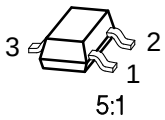
SIEMENS

NPN Silicon AF Transistors

BC 817
BC 818

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC 807, BC 808 (PNP)



Type	Marking	Ordering Code	Pin Configuration 1	2	3	Package[1)]
BC 817-16	6As	Q62702-C1732	B	E	C	SOT-23
BC 817-25	6Bs	Q62702-C1690				
BC 817-40	6Cs	Q62702-C1738				
BC 818-16	6Es	Q62702-C1739				
BC 818-25	6Fs	Q62702-C1740				
BC 818-40	6Gs	Q62702-C1505				

1) For detailed information see chapter Package Outlines.

Maximum Ratings

Parameter	Symbol	Values		Unit
		BC 817	BC 818	
Collector-emitter voltage	V_{CE0}	45	25	V
Collector-base voltage	V_{CB0}	50	30	
Emitter-base voltage	V_{EB0}	5	5	
Collector current	I_C	500		mA
Peak collector current	I_{CM}	1		A
Base current	I_B	100		mA
Peak base current	I_{BM}	200		
Total power dissipation, T_C = 79 ˚C	P_{tot}	330		mW
Junction temperature	T_j	150		˚C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient[1)]	$R_{th\ JA}$	≤ 285	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 215	

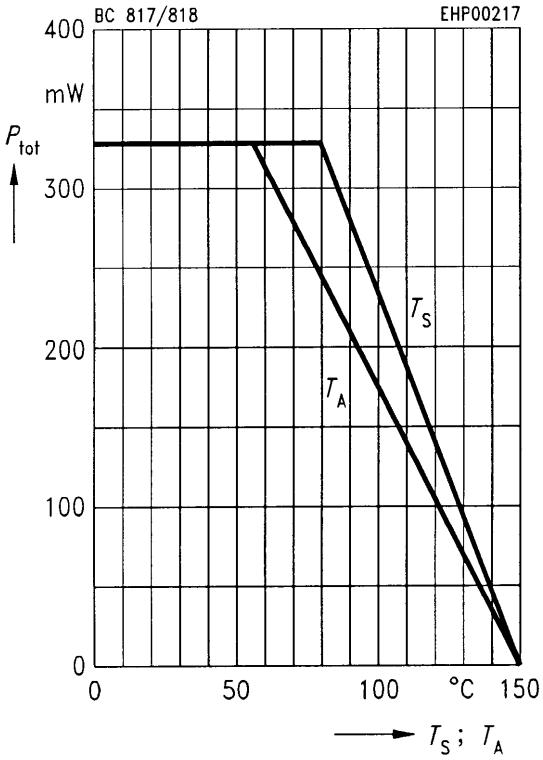
1) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm^2 Cu.

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

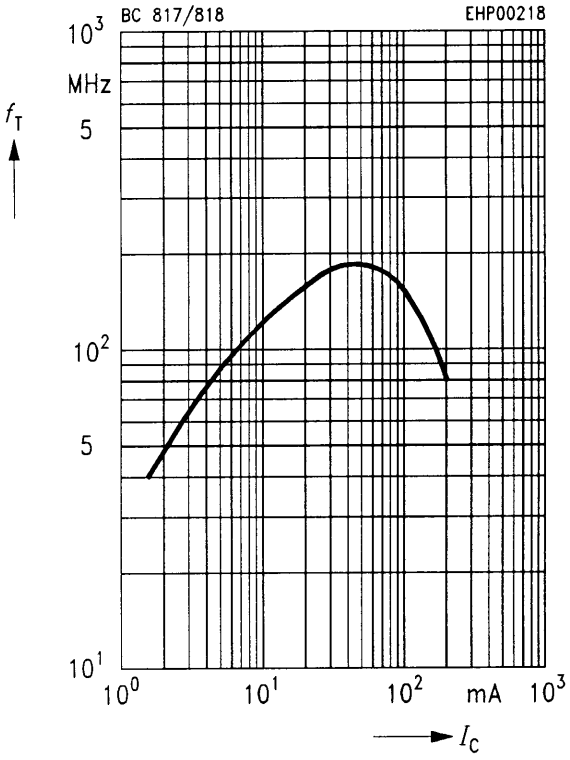
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 10 mA BC 817 BC 818	$V_{(BR)CE0}$	 45 25	 – –	 – –	V
Collector-base breakdown voltage I_C = 100 µA BC 817 BC 818	$V_{(BR)CB0}$	 50 30	 – –	 – –	
Emitter-base breakdown voltage, I_E = 10 µA	$V_{(BR)EB0}$	5	–	–	
Collector cutoff current V_{CB} = 25 V V_{CB} = 25 V, T_A = 150 ˚C	I_{CB0}	 – –	 – –	 100 5	 nA µA
Emitter cutoff current, V_{EB} = 4 V	I_{EB0}	–	–	100	nA
DC current gain[1)] I_C = 100 mA; V_{CE} = 1 V BC 817-16, BC 818-16 BC 817-25, BC 818-25 BC 817-40, BC 818-40 I_C = 300 mA; V_{CE} = 1 V BC 817-16, BC 818-16 BC 817-25, BC 818-25 BC 817-40, BC 818-40	h_{FE}	 100 160 250 60 100 170	 160 250 350 – – –	 250 400 630 – – –	–
Collector-emitter saturation voltage[1)] I_C = 500 mA; I_B = 50 mA	V_{CEsat}	–	–	0.7	V
Base-emitter saturation voltage[1)] I_C = 500 mA; I_B = 50 mA	V_{BEsat}	–	–	2	
AC characteristics					
Transition frequency I_C = 50 mA, V_{CE} = 5 V, f = 20 MHz	f_T	–	170	–	MHz
Output capacitance V_{CB} = 10 V, f = 1 MHz	C_{obo}	–	6	–	pF
Input capacitance V_{EB} = 0.5 V, f = 1 MHz	C_{ibo}	–	60	–	

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

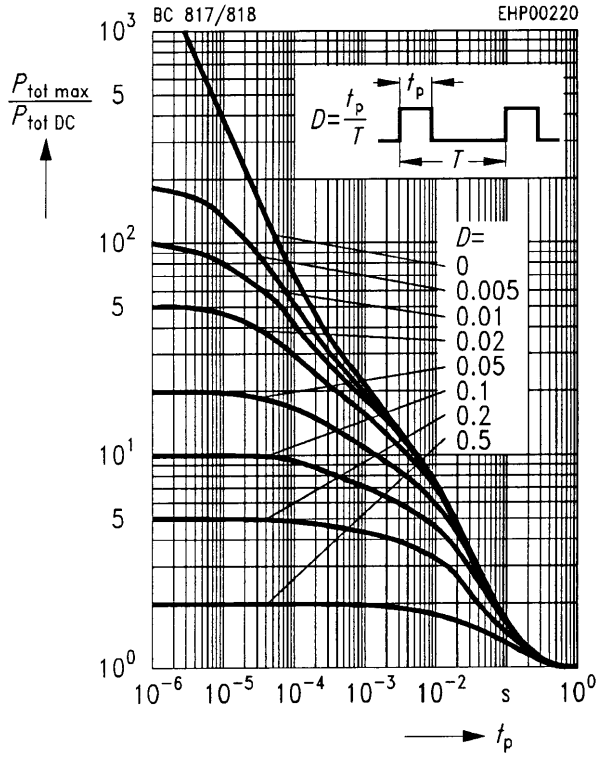
Total power dissipation $P_{tot} = f\,(T_A{}^*;\ T_S)$
* Package mounted on epoxy



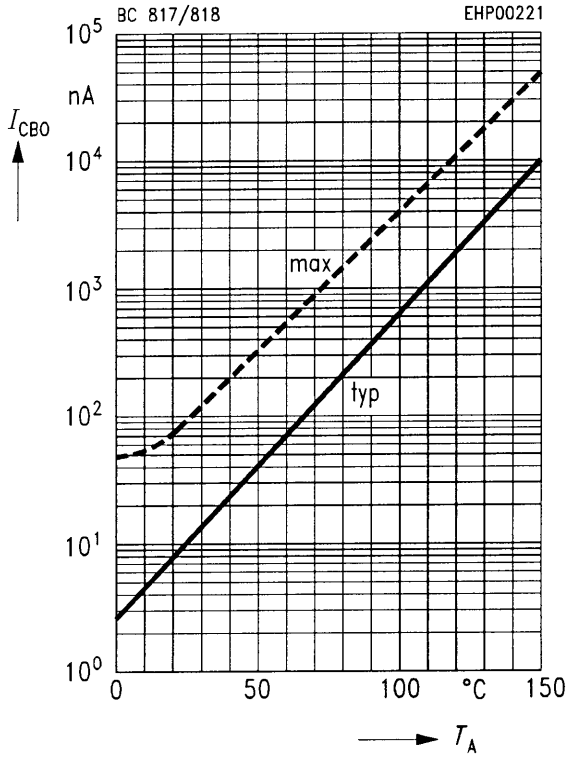
Transition frequency $f_T = f\,(I_C)$
V_{CE} = 5 V



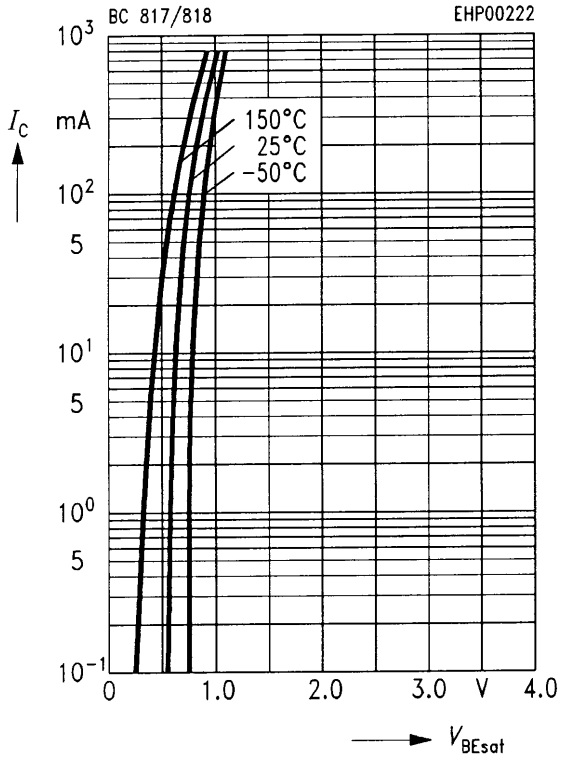
Permissible pulse load $P_{tot\,max}/P_{tot\,DC} = f\,(t_p)$



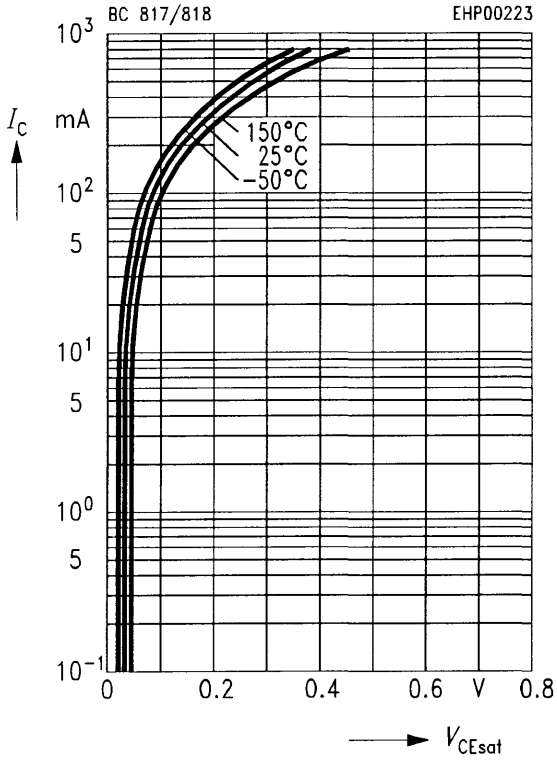
Collector cutoff current $I_{CB0} = f\,(T_A)$
V_{CB0} = 60 V



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



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



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