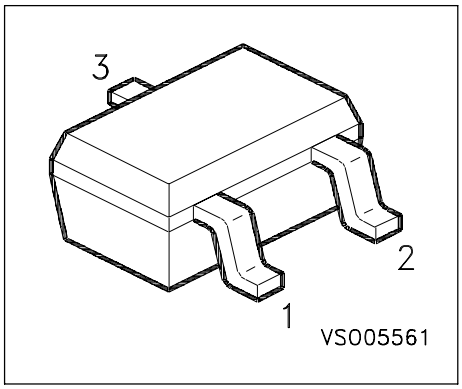
NPN Silicon AF Transistor

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC807W, BC808W (PNP)



Type	Marking	Ordering Code	Pin Configuration			Package
BC 817-16W	6As	Q62702-C2320	1 = B	2 = E	3 = C	SOT-323
BC 817-25W	6Bs	Q62702-C2278	1 = B	2 = E	3 = C	SOT-323
BC 817-40W	6Cs	Q62702-C2321	1 = B	2 = E	3 = C	SOT-323
BC 818-16W	6Es	Q62702-C2322	1 = B	2 = E	3 = C	SOT-323
BC 818-25W	6Fs	Q62702-C2323	1 = B	2 = E	3 = C	SOT-323
BC 818-40W	6Gs	Q62702-C2324	1 = B	2 = E	3 = C	SOT-323

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}		V
BC 817 W		45	
BC 818 W		25	
Collector-base voltage	V_{CBO}		
BC 817 W		50	
BC 818 W		30	
Emitter-base voltage	V_{EBO}	5	
DC collector current	I_C	500	mA
Peak collector current	I_{CM}	1	A
Base current	I_B	100	mA
Total power dissipation, T_S = 130°C	P_{tot}	250	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	- 65 ... + 150	

Thermal Resistance

Junction ambient [1)]	R_{thJA}	≤ 215	K/W
Junction - soldering point	R_{thJS}	≤ 80	

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 0.5cm^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	$V_{(BR)CEO}$				V
I_C = 10 mA, I_B = 0 , BC 817 W		45	-	-	
I_C = 10 mA, I_B = 0 , BC 818 W		25	-	-	
Collector-base breakdown voltage	$V_{(BR)CBO}$				
I_C = 10 µA, I_B = 0 , BC 817 W		50	-	-	
I_C = 10 µA, I_B = 0 , BC 818 W		30	-	-	
Base-emitter breakdown voltage	$V_{(BR)EBO}$				
I_E = 10 µA, I_C = 0		5	-	-	
Collector-base cutoff current	I_{CBO}				
V_{CB} = 25 V, T_A = 25 °C		-	-	100	nA
V_{CB} = 25 V, T_A = 150 °C		-	-	50	µA
Emitter cutoff current	I_{EBO}				nA
V_{EB} = 4 V, I_C = 0		-	-	100	
DC current gain	h_{FE}				-
I_C = 100 mA, V_{CE} = 1 V, BC ... 16 W		100	160	250	
I_C = 100 mA, V_{CE} = 1 V, BC ... 25 W		160	250	400	
I_C = 100 mA, V_{CE} = 1 V, BC ... 40 W		250	350	630	
I_C = 300 mA, V_{CE} = 1 V, BC ... 16 W		60	-	-	
I_C = 300 mA, V_{CE} = 1 V, BC ... 25 W		100	-	-	
I_C = 300 mA, V_{CE} = 1 V, BC ... 40 W		170	-	-	
Collector-emitter saturation voltage 1)	V_{CEsat}				V
I_C = 500 mA, I_B = 50 mA		-	-	0.7	
Base-emitter saturation voltage 1)	V_{BEsat}				
I_C = 500 mA, I_B = 50 mA		-	-	1.2	

1) Pulse test: t < 300µs; D < 2%

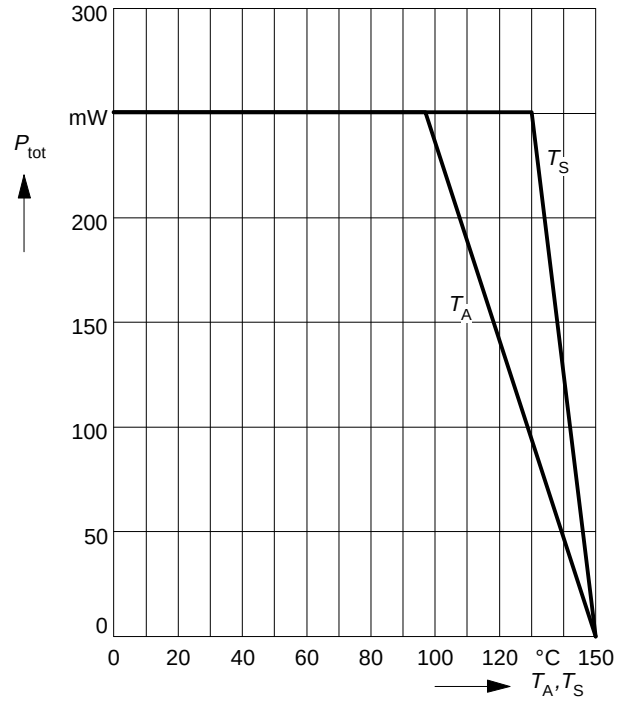
NPN Silicon AF Transistor

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

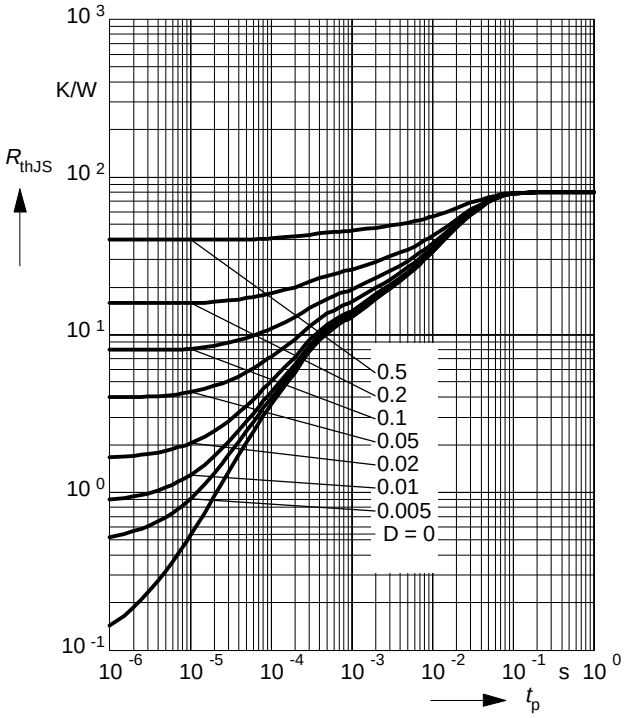
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency I_C = 50 mA, V_{CE} = 5 V, f = 100 MHz	f_T	-	170	-	MHz
Collector-base capacitance V_{CB} = 10 V, f = 1 MHz	C_{cb}	-	6	-	pF
Emitter-base capacitance V_{EB} = 0.5 V, f = 1 MHz	C_{eb}	-	60	-	

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

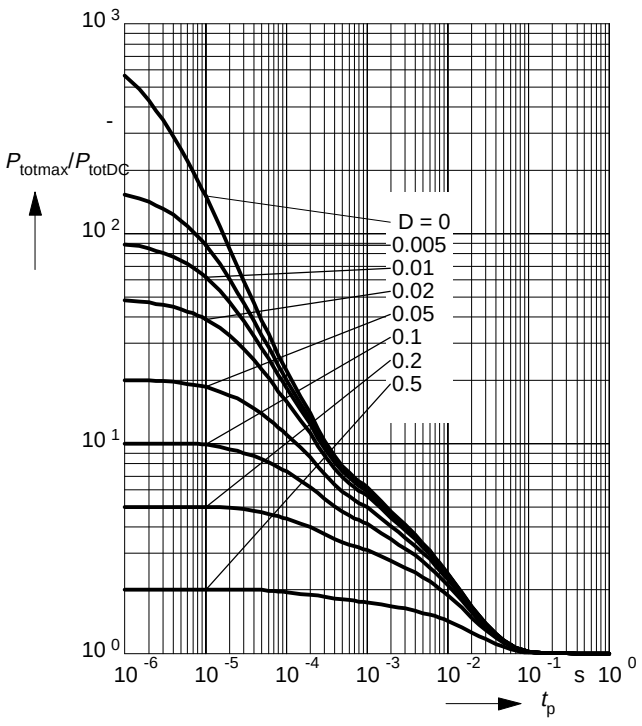
* Package mounted on epoxy



Permissible Pulse Load $R_{thJS} = f(t_p)$

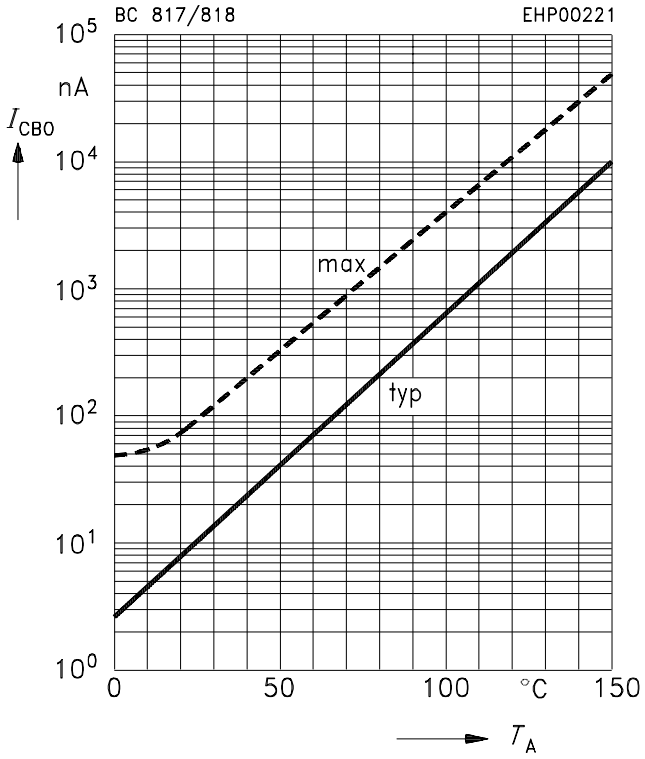


Permissible Pulse Load $P_{totmax} / P_{totDC} = f(t_p)$

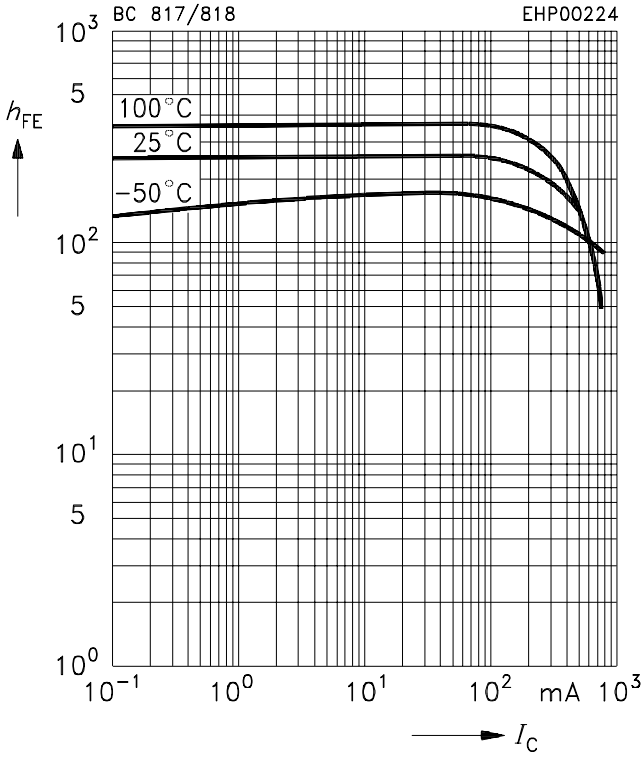


Collectot cutoff current $I_{CBO} = f(T_A)$

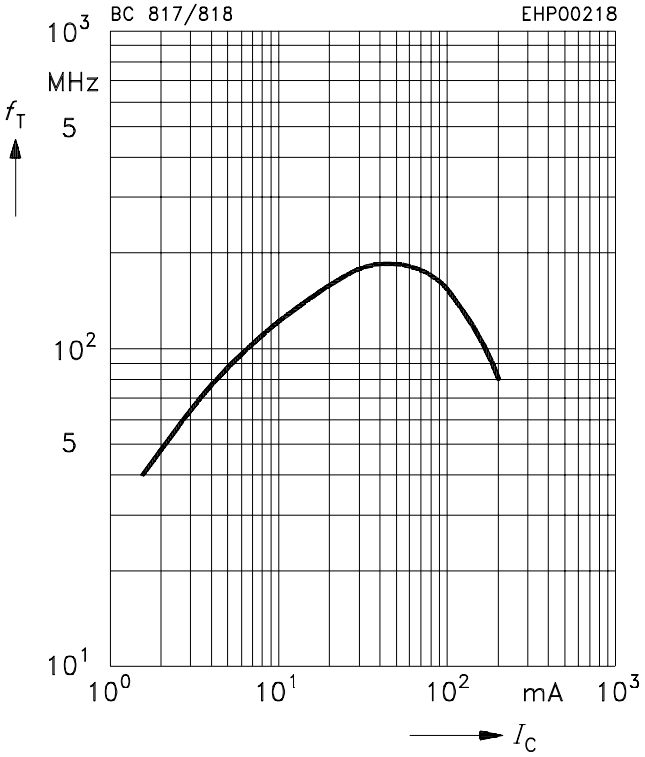
V_{CB} = 60V



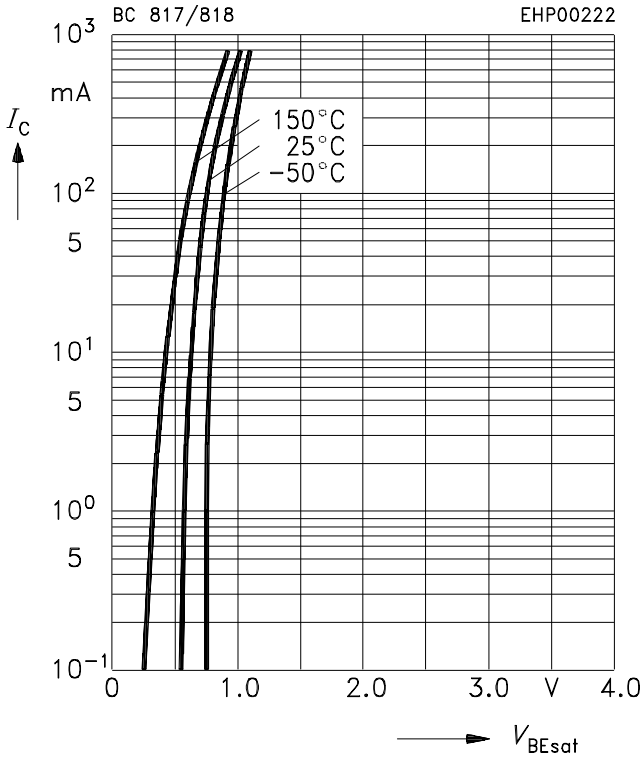
DC current gain $h_{FE} = f(I_C)$
V_{CE} = 1V



Transition frequency $f_T = f(I_C)$
VCE = 5V



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



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