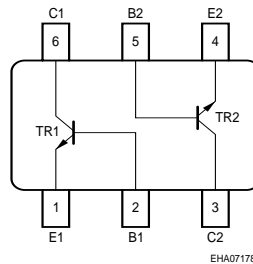
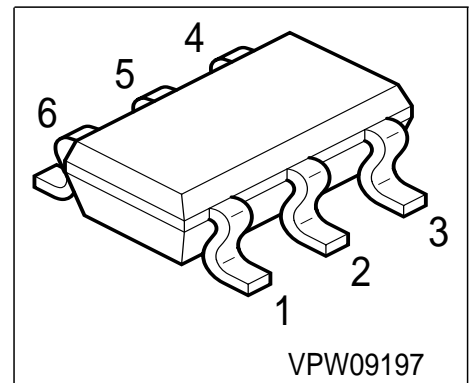


NPN Silicon Transistor Array

- For AF input stages and driver applications
- High current gain
- Low collector-emitter saturation voltage
- Two (galvanic) internal isolated Transistors with good matching in one package



Type	Marking	Pin Configuration				Package		
BC817U	6Bs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SC74

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	45	V
Collector-base voltage	V_{CBO}	50	
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
Peak base current	I_{BM}	200	
Total power dissipation, $T_S = 115\text{ °C}$	P_{tot}	330	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Junction - soldering point ¹⁾	R_{thJS}	≤105	K/W
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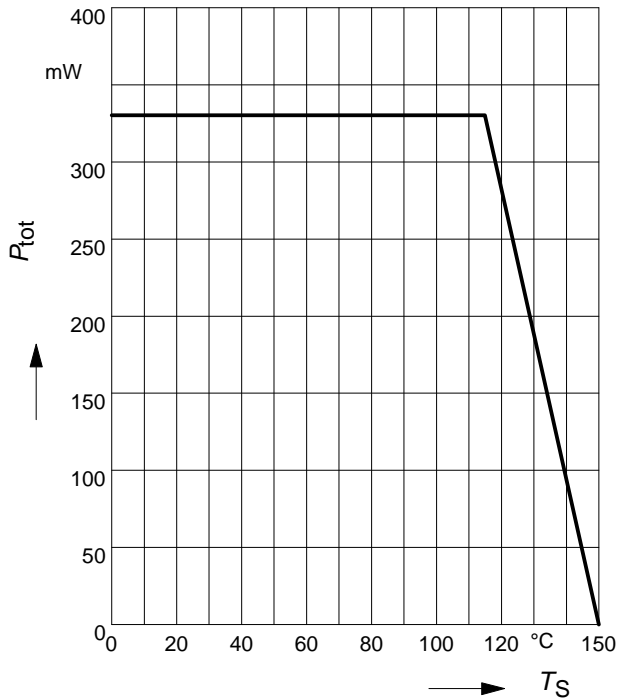
¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at $T_A=25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 10 \text{ mA}, I_B = 0$	$V_{(BR)CEO}$	45	-	-	V
Collector-base breakdown voltage $I_C = 10 \mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	50	-	-	
Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current $V_{CB} = 25 \text{ V}, I_E = 0$	I_{CBO}	-	-	100	nA
Collector cutoff current $V_{CB} = 25 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	I_{CBO}	-	-	50	μA
Emitter cutoff current $V_{EB} = 4 \text{ V}, I_C = 0$	I_{EBO}	-	-	100	nA
DC current gain 1) $I_C = 100 \text{ mA}, V_{CE} = 1 \text{ V}$ $I_C = 300 \text{ mA}, V_{CE} = 1 \text{ V}$	h_{FE}	160 100	250 -	400 -	-
Collector-emitter saturation voltage1) $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	V_{CEsat}	-	-	0.7	V
Base-emitter saturation voltage 1) $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	V_{BEsat}	-	-	1.2	
AC Characteristics					
Transition frequency $I_C = 50 \text{ mA}, V_{CE} = 5 \text{ V}, f = 100 \text{ MHz}$	f_T	-	170	-	MHz
Collector-base capacitance $V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	C_{cb}	-	6	-	pF
Emitter-base capacitance $V_{EB} = 0.5 \text{ V}, f = 1 \text{ MHz}$	C_{eb}	-	60	-	

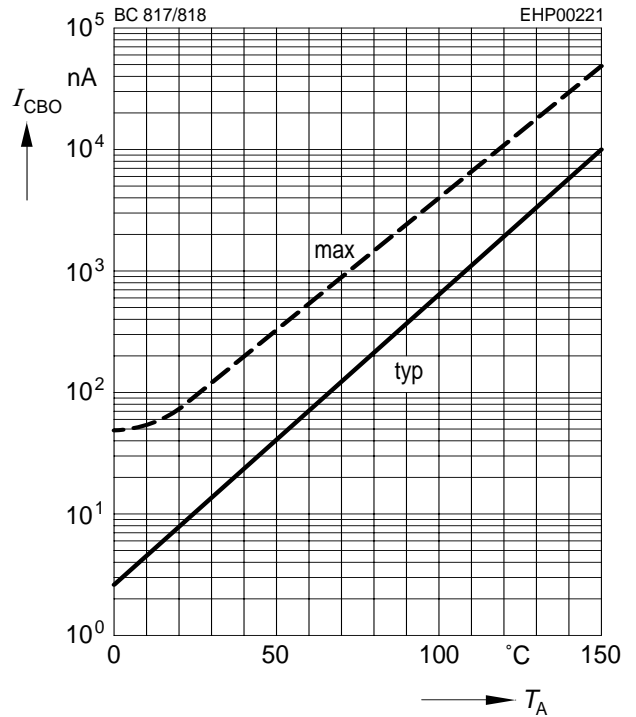
 1) Pulse test: $t < 300\mu\text{s}$; $D < 2\%$

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

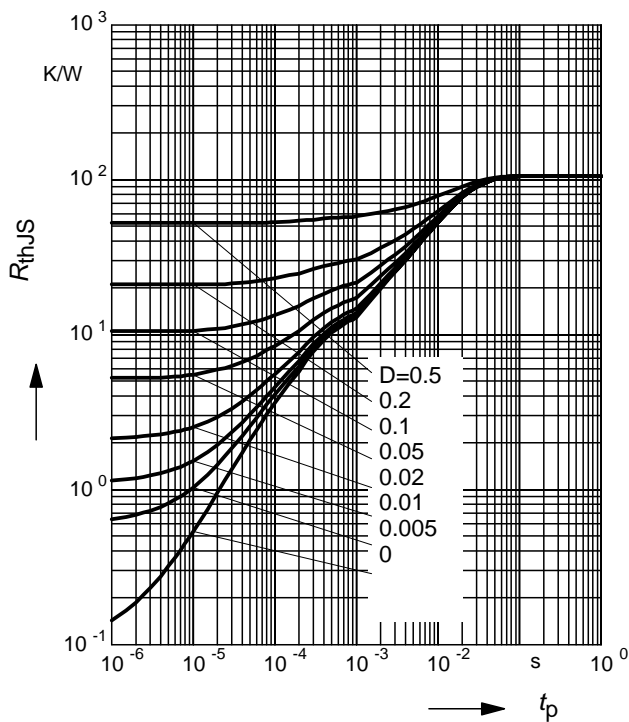


Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = 25V$

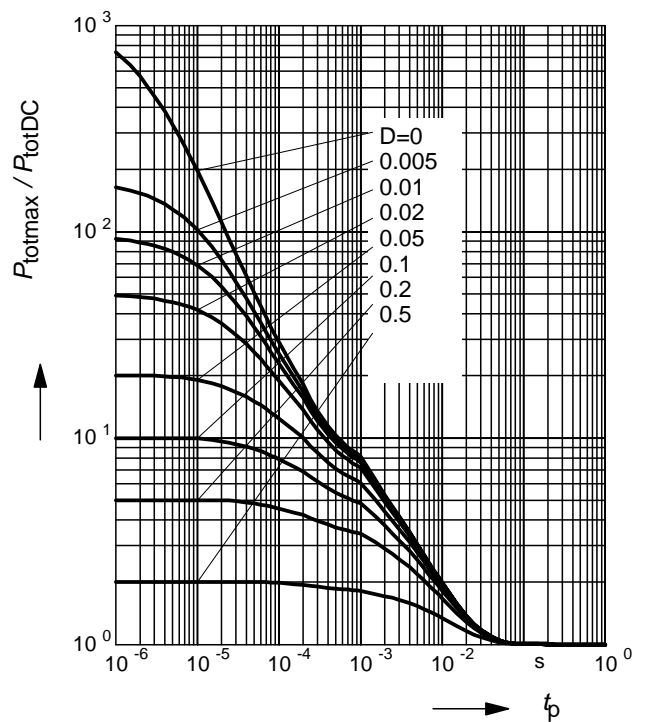


Permissible Pulse Load $R_{thJS} = f(t_p)$



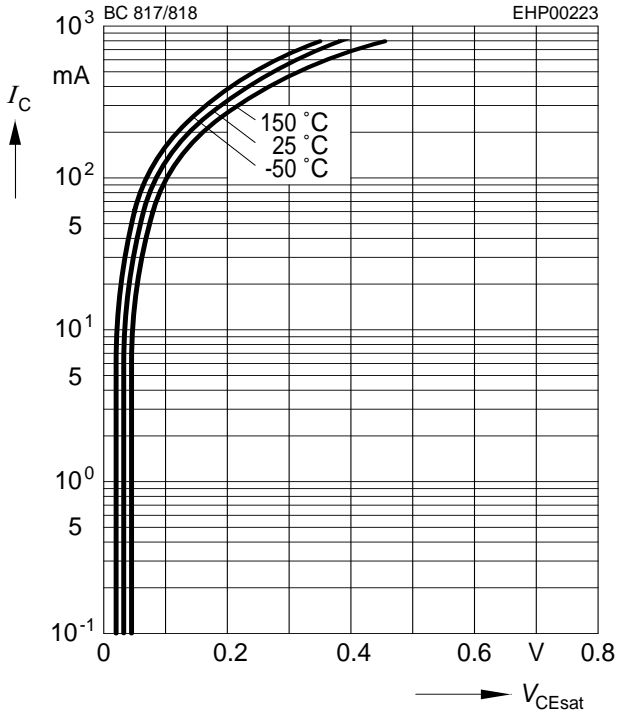
Permissible Pulse Load

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



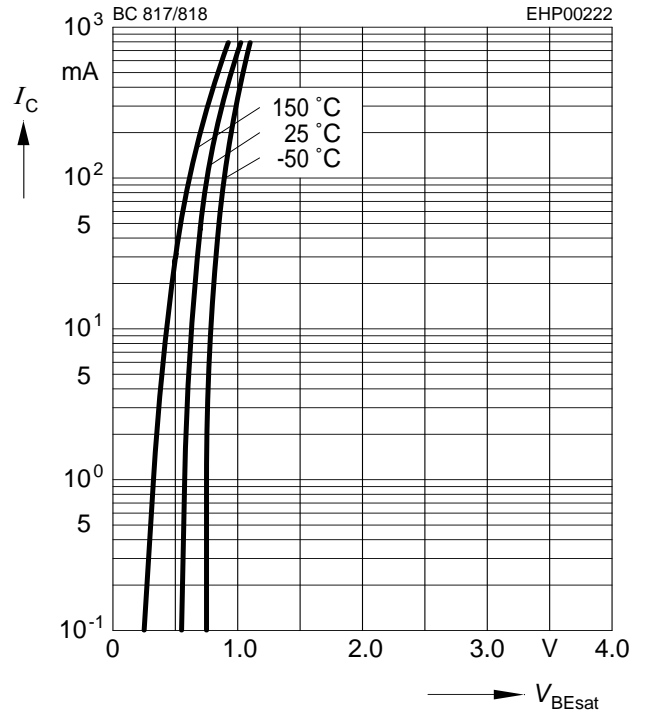
Collector-emitter saturation voltage

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



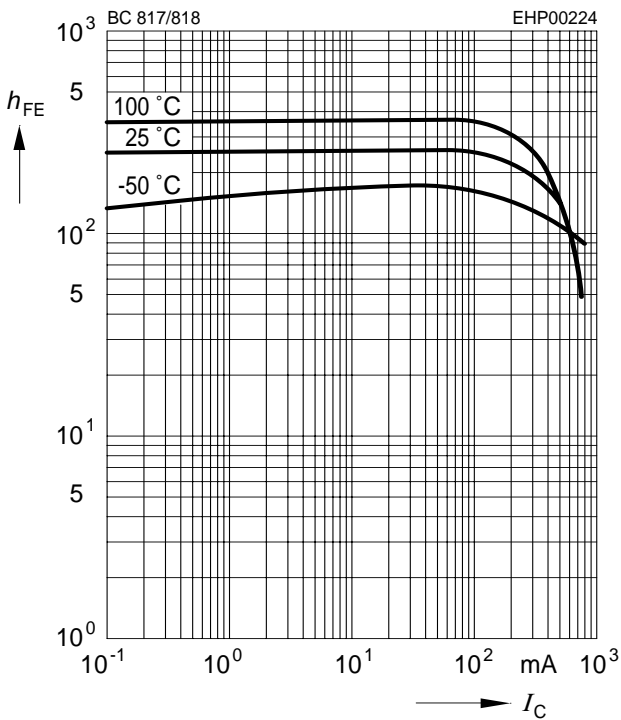
Base-emitter saturation voltage

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



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

$V_{CE} = 1V$



Transition frequency $f_T = f(I_C)$

$V_{CE} = 5V$

