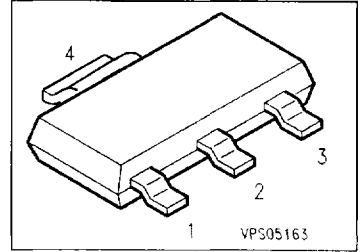# SIEMENS

PNP Silicon AF Transistor   BCP 69

- For general AF application
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type: BCP 68 (NPN)

Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	4	Package[1]
BCP 69	BCP 69	Q62702-C2130	B	C	E	C	SOT-223
BCP 69-10	BCP 69-10	Q62702-C2131					
BCP 69-16	BCP 69-16	Q62702-C2132					
BCP 69-25	BCP 69-25	Q62702-C2133					

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}	20	V
	V_{CES}	25	
Collector-base voltage	V_{CBO}	25	
Emitter-base voltage	V_{EBO}	5	
Collector current	I_C	1	A
Peak collector current	I_{CM}	2	
Base current	I_B	100	mA
Peak base current	I_{BM}	200	
Total power dissipation, $T_S = 124 \,°C$ [2]	P_{tot}	1.5	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	$-65 \ldots +150$	

Thermal Resistance

Junction - ambient [2]	$R_{th\,JA}$	≤ 72	K/W
Junction - soldering point	$R_{th\,JS}$	≤ 17	

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[1] For detailed information see chapter Package Outlines.
[2] Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

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BCP 69

Electrical Characteristics
at T_A = 25 °C, unless otherwise specified.

Parameter	Symbol	min.	typ.	max.	Unit
DC characteristics					
Collector-emitter breakdown voltage I_C = 30 mA, I_B = 0	$V_{(BR)CEO}$	20	–	–	V
Collector-emitter breakdown voltage I_C = 10 μA, V_{BE} = 0	$V_{(BR)CES}$	25	–	–	
Collector-base breakdown voltage I_C = 10 μA, I_B = 0	$V_{(BR)CBO}$	25	–	–	
Emitter-base breakdown voltage I_E = 10 μA, I_B = 0	$V_{(BR)EBO}$	5	–	–	
Collector-base cutoff current V_{CB} = 25 V	I_{CBO}	–	–	100	nA
V_{CB} = 25 V, T_A = 150 °C		–	–	100	μA
Emitter-base cutoff current V_{EB} = 5 V, I_C = 0	I_{EBO}	–	–	100	nA
DC current gain[1] I_C = 5 mA, V_{CE} = 10 V	h_{FE}	50	–	–	–
I_C = 500 mA, V_{CE} = 1 V BCP 69		85	–	375	
BCP 69-10		85	100	160	
BCP 69-16		100	160	250	
BCP 69-25		160	250	375	
I_C = 1 A, V_{CE} = 1 V		60	–	–	
Collector-emitter saturation voltage[1] I_C = 1 A, I_B = 100 mA	V_{CEsat}	–	–	0.5	V
Base-emitter voltage[1] I_C = 5 mA, V_{CE} = 10 V	V_{BE}	–	0.6	–	
I_C = 1 A, V_{CE} = 1 V		–	–	1	
AC characteristics					
Transition frequency I_C = 100 mA, V_{CE} = 5 V, f = 100 MHz	f_T	–	100	–	MHz

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[1] Pulse test conditions: $t \le 300$ μs, D = 2 %.
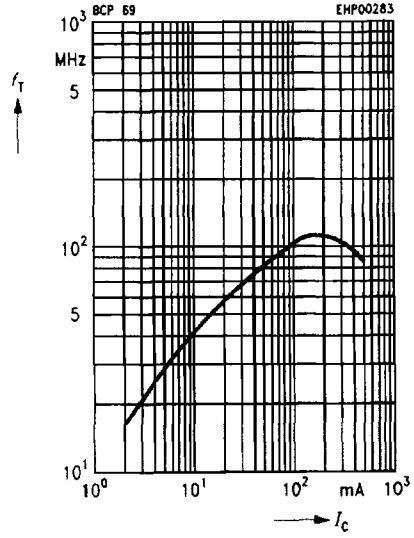
Semiconductor Group 550

Total power dissipation $P_{tot} = f(T_A*; T_S)$
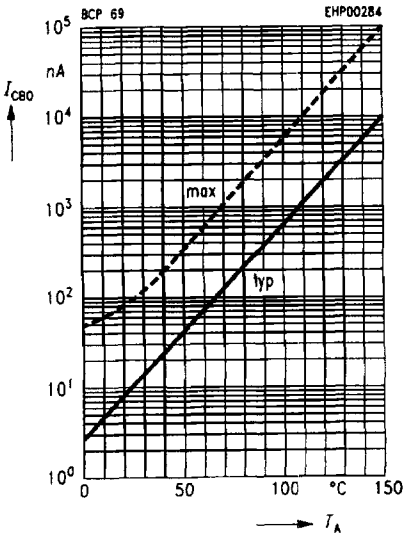*** Package mounted on epoxy**

Transition frequency $f_T = f(I_C)$
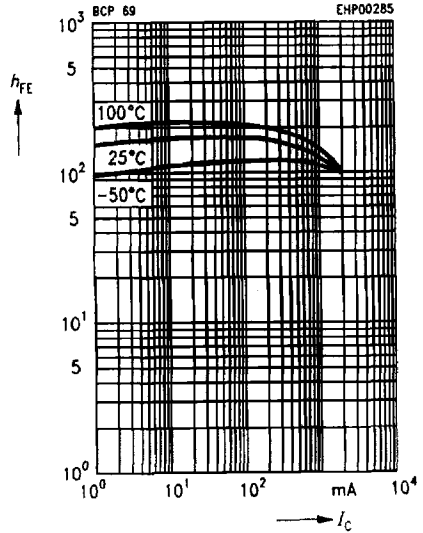$V_{CE} = 5$ V, $f = 100$ MHz

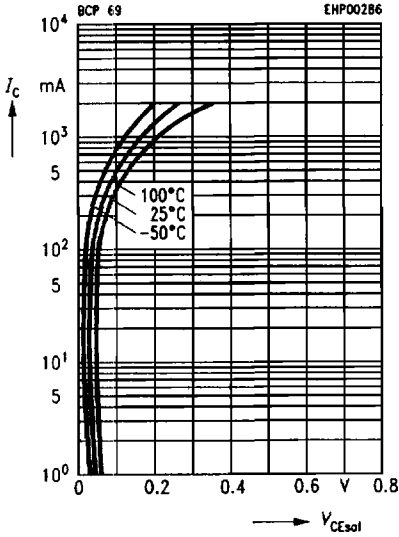## Collector cutoff current $I_{CBO} = f(T_A)$
$V_{CB} = 25$ V

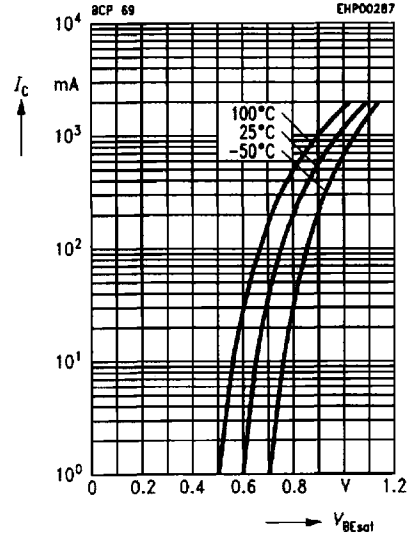## DC current gain $h_{FE} = f(I_C)$
$V_{CB} = 1$ V

Collector-emitter saturation voltage

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

Base-emitter saturation voltage

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

Permissible pulse load $P_{tot\,max}/P_{tot\,DC} = f(t_P)$