

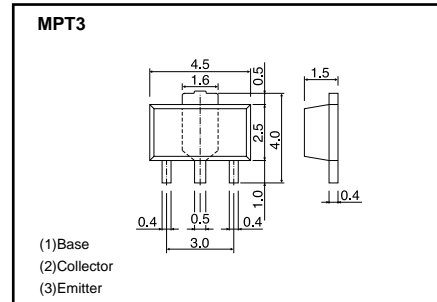
# Medium power transistor (50V, 1A)

## 2SC5053

### ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)}=0.12V$  at  $I_C/I_B=500mA/50mA$
- 2)  $P_C=2W$  (on  $40\times 40\times 0.7mm$  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  $P_w=100ms$

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

### ●Electrical characteristics (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	$\mu A$	$V_{CB}=40V$
Emitter cutoff current	$I_{EBO}$	-	-	0.1	$\mu A$	$V_{EB}=4V$
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	$C_{ob}$	-	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 (pieces)	1000

\* Denotes  $h_{FE}$

Transistors

●Electric characteristics curves

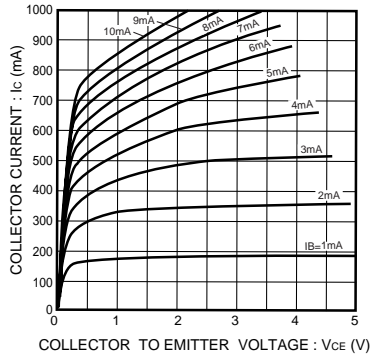


Fig.1 Grounded emitter output characteristics

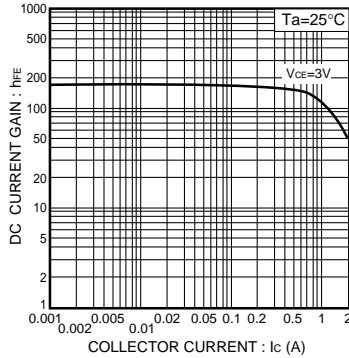


Fig.2 DC current gain vs. collector current

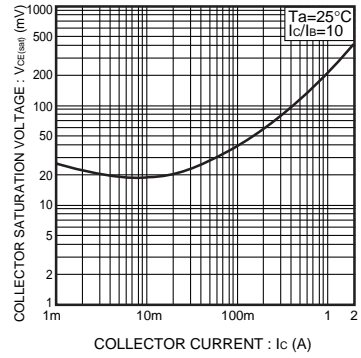


Fig.3 Collector-emitter saturation voltage vs. collector current

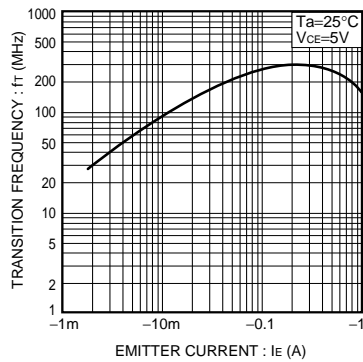


Fig.4 Gain bandwidth product vs. emitter current

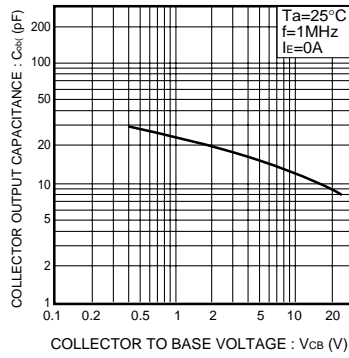


Fig.5 Collector output capacitance vs. collector-base voltage

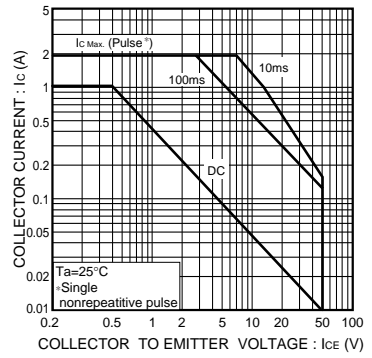


Fig.6 Safe operating area

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