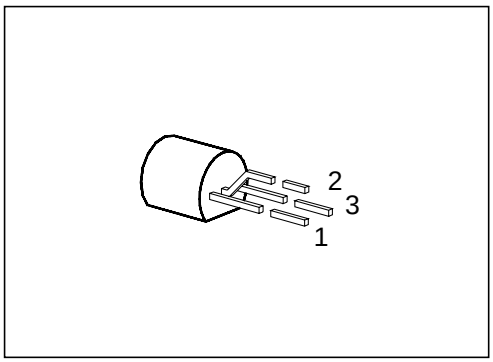
SIEMENS

NPN Silicon AF Transistor — BC 368

- High current gain
- High collector current
- Low collector-emitter saturation voltage
- Complementary type: BC 369 (PNP)



Type	Marking	Ordering Code	Pin Configuration 1	2	3	Package[1]
BC 368	–	C62702-C747	E	C	B	TO-92

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CE0}	20	V
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_C = 90 ˚C[2]	P_{tot}	0.8 (1)	W
Junction temperature	T_j	150	˚C
Storage temperature range	T_{stg}	– 65 … + 150	

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 156	K/W
Junction - case[3]	$R_{th\ JC}$	≤ 75	

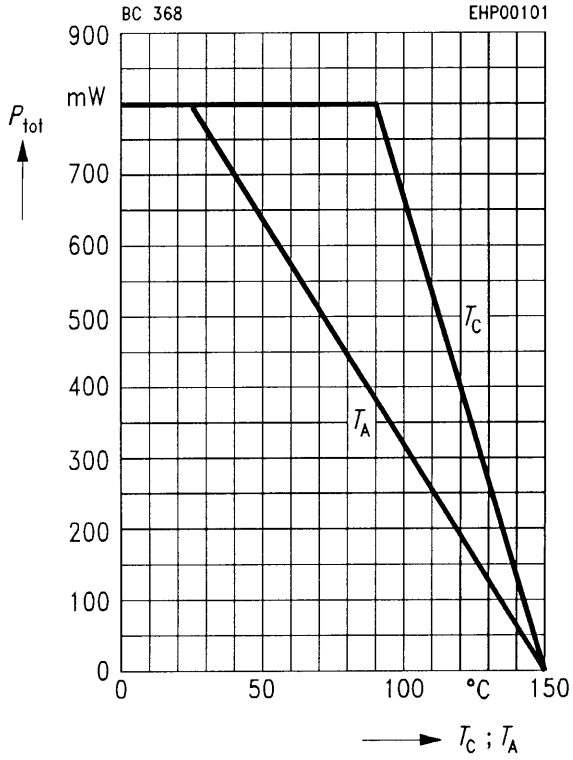
1) For detailed information see chapter Package Outlines.
2) If transistors with max. 4 mm lead length are fixed on PCBs with a min. 10 mm × 10 mm large copper area for the collector terminal, R_{thJA} = 125 K/W and thus $P_{tot\ max}$ = 1 W at T_A = 25 ˚C.
3) Mounted on Al heat sink 15 mm × 25 mm × 0.5 mm.

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

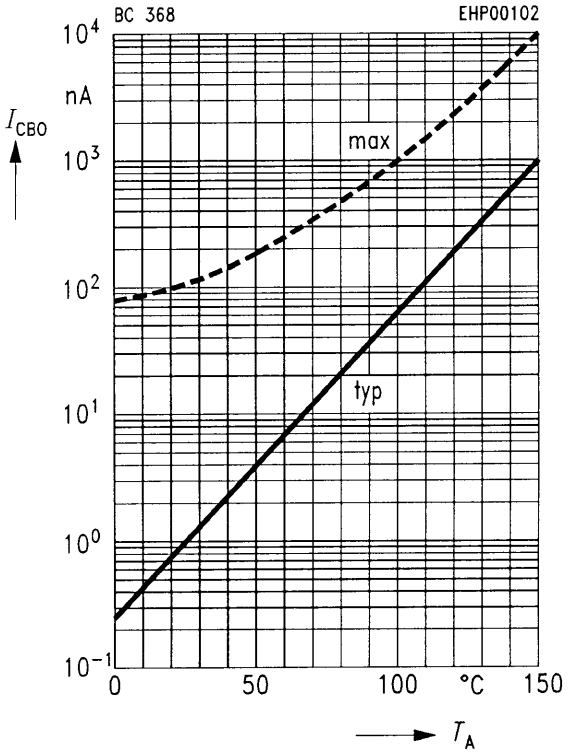
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 30 mA	$V_{(BR)CE0}$	20	–	–	V
Collector-base breakdown voltage I_C = 10 µA	$V_{(BR)CB0}$	25	–	–	
Emitter-base breakdown voltage I_E = 1 µA	$V_{(BR)EB0}$	5	–	–	
Collector cutoff current V_{CB} = 25 V V_{CB} = 25 V, T_A = 150 °C	I_{CB0}	 – –	 – –	 100 10	 nA µA
Emitter cutoff current V_{EB} = 5 V	I_{EB0}	–	–	100	nA
DC current gain I_C = 5 mA; V_{CE} = 10 V I_C = 500 mA; V_{CE} = 1 V[1)] I_C = 1 A; V_{CE} = 1 V[1)]	h_{FE}	 50 85 60	 – 160 –	 – 375 –	–
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 I_C = 1 A; V_{CE} = 1 V	V_{BE}	 – –	 0.6 –	 – 1	
AC characteristics					
Transition frequency I_C = 100 mA, V_{CE} = 5 V, f = 20 MHz	f_T	–	100	–	MHz

1) Pulse test: $t \leq 300$ µs, $D \leq 2$ %.

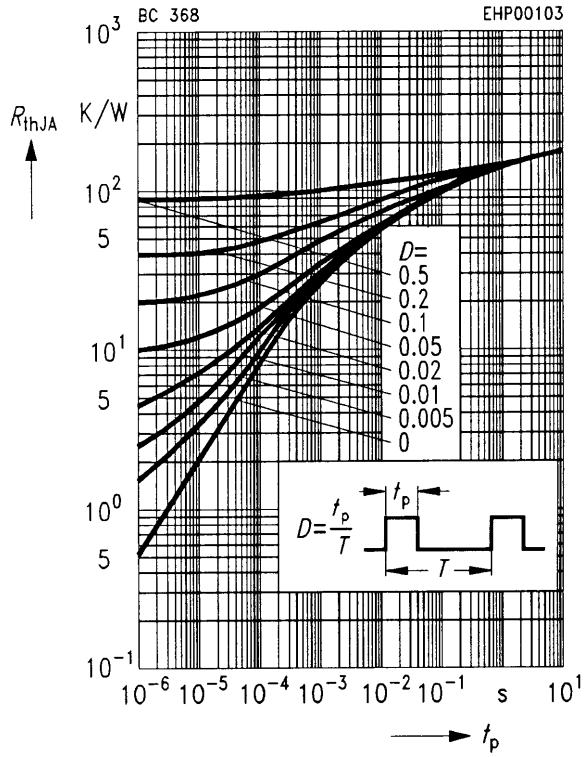
Total power dissipation $P_{tot} = f(T_A; T_C)$



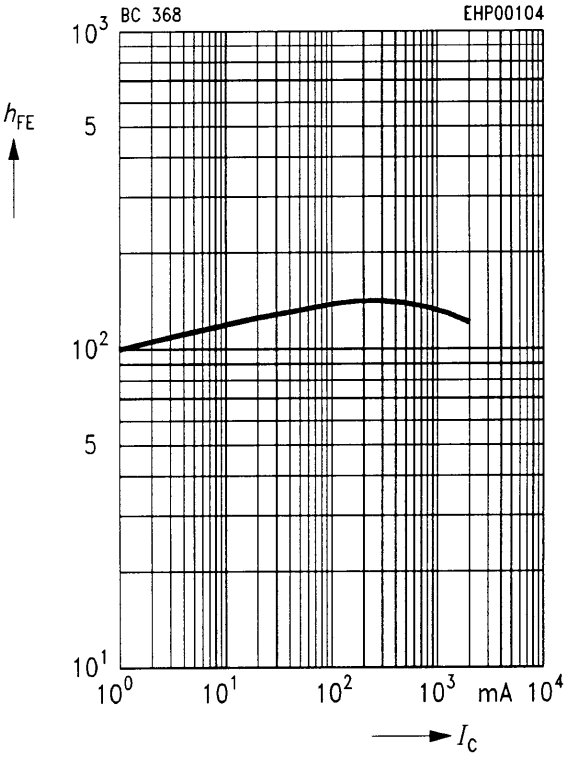
Collector cutoff current $I_{CB0} = f(T_A)$
V_{CB} = 25 V



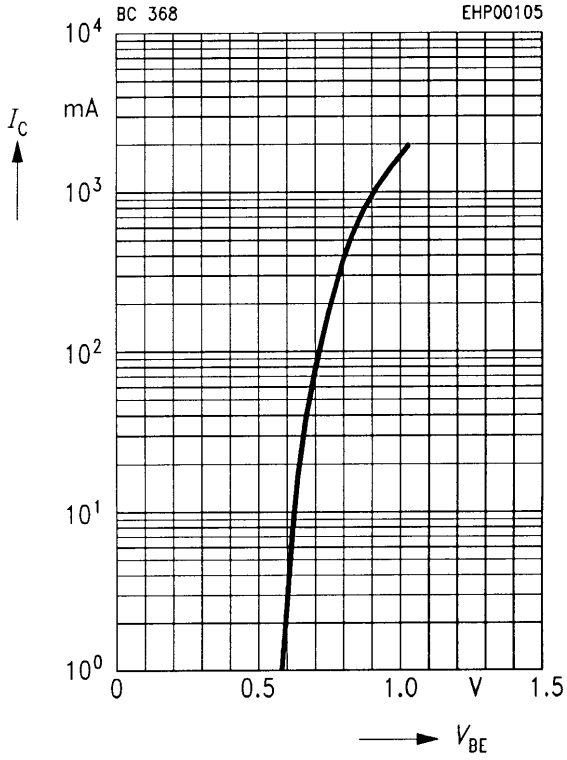
Permissible pulse load $R_{thJA} = f(t_p)$



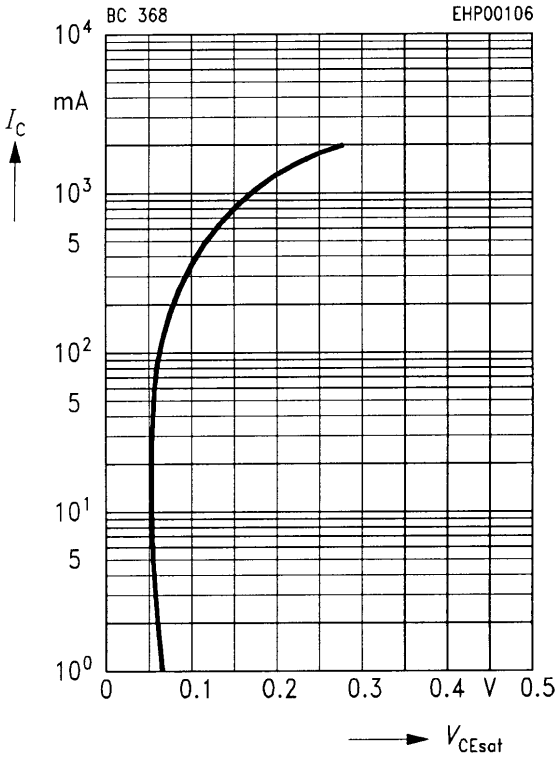
DC current gain $h_{FE} = f(I_C)$
V_{CE} = 1 V, T_A = 25 ˚C



Collector current $I_C = f(V_{BE})$
V_{CE} = 1 V



Collector-emitter saturation voltage
$V_{CEsat} = f(I_C)$
h_{FE} = 10, T_A = 25 °C



Transition frequency $f_T = f(I_C)$
V_{CE} = 5 V, f = 20 MHz