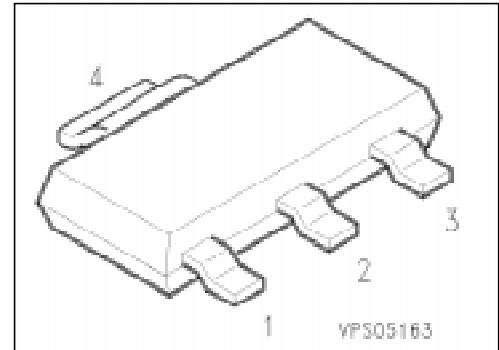


NPN Silicon AF Transistor

BCP 68

- For general AF application
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type: BCP 69 (PNP)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration				Package ¹⁾
			1	2	3	4	
BCP 68	BCP 68	Q62702-C2126	B	C	E	C	SOT-223
BCP 68-10	BCP 68-10	Q62702-C2127					
BCP 68-16	BCP 68-16	Q62702-C2128					
BCP 68-25	BCP 68-25	Q62702-C2129					

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	20	V
	V_{CES}	25	
	V_{CB0}	25	
Collector-base voltage	V_{CB0}	25	
Emitter-base voltage	V_{EB0}	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, $T_s = 124\text{ °C}^2)$	P_{tot}	1.5	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	- 65 ... + 150	

Thermal Resistance

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

¹⁾ For detailed information see chapter Package Outlines.

²⁾ Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

Electrical Characteristics

at $T_A = 25\text{ °C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC characteristics

Collector-emitter breakdown voltage $I_C = 30\text{ mA}, I_B = 0$	$V_{(BR)CE0}$	20	–	–	V
Collector-emitter breakdown voltage $I_C = 10\text{ }\mu\text{A}, V_{BE} = 0$	$V_{(BR)CES}$	25	–	–	
Collector-base breakdown voltage $I_C = 10\text{ }\mu\text{A}, I_B = 0$	$V_{(BR)CB0}$	25	–	–	
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}, I_B = 0$	$V_{(BR)EB0}$	5	–	–	
Collector-base cutoff current $V_{CB} = 25\text{ V}$ $V_{CB} = 25\text{ V}, T_A = 150\text{ °C}$	I_{CB0}	– –	– –	100 100	nA μA
Emitter-base cutoff current $V_{EB} = 5\text{ V}, I_C = 0$	I_{EB0}	–	–	100	nA
DC current gain ¹⁾ $I_C = 5\text{ mA}, V_{CE} = 10\text{ V}$ $I_C = 500\text{ mA}, V_{CE} = 1\text{ V}$ $I_C = 1\text{ A}, V_{CE} = 1\text{ V}$	h_{FE}	50 85 85 100 160 60	– – 100 160 250 –	– 375 160 250 375 –	–
Collector-emitter saturation voltage ¹⁾ $I_C = 1\text{ A}, I_B = 100\text{ mA}$	V_{CEsat}	–	–	0.5	V
Base-emitter voltage ¹⁾ $I_C = 5\text{ mA}, V_{CE} = 10\text{ V}$ $I_C = 1\text{ A}, V_{CE} = 1\text{ V}$	V_{BE}	– –	0.6 –	– 1	

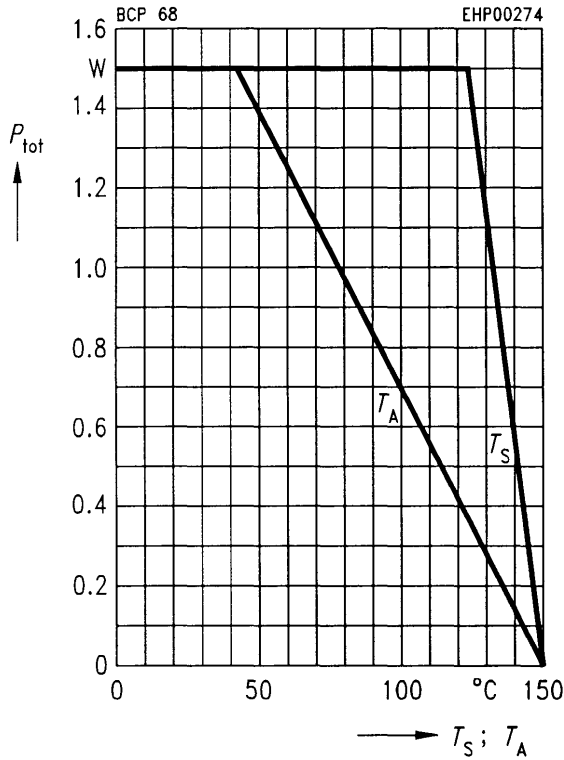
AC characteristics

Transition frequency $I_C = 100\text{ mA}, V_{CE} = 5\text{ V}, f = 100\text{ MHz}$	f_T	–	100	–	MHz
--	-------	---	-----	---	-----

¹⁾ Pulse test conditions: $t \leq 300\text{ }\mu\text{s}, D = 2\text{ %}$.

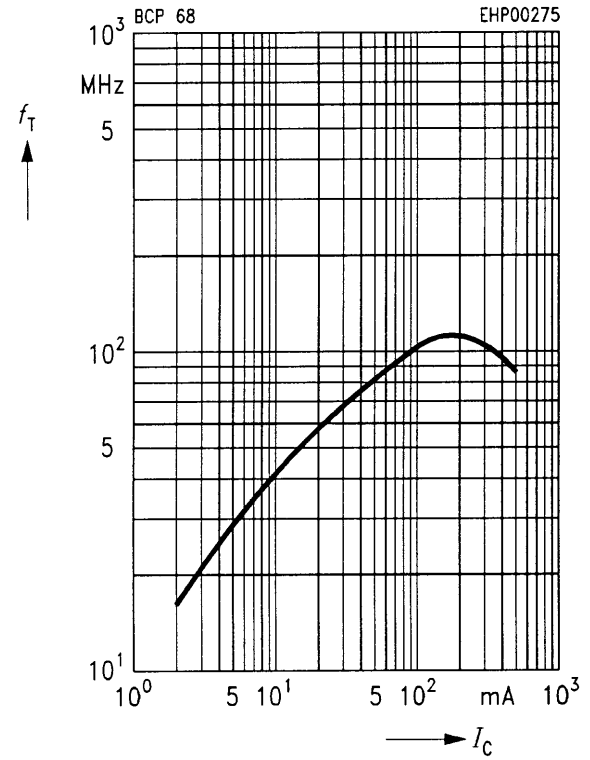
Total power dissipation $P_{tot} = f(T_A^*; T_S)$

* Package mounted on epoxy



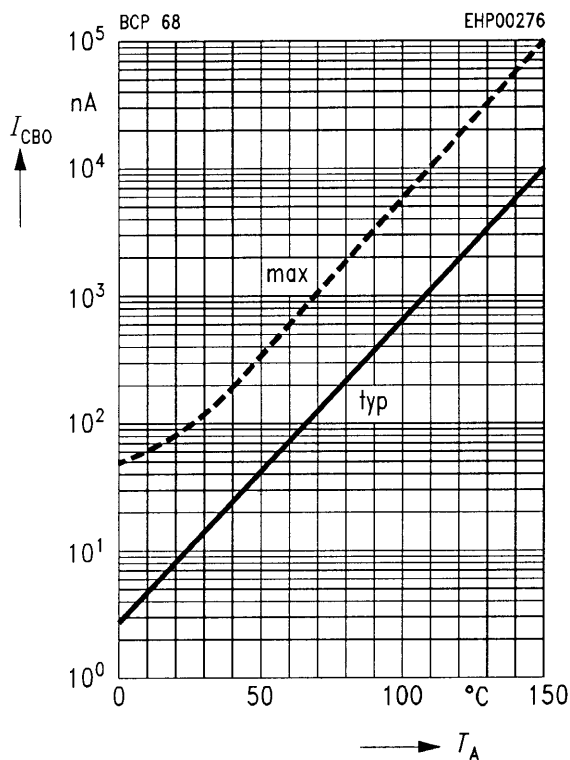
Transition frequency $f_T = f(I_C)$

$V_{CE} = 5 V, f = 100 MHz$



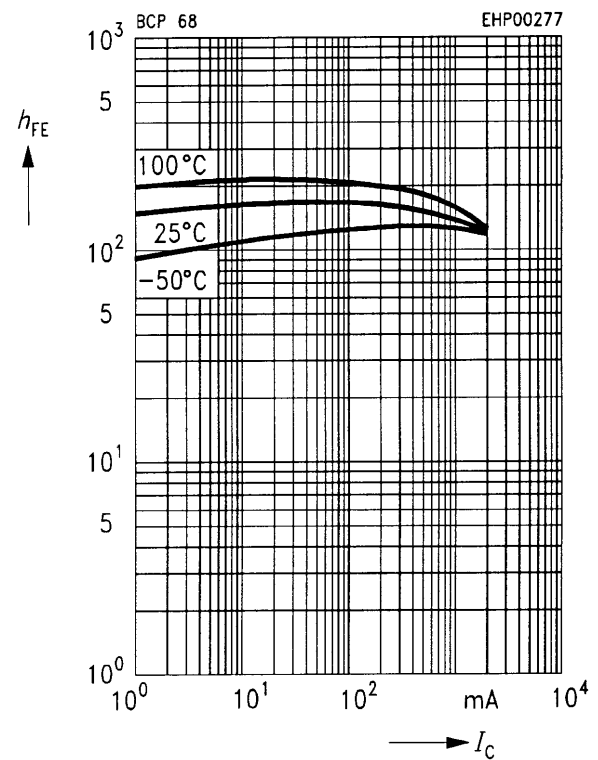
Collector cutoff current $I_{CB0} = f(T_A)$

$V_{CB} = 25 V$



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

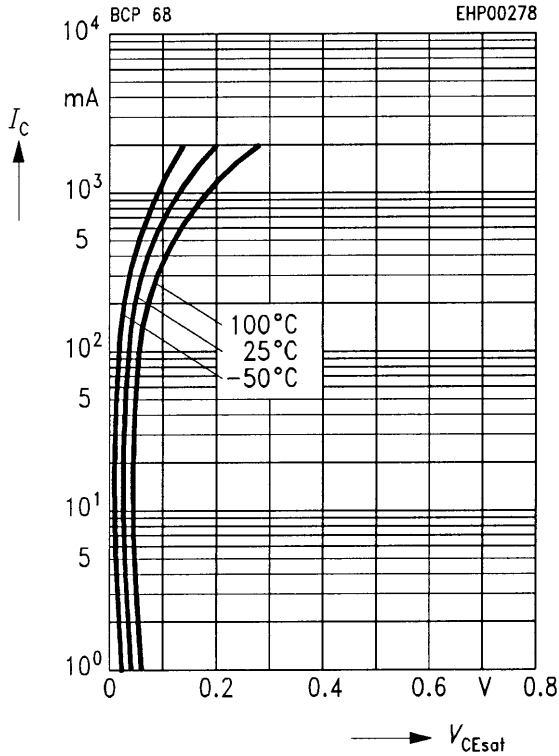
$V_{CB} = 1 V$



Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$

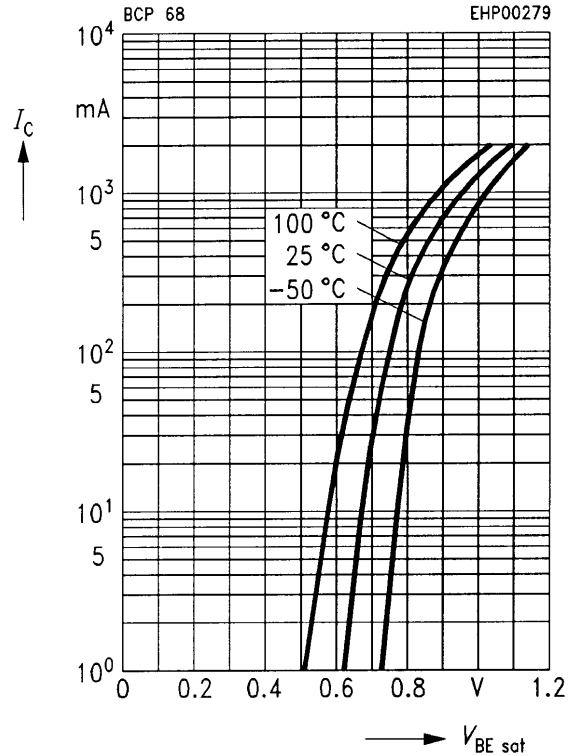
$h_{FE} = 10$



Base-emitter saturation voltage

$I_C = f(V_{BEsat})$

$h_{FE} = 10$



Permissible pulse load $P_{tot max}/P_{tot DC} = f(t_p)$

