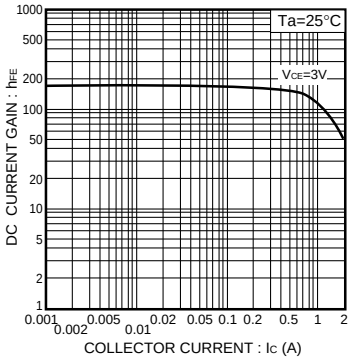


Fig.2 DC current gain vs. collector current

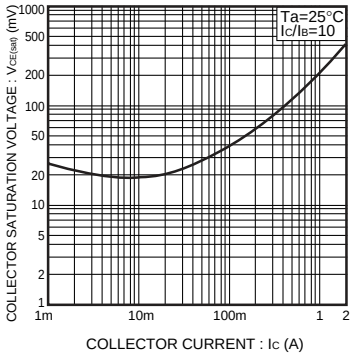


Fig.3 Collector-emitter saturation voltage vs.collector current

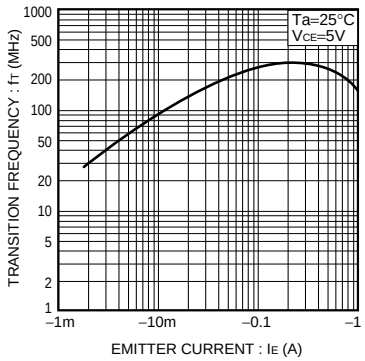


Fig.4 Gain bandwith product vs. emitter current

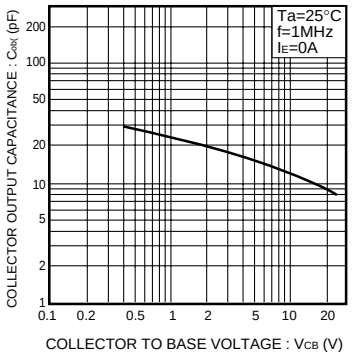


Fig.5 Collector output capacitance vs. collector-base voltage

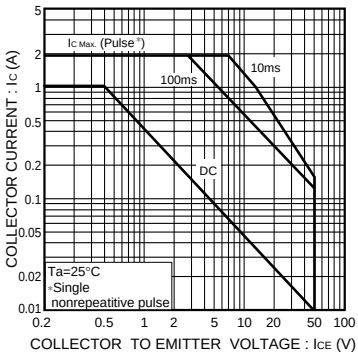


Fig.6 Safe operating area

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