

2SC5053

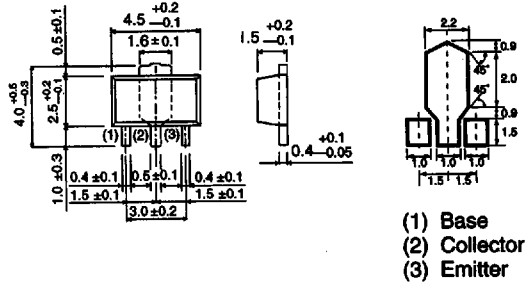
Transistor, NPN

Features

- available in MPT3 (MPT, SC-62) package
- package marking: 2SC5053; CG★, where ★ is h_{FE} code
- $P_C = 2\text{ W}$ when mounted on a $40 \times 40 \times 0.7\text{ mm}$ ceramic substrate
- low collector saturation voltage, typically $V_{CE(sat)} = 0.12\text{ V}$ for $I_C/I_B = 500\text{ mA}/50\text{ mA}$
- complementary pair with 2SA1900

Dimensions (Units : mm)

2SC5053 (MPT3)



Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V_{CBO}	60	V	
Collector-to-emitter voltage	V_{CEO}	50	V	
Emitter-to-base voltage	V_{EBO}	5	V	
Collector current	I_C	1	A	DC
	I_{CP}	2		$P_W = 20\text{ ms}$, Duty = 50%
Collector dissipation	P_C	0.5	W	Mounted on $40 \times 40 \times 0.7\text{ mm}$ ceramic substrate
		2		
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$	

Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	BV_{CBO}	60			V	$I_C = 50 \mu\text{A}$
Collector-to-emitter breakdown voltage	BV_{CEO}	50			V	$I_C = 1 \text{ mA}$
Emitter-to-base breakdown voltage	BV_{EBO}	5			V	$I_E = 50 \mu\text{A}$
Collector cutoff current	I_{CBO}			0.1	μA	$V_{CB} = 40 \text{ V}$
Emitter cutoff current	I_{EBO}			0.1	μA	$V_{EB} = 4 \text{ V}$
DC current gain	h_{FE}	82		390		$V_{CE} = 3 \text{ V}, I_C = 500 \text{ mA}$
Collector-to-emitter saturation voltage	$V_{CE(sat)}$			0.4	V	$I_C/I_B = 500 \text{ mA}/50 \text{ mA}$
Transition frequency	f_T		150		MHz	$V_{CE} = 5 \text{ V}, I_E = -50 \text{ mA}, f = 100 \text{ MHz}$
Collector output capacitance	C_{ob}		20		pF	$V_{CB} = 10 \text{ V}, I_E = 0 \text{ A}, f = 1 \text{ MHz}$

h_{FE} rankings

Item	P	Q	R
h_{FE}	82 ~ 180	120 ~ 270	180 ~ 390

Electrical characteristic curves

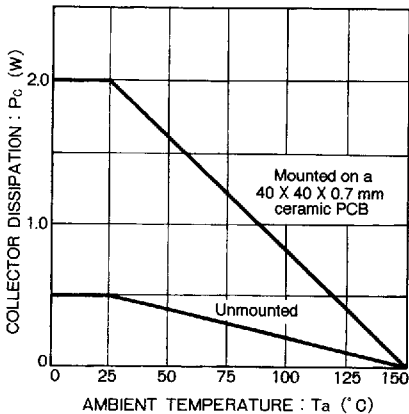


Figure 1

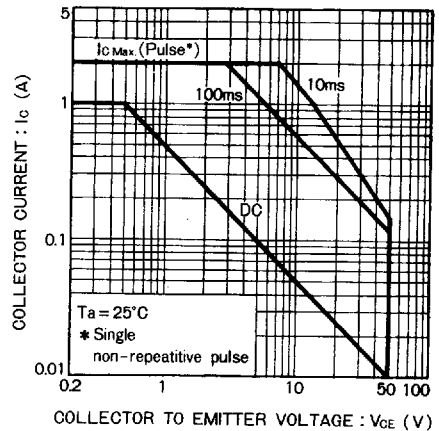


Figure 2

2SC5053 Transistor, NPN, 2SC series

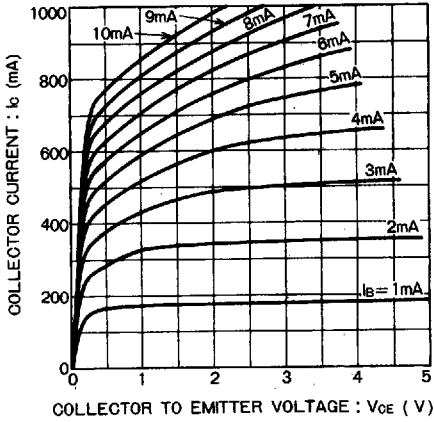


Figure 3

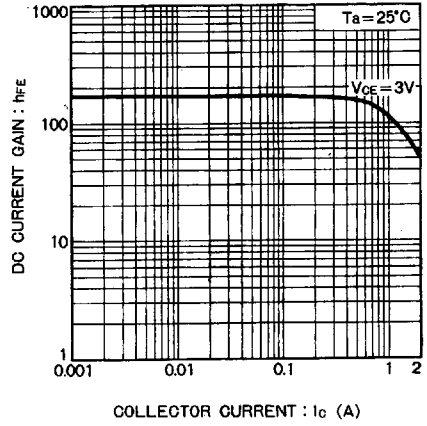


Figure 4

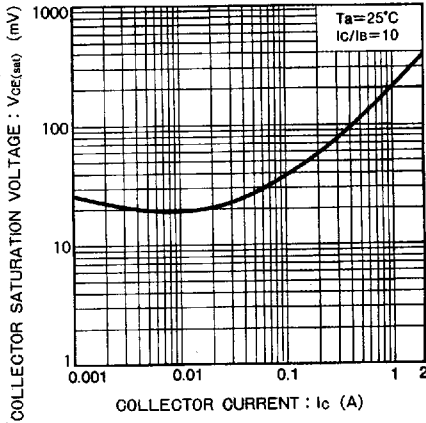


Figure 5

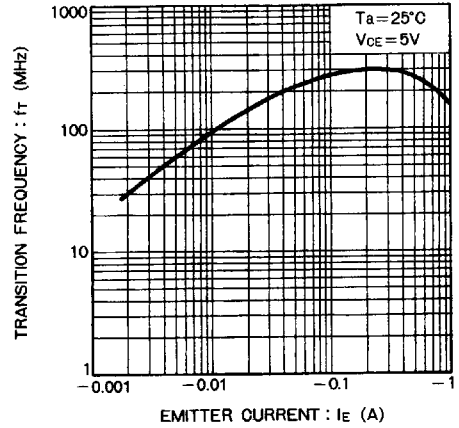


Figure 6

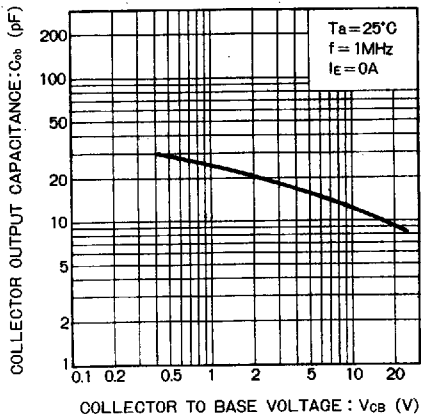


Figure 7

Ordering information

Package	Tape
Code	T100
Basic order quantity	1000
2SC5053	★
★ = Standard, ☆ = Semi-standard, * = Special order	