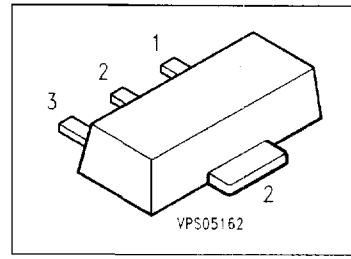
SIEMENS

PNP Silicon AF Transistors

BCX 69

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



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	Package[1]
BCX 69	–	Q62702-C1714	B	C	E	SOT-89
BCX 69-10	CF	Q62702-C1867				
BCX 69-16	CG	Q62702-C1868				
BCX 69-25	CH	Q62702-C1869				

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}	20	V
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 = 130 °C	P_{tot}	1	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	– 65 ... + 150	

Thermal Resistance

Junction - ambient[2]	$R_{th\ JA}$	≤ 75	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 20	

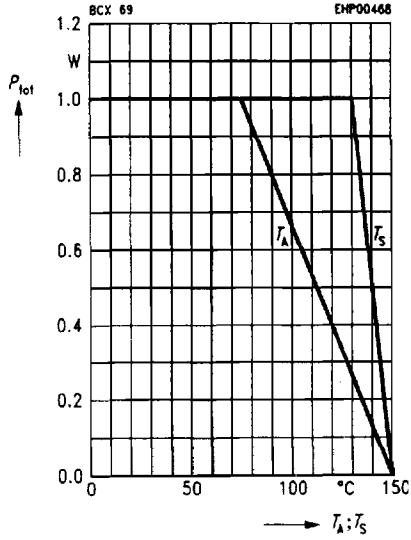
1) For detailed information see chapter Package Outlines.
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm² Cu.

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

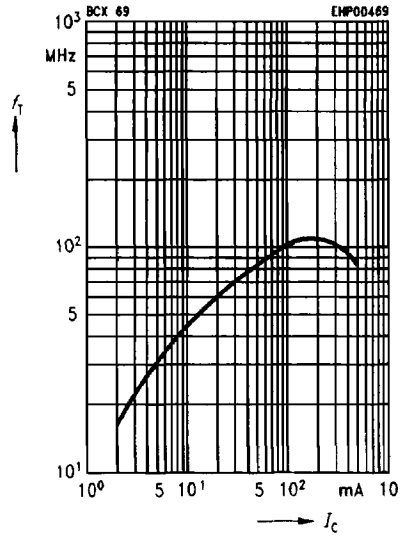
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 30 mA	$V_{(BR)CEO}$	20	–	–	V
Collector-base breakdown voltage I_C = 10 µA	$V_{(BR)CBO}$	25	–	–	
Emitter-base breakdown voltage I_E = 1 µA	$V_{(BR)EBO}$	5	–	–	
Collector cutoff current V_{CB} = 25 V V_{CB} = 25 V, T_A = 150 °C	I_{CBO}	 – –	 – –	 100 100	 nA µA
Emitter cutoff current V_{EB} = 5 V	I_{EBO}	–	–	10	µA
DC current gain[1] I_C = 5 mA, V_{CE} = 10 V I_C = 500 mA, V_{CE} = 1 V BCX 69 BCX 69-10 BCX 69-16 BCX 69-25 I_C = 1 A, V_{CE} = 1 V	h_{FE}	 50 85 85 100 160 60	 – – 100 160 250 –	 – 375 160 250 375 –	–
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 = 2 %.

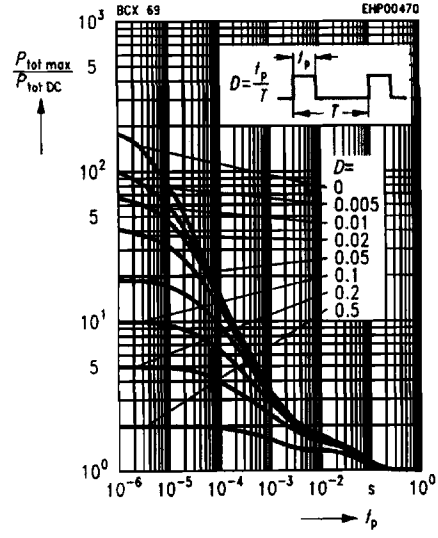
Total power dissipation $P_{tot} = f(T_A^*; T_S)$
* Package mounted on epoxy



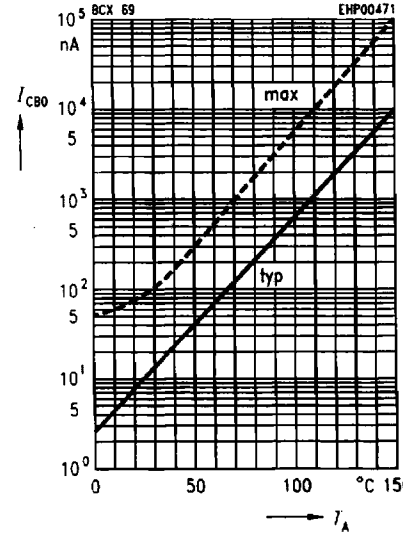
Transition frequency $f_T = f(I_C)$
V_{CE} = 5 V



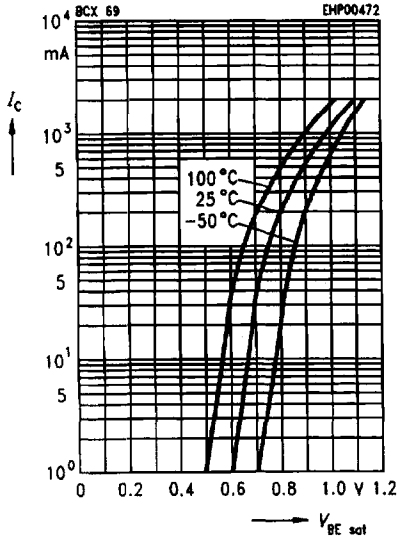
Permissible pulse load $P_{tot\,max}/P_{tot\,DC} = f(t_p)$



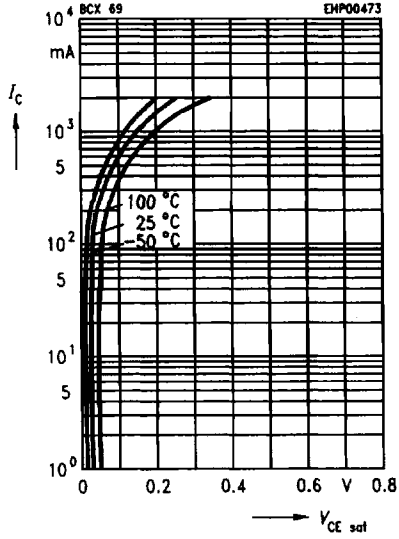
Collector cutoff current $I_{CB0} = f(T_A)$
V_{CB} = 25 V



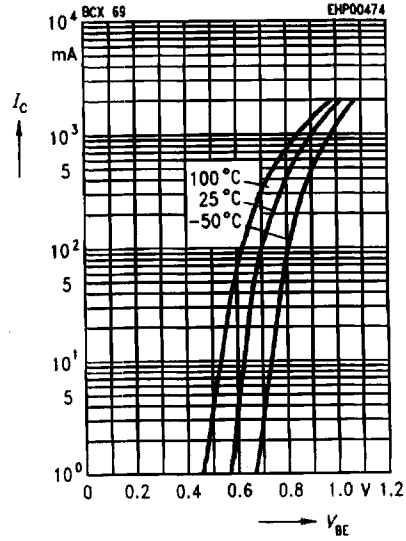
Base-emitter saturation voltage
$I_C = f(V_{BEsat})$
$h_{FE} = 10$



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



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



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