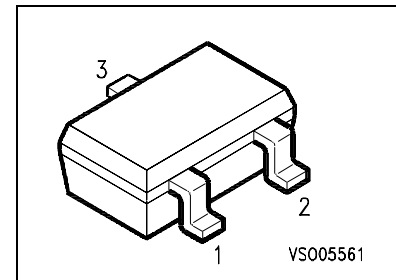


NPN Silicon AF Transistor

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



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

Maximum Ratings

Parameter	Symbol	BC 817W	BC 818W	Unit
Collector-emitter voltage	V_{CEO}	45	25	V
Collector-base voltage	V_{CBO}	50	30	V
Emitter-base voltage	V_{EBO}	5		V
Collector current	I_C	500		mA
Collector peak current	I_{CM}	1		A
Base current	I_B	100		mA
Total Power dissipation $T_S=130^\circ\text{C}$	P_{tot}	250		mW
Junction temperature	T_j	150		$^\circ\text{C}$
Storage temperature range	T_{stg}	-65 to +150		$^\circ\text{C}$

Thermal Resistance

Junction-ambient ¹⁾	$R_{th JA}$	≤ 215	K/W
Junction-soldering point	$R_{th JS}$	≤ 80	K/W

1) Package mounted on epoxy pcb 40mm x 40mm x 1.5mm/0.5cm² Cu.

Electrical Characteristics

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

Parameter	Symbol	Value			Unit
		min.	typ.	max.	

DC Characteristics

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

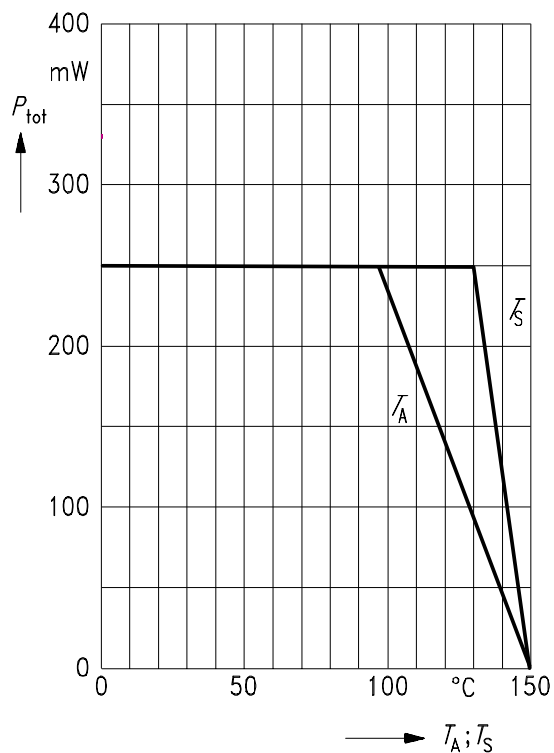
AC Characteristics

Transition frequency $I_C = 50\text{ mA}, V_{CE} = 5\text{ V}, f = 100\text{ MHz}$	f_T	-	170	-	MHz
Output capacitance $V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	C_{cb}	-	6	-	pF
Input capacitance $V_{EB} = 0.5\text{ V}, f = 1\text{ MHz}$	C_{eb}	-	60	-	pF

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

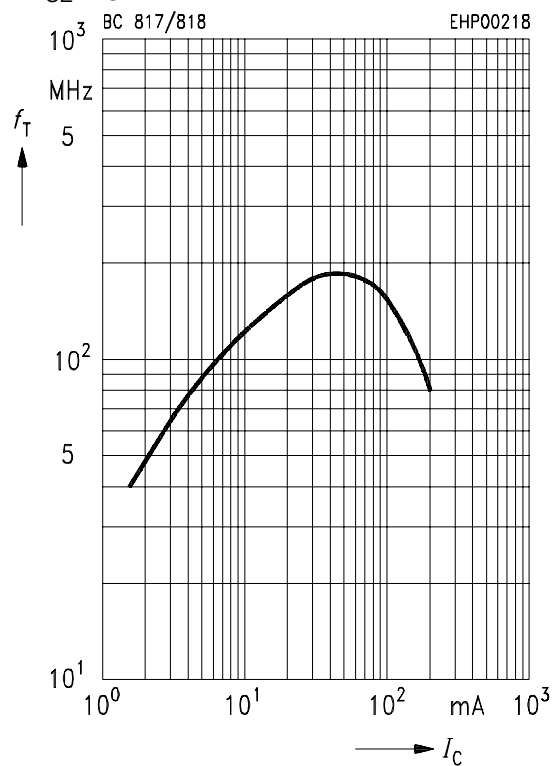
Total power dissipation $P_{\text{tot}} = f(T_A^*; T_S)$

* Package mounted on epoxy

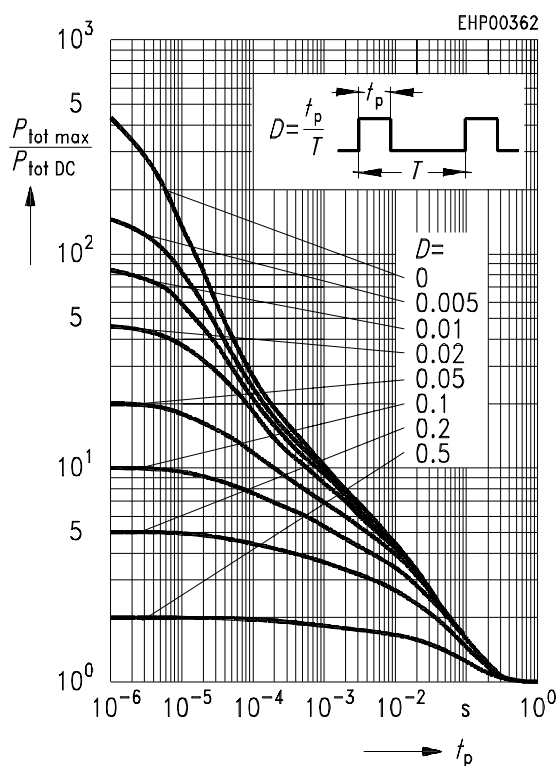


Transition frequency $f_T = f(I_C)$

$V_{CE} = 5V$

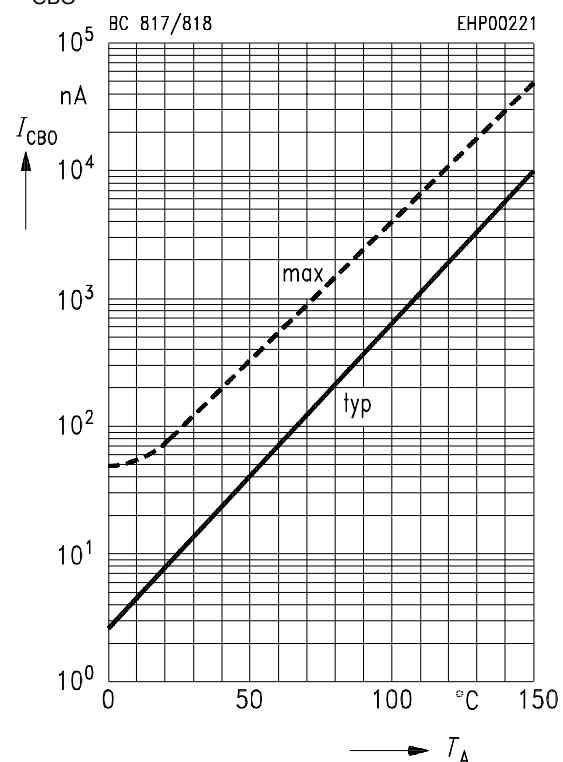


Permissible pulse load $P_{\text{tot max}}/P_{\text{tot DC}} = f(t_p)$



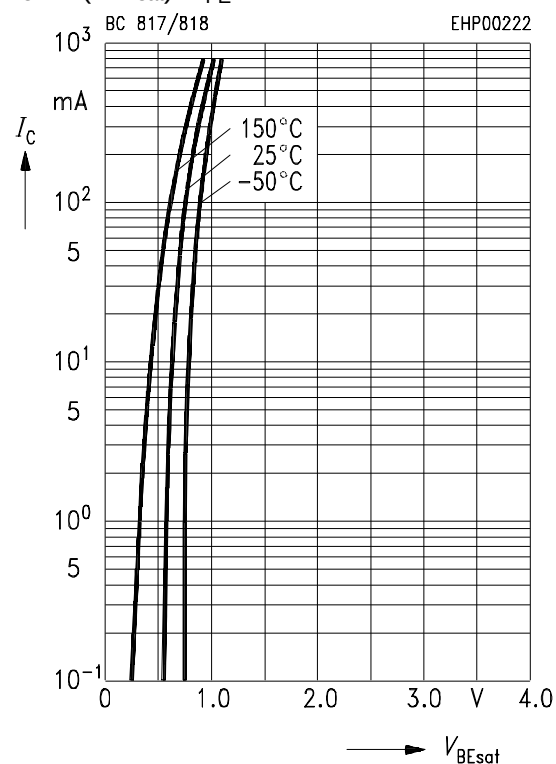
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CBO} = 60 V$



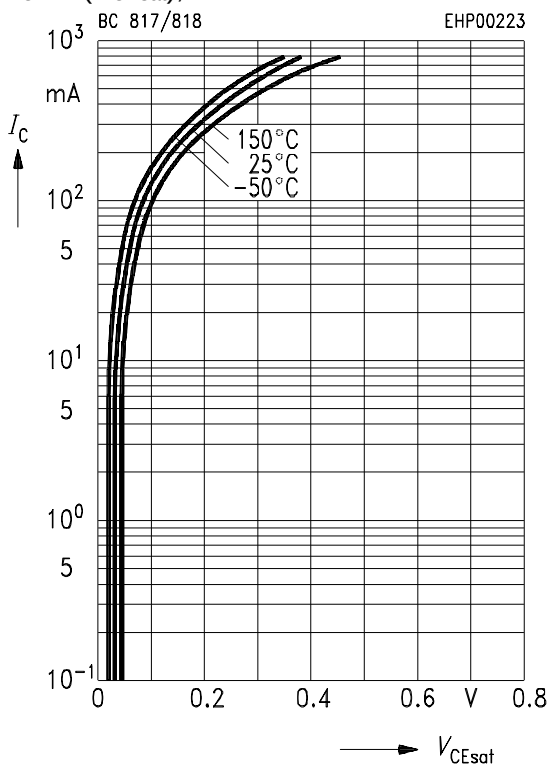
Base-emitter saturation voltage

$$I_C = f(V_{BEsat}) \quad h_{FE} = 10$$



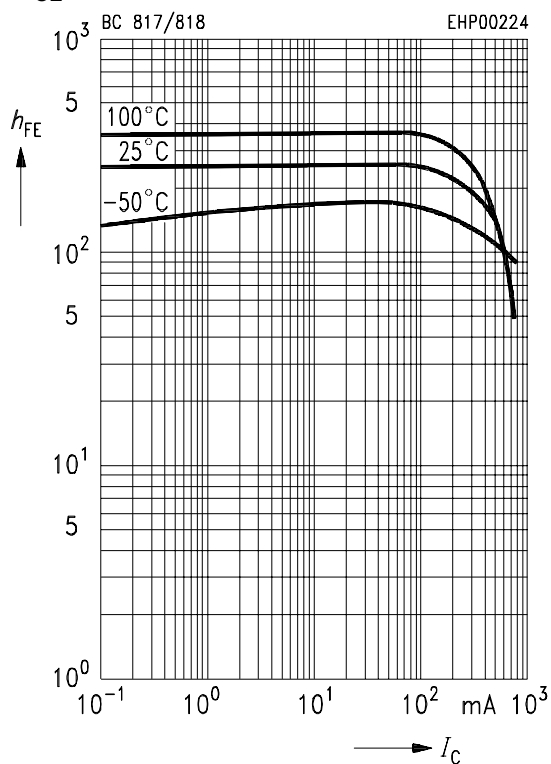
Collector-emitter saturation voltage

$$I_C = f(V_{CEsat}), \quad h_{FE} = 10$$

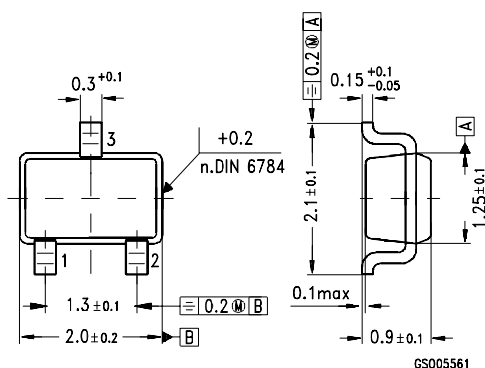


DC current gain $h_{FE} = f(I_C)$

$$V_{CE} = 1V$$



Package



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