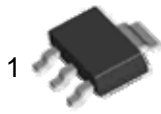


# BCP54,55,56

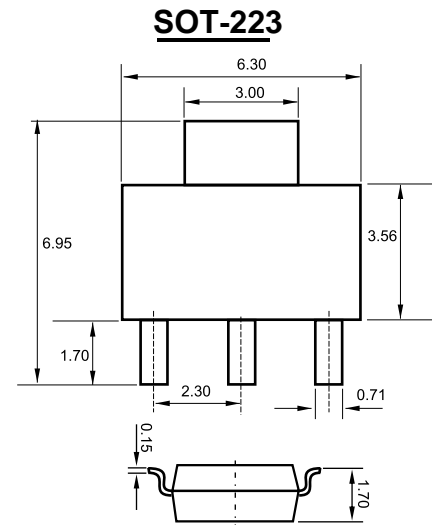
SOT-223 Transistor(NPN)



1. BASE
2. COLLECTOR
3. EMITTER

## Features

- ◇ For AF driver and output stages
- ◇ High collector current
- ◇ Low collector-emitter saturation voltage
- ◇ Complementary types: BCP51 ... BCP53 (PNP)



## MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Dimensions in inches and (millimeters)

Symbol	Parameter	BCP54	BCP55	BCP56	Units
V <sub>CB0</sub>	Collector-Base Voltage	45	60	100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	45	60	80	V
V <sub>EBO</sub>	Emitter-Base Voltage	5			V
I <sub>C</sub>	Collector Current -Continuous	1			A
P <sub>C</sub>	Collector Power Dissipation	1.5			W
R <sub>θJA</sub>	Thermal Resistance Junction to Ambient	94			°C/W
T <sub>stg</sub>	Storage Temperature Range	-65to+150			°C

## ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)

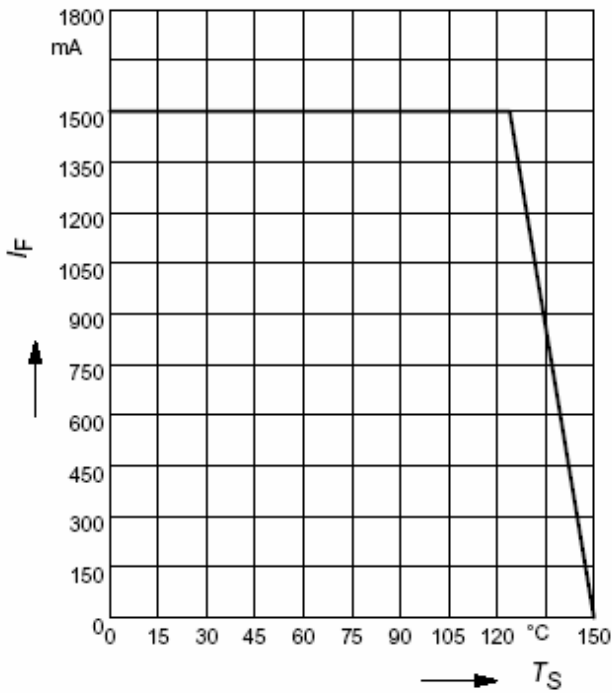
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	BCP54 BCP55 BCP56	V <sub>(BR)CBO</sub> I <sub>C</sub> = 0.1mA, I <sub>E</sub> =0	45		V
			60		
			100		
Collector-emitter breakdown voltage	BCP54 BCP55 BCP56	V <sub>(BR)CEO</sub> I <sub>C</sub> = 10mA, I <sub>B</sub> =0	45		V
			60		
			80		
Base-emitter breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> =0	5		V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 30 V, I <sub>E</sub> =0		100	nA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> =5mA	25		
	h <sub>FE(2)</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> =150m A	63	250	
	h <sub>FE(3)</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> =500m A	25		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		0.5	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =500m A		1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA, f=100MHZ	100		MHz

## CLASSIFICATION OF h<sub>FE(2)</sub>

Rank	BCP54-10, BCP55-10, BCP56-10	BCP54-16, BCP55-16, BCP56-16
Range	63-160	100-250

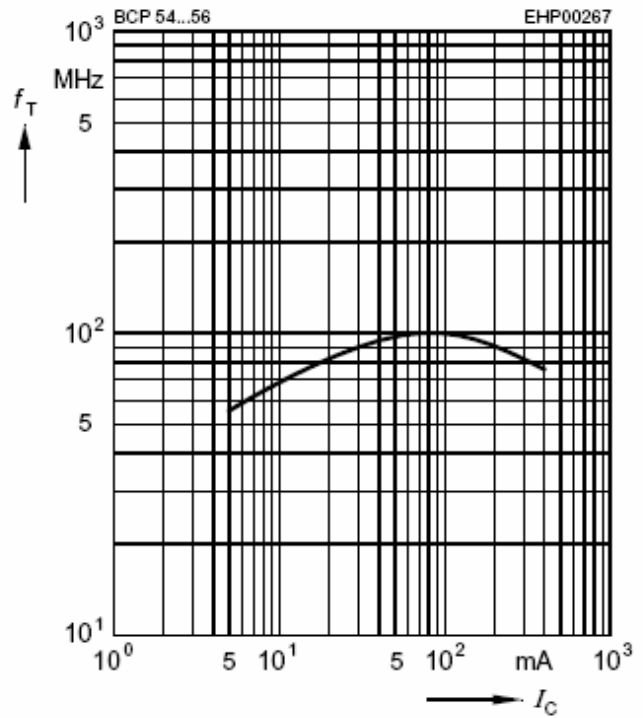
## Typical Characteristics

Total power dissipation  $P_{tot} = f(T_S)$



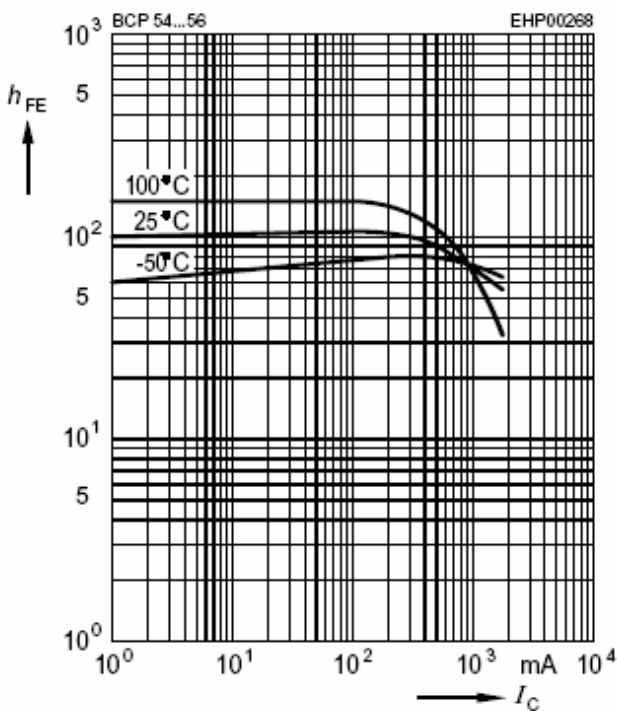
Transition frequency  $f_T = f(I_C)$

$V_{CE} = 10V$



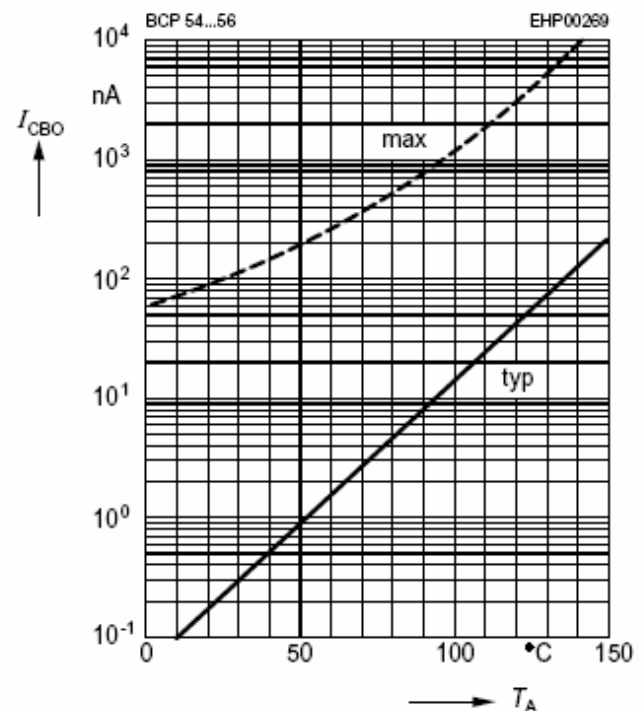
DC current gain  $h_{FE} = f(I_C)$

$V_{CE} = 2V$



Collector cutoff current  $I_{CBO} = f(T_A)$

$V_{CB} = 30V$



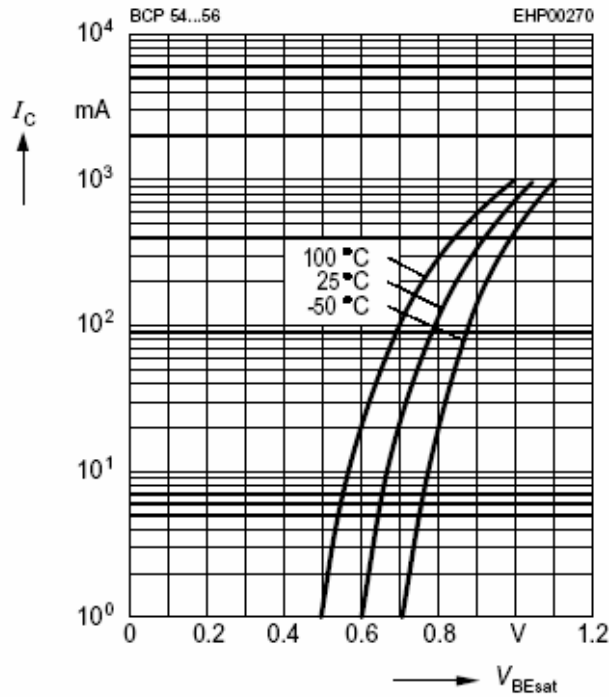
# BCP54,55,56

SOT-223 Transistor(NPN)



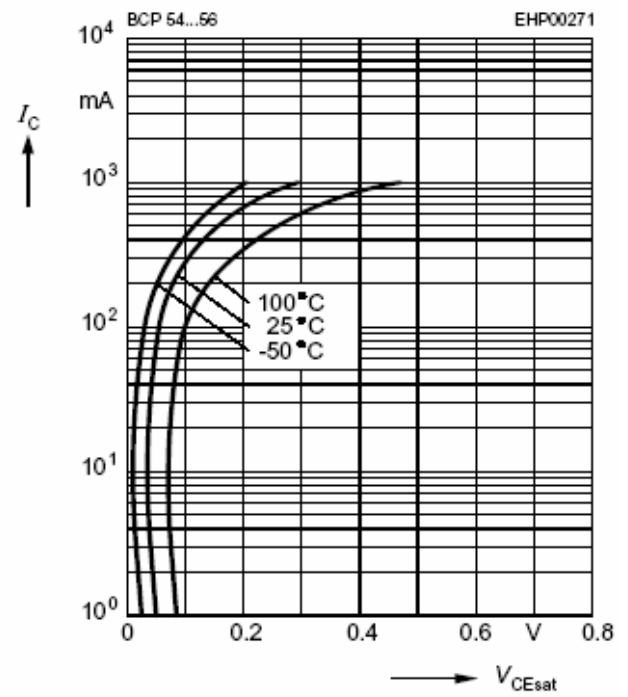
## Base-emitter saturation voltage

$$I_C = f(V_{BEsat}), h_{FE} = 10$$



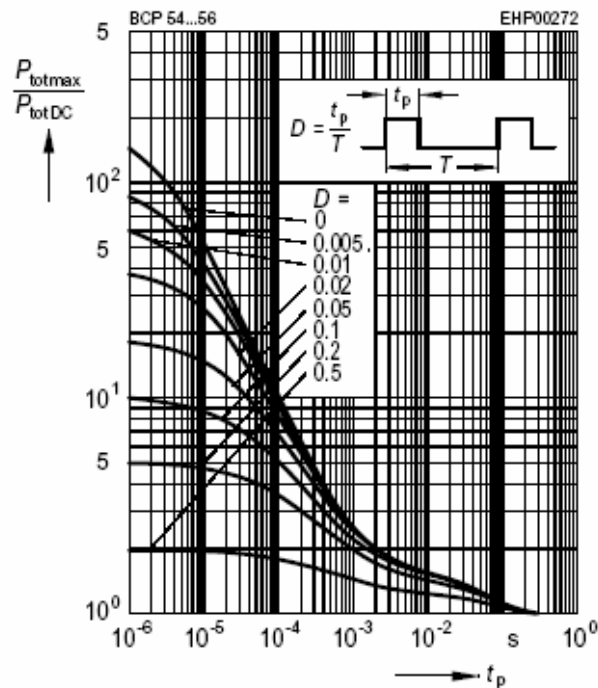
## Collector-emitter saturation voltage

$$I_C = f(V_{CEsat}), h_{FE} = 10$$



## Permissible pulse load

$$P_{totmax} / P_{totDC} = f(t_p)$$



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