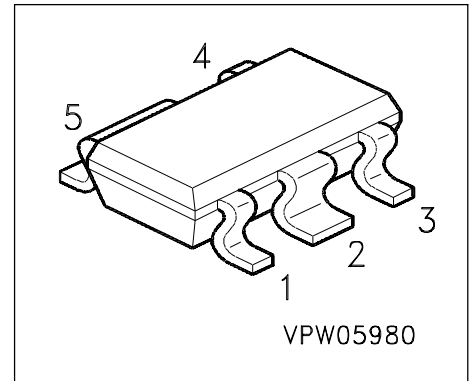


### PNP Silicon AF Power Transistor

#### Preliminary data

- For AF driver and output stages
- High collector current
- High current gain
- Low collector-emitter saturation voltage



Type	Marking	Ordering Code	Pin Configuration					Package
BCP 72	PAs	Q62702-	1 = E	2 = C	3 = E	4 = B	5 = C	SOT-23-5

#### Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	$V_{CEO}$	15	V
Collector-base voltage	$V_{CBO}$	15	
Emitter-base voltage	$V_{EBO}$	5	
DC collector current	$I_C$	3	A
Peak collector current	$I_{CM}$	6	
Base current	$I_B$	200	mA
Peak base current	$I_{BM}$	500	
Total power dissipation, $T_S = 99^\circ\text{C}$	$P_{tot}$	1.7	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	- 65 ... + 150	

#### Thermal Resistance

Junction ambient <sup>1)</sup>	$R_{thJA}$	$\leq 55$	K/W
Junction - soldering point	$R_{thJS}$	$\leq 30$	

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 6cm<sup>2</sup> Cu

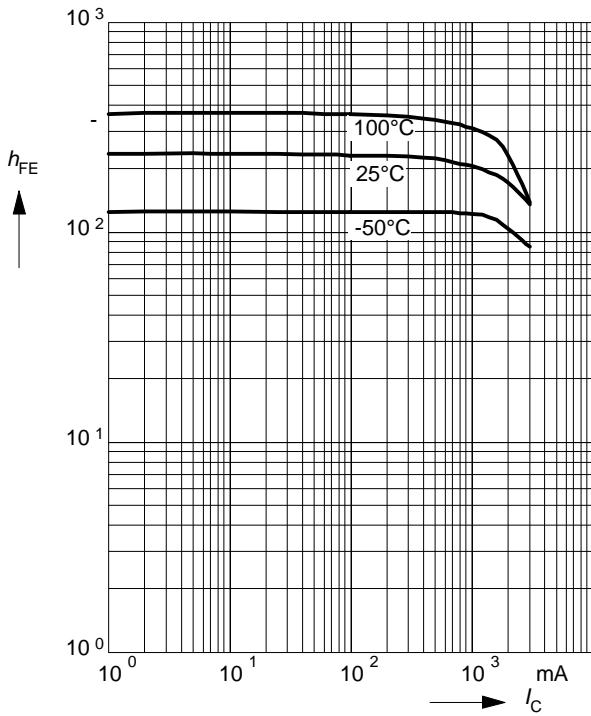
## Electrical Characteristics at $T_A=25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$	$V_{(BR)CEO}$	15	-	-	V
Collector-base breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$	$V_{(BR)CBO}$	15	-	-	
Base-emitter breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current $V_{CB} = 15 \text{ V}, I_E = 0, T_A = 25^\circ\text{C}$ $V_{CB} = 15 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	$I_{CBO}$	-	-	100 20	nA $\mu\text{A}$
Emitter cutoff current $V_{EB} = 4 \text{ V}, I_C = 0$	$I_{EBO}$	-	-	100	nA
DC current gain $I_C = 10 \text{ mA}, V_{CE} = 5 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 1 \text{ V}$ $I_C = 1 \text{ A}, V_{CE} = 2 \text{ V}$	$h_{FE}$	25 85 50	- - -	- 475 -	-
Collector-emitter saturation voltage 1) $I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$	$V_{CEsat}$	-	0.15	-	V
Base-emitter saturation voltage 1) $I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$	$V_{BEsat}$	-	-	1.2	mV
<b>AC Characteristics</b>					
Transition frequency $I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V}, f = 100 \text{ MHz}$	$f_T$	-	100	-	MHz
Collector-base capacitance $V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	$C_{cb}$	-	50	-	pF

1) Pulse test:  $t < 300\mu\text{s}; D < 2\%$

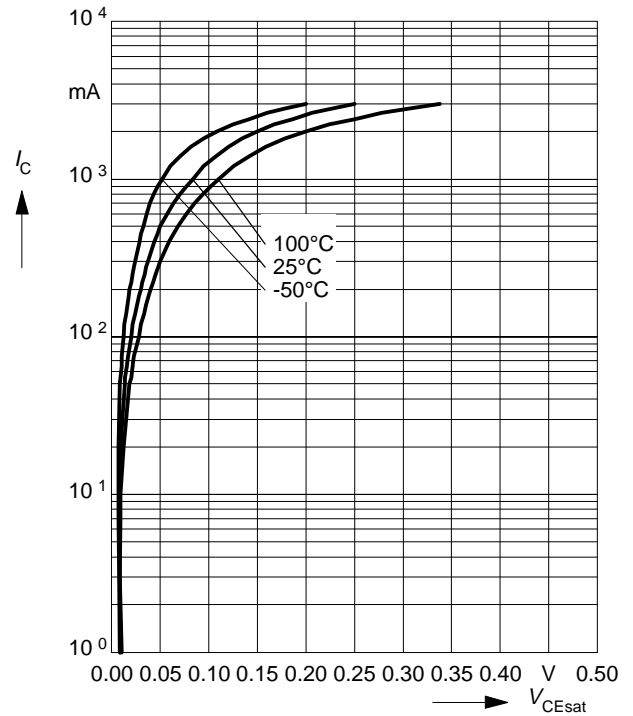
**DC current gain  $h_{FE} = f(I_C)$**

$V_{CE} = 2V$



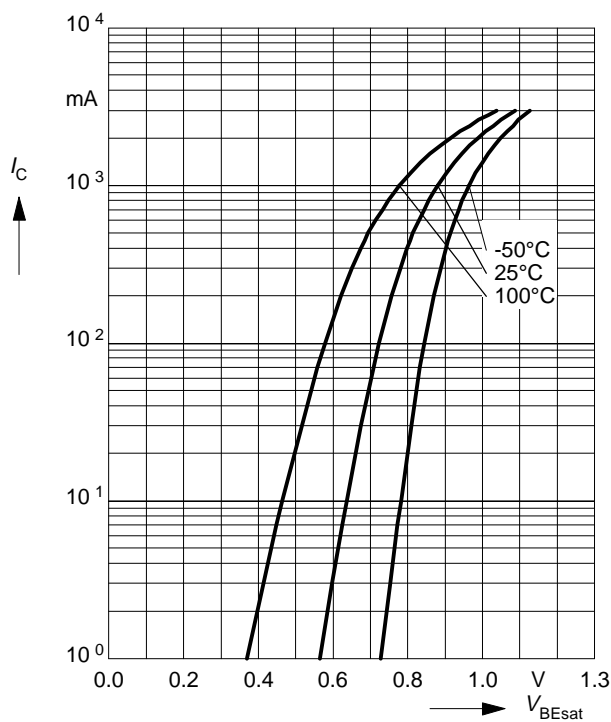
**Collector-emitter saturation voltage  $I_C = f(V_{CEsat}), h_{FE} = 10$**

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



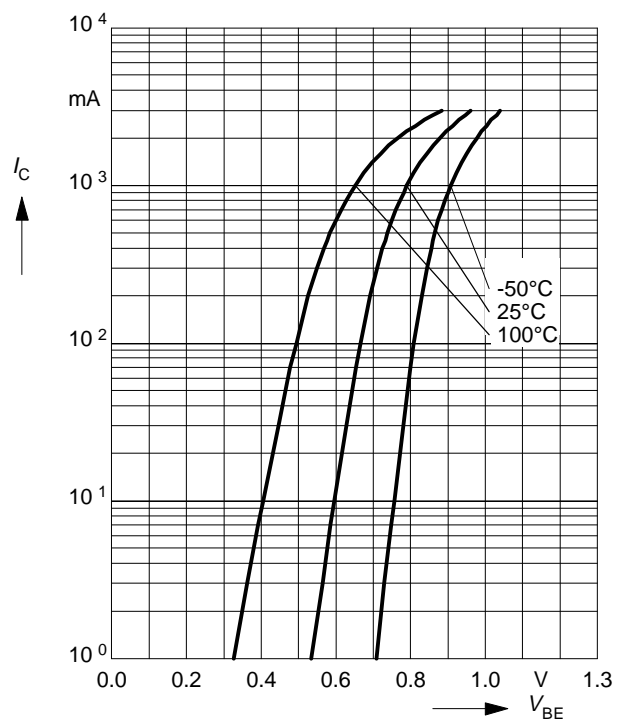
**Base-emitter saturation voltage  $I_C = f(V_{BEsat}), h_{FE} = 10$**

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



**Collector current  $I_C = f(V_{BE})$**

$V_{CE} = 2V$





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