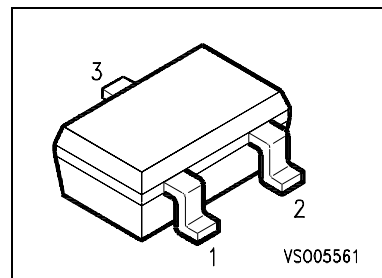


**NPN Silicon AF Transistor**

- 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 <sup>1)</sup>	$R_{th JA}$	$\leq 215$	K/W
Junction-soldering point	$R_{th JS}$	$\leq 80$	K/W

1) Package mounted on epoxy pcb 40mm x 40mm x 1.5mm/0.5cm<sup>2</sup> 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 $\mu\text{A}$
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 <sup>1)</sup> $I_C = 500\text{ mA}, I_B = 50\text{ mA}$	$V_{CEsat}$	-	-	0.7	V
Base-emitter saturation voltage <sup>1)</sup> $I_C = 500\text{ mA}, I_B = 50\text{ mA}$	$V_{BEsat}$	-	-	1.2	V

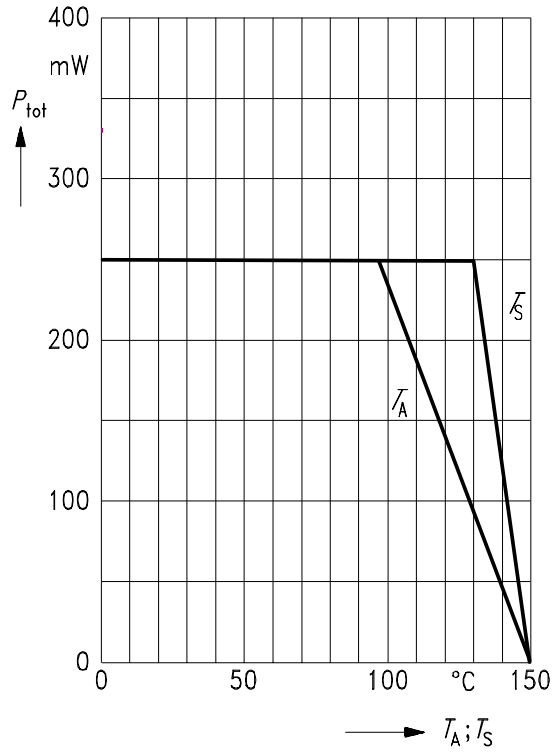
**AC Characteristics**

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:  $t \leq 300\mu\text{s}$ ,  $D \leq 2\%$

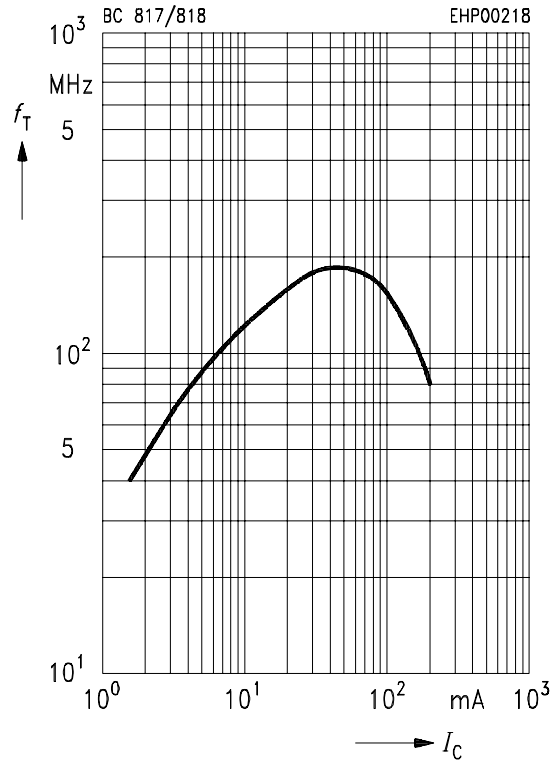
**Total power dissipation  $P_{tot} = f(T_A; T_S)$**

\* Package mounted on epoxy

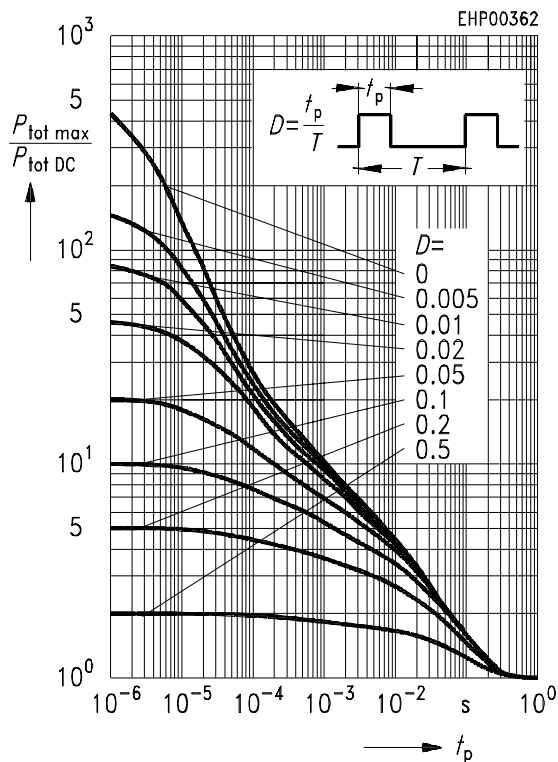


**Transition frequency  $f_T = f(I_C)$**

$V_{CE} = 5V$

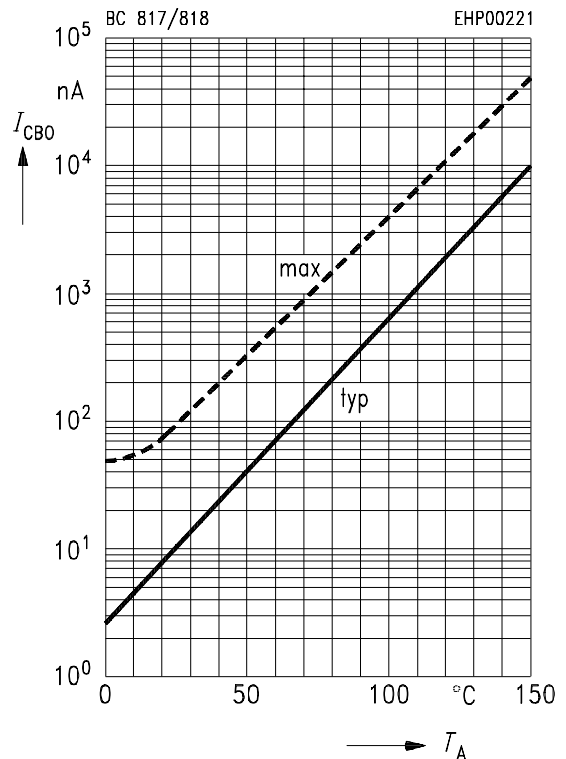


**Permissible pulse load  $P_{tot max}/P_{tot DC} = f(t_p)$**



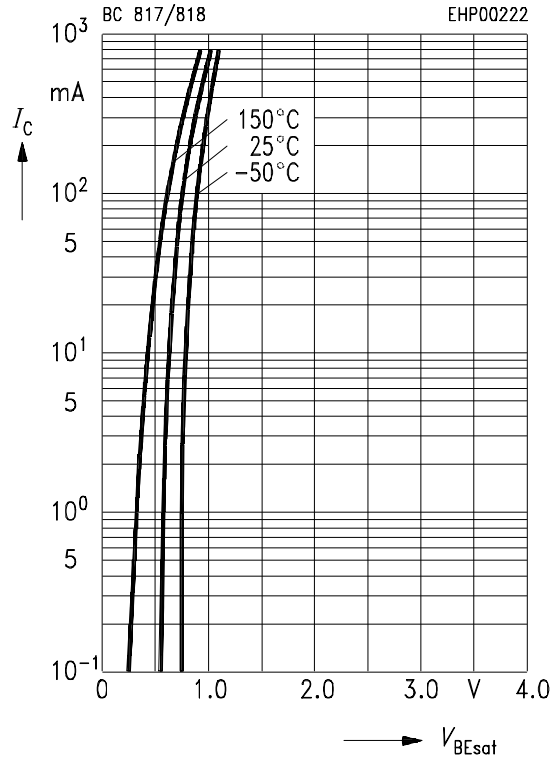
**Collector cutoff current  $I_{CBO} = f(T_A)$**

$V_{CBO} = 60V$



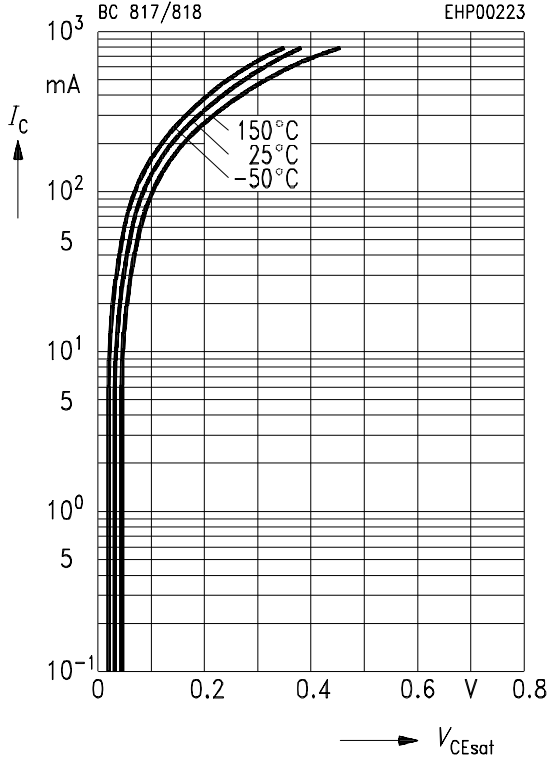
**Base-emitter saturation voltage**

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



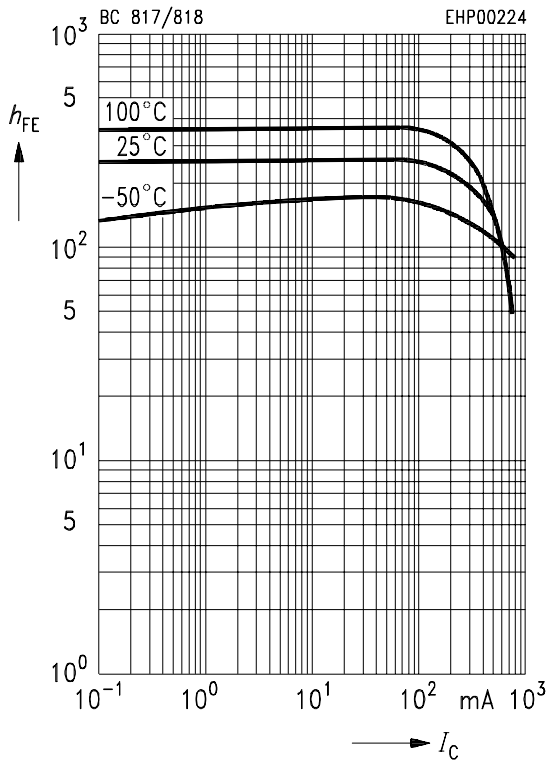
**Collector-emitter saturation voltage**

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

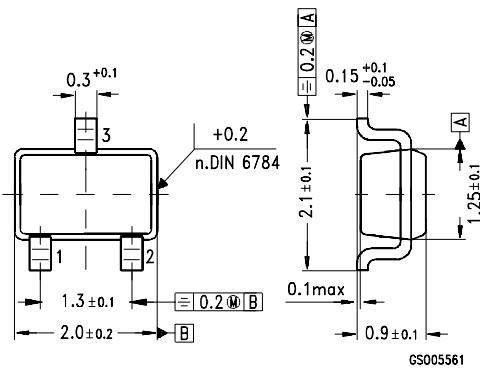


**DC current gain  $h_{FE} = f(I_C)$**

$V_{CE} = 1V$



Package



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