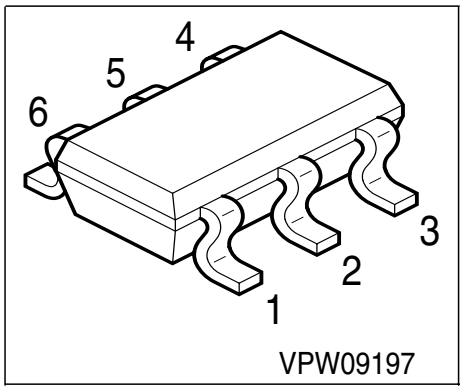
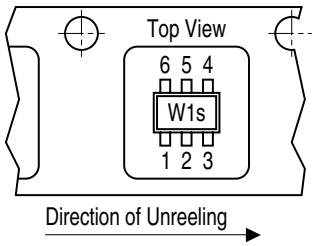
NPN/PNP Silicon Transistor Array

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

Tape loading orientation

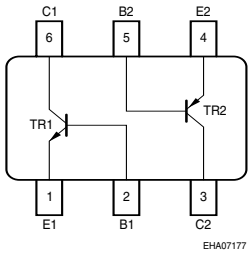




Marking on SC74 package (for example W1s) corresponds to pin 1 of device

Position in tape: pin 1 opposite of feed hole side

SC74_Tape



Type	Marking	Pin Configuration						Package
BC817UPN	1Bs	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 °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

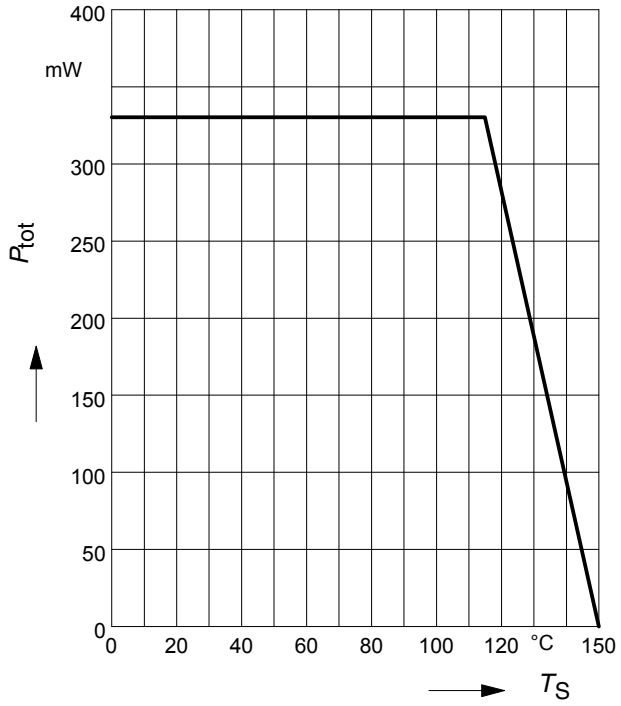
[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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, I_B = 0	$V_{(BR)CEO}$	45	-	-	V
Collector-base breakdown voltage I_C = 10 µA, I_E = 0	$V_{(BR)CBO}$	50	-	-	
Emitter-base breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current V_{CB} = 25 V, I_E = 0	I_{CBO}	-	-	100	nA
Collector cutoff current V_{CB} = 25 V, I_E = 0 , T_A = 150 °C	I_{CBO}	-	-	50	µA
Emitter cutoff current V_{EB} = 4 V, I_C = 0	I_{EBO}	-	-	100	nA
DC current gain 1) I_C = 100 mA, V_{CE} = 1 V I_C = 300 mA, V_{CE} = 1 V	h_{FE}	 160 100	 250 -	 400 -	-
Collector-emitter saturation voltage1) 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}	-	-	1.2	
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	-	

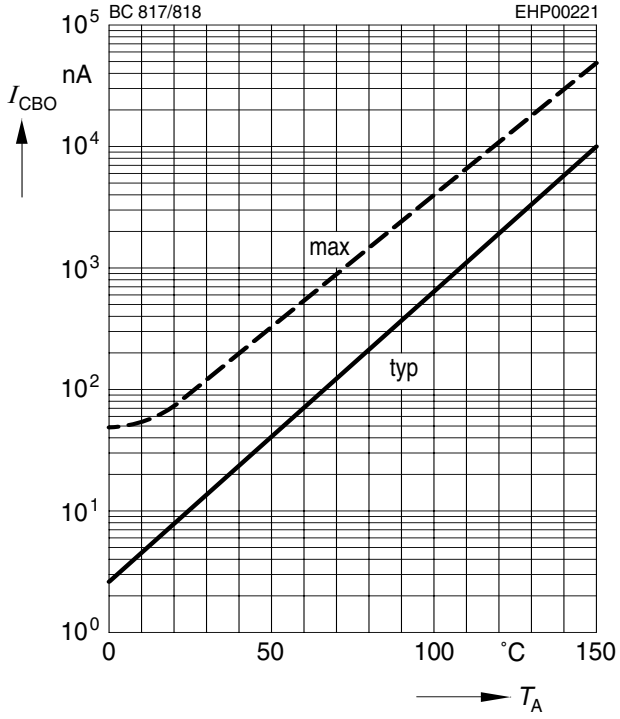
1) Pulse test: t < 300µs; D < 2%

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

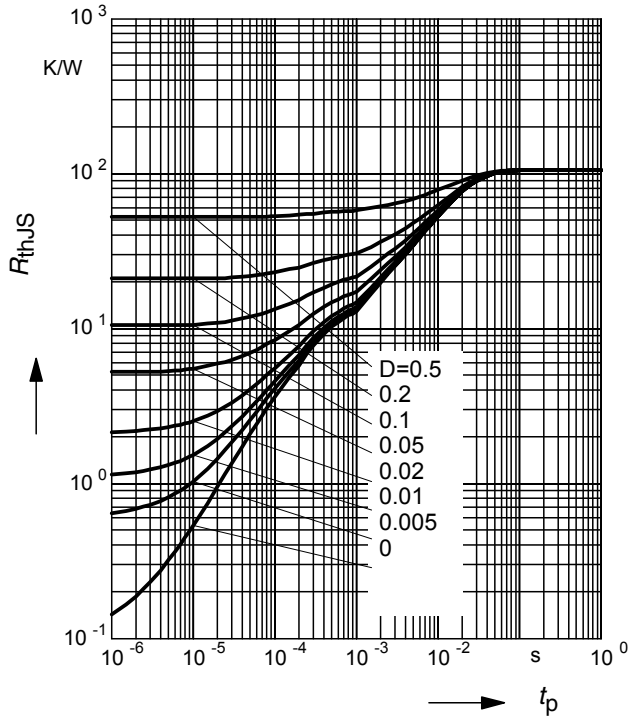


Collector cutoff current $I_{CBO} = f(T_A)$

V_{CB} = 25V

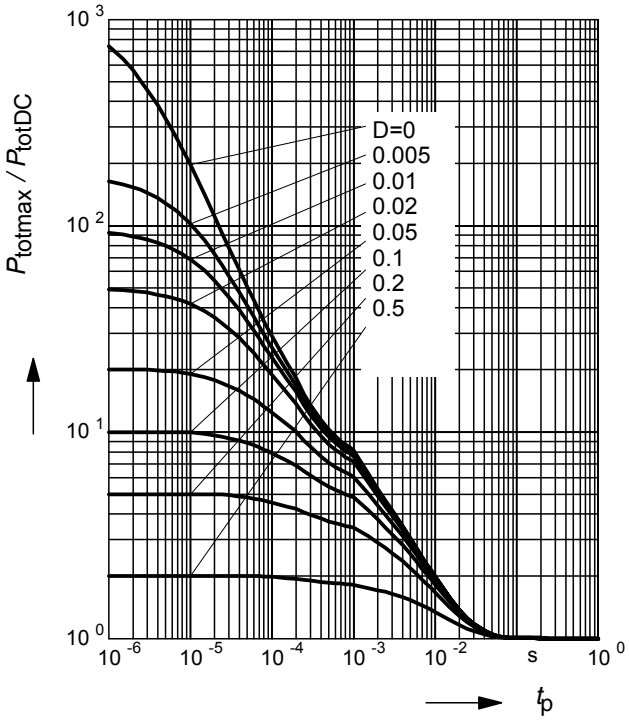


Permissible Pulse Load $R_{thJS} = f(t_p)$



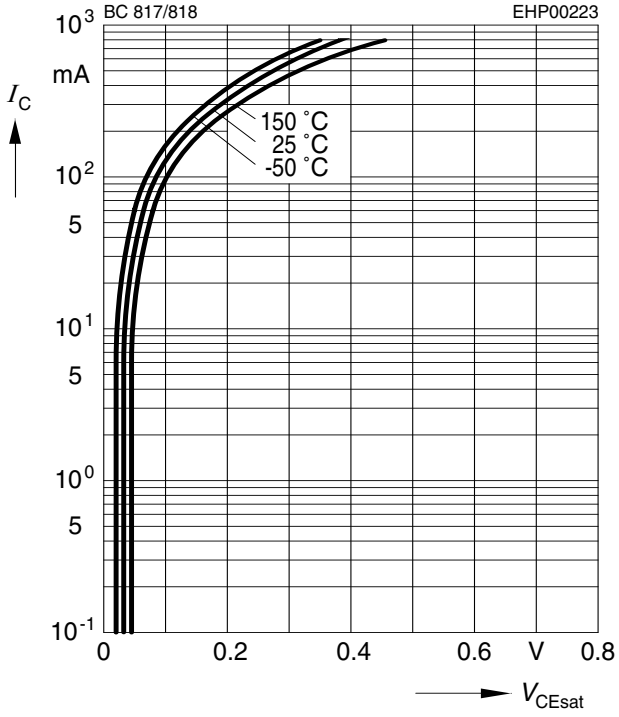
Permissible Pulse Load

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



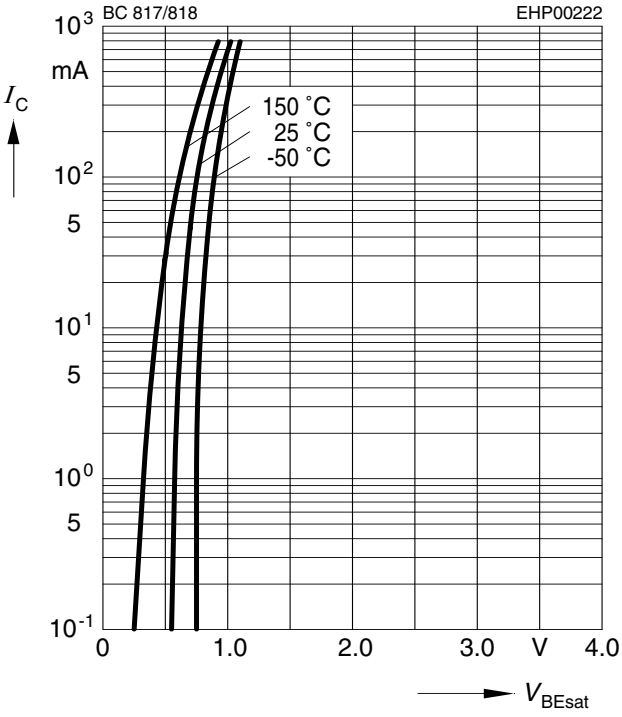
Collector-emitter saturation voltage

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



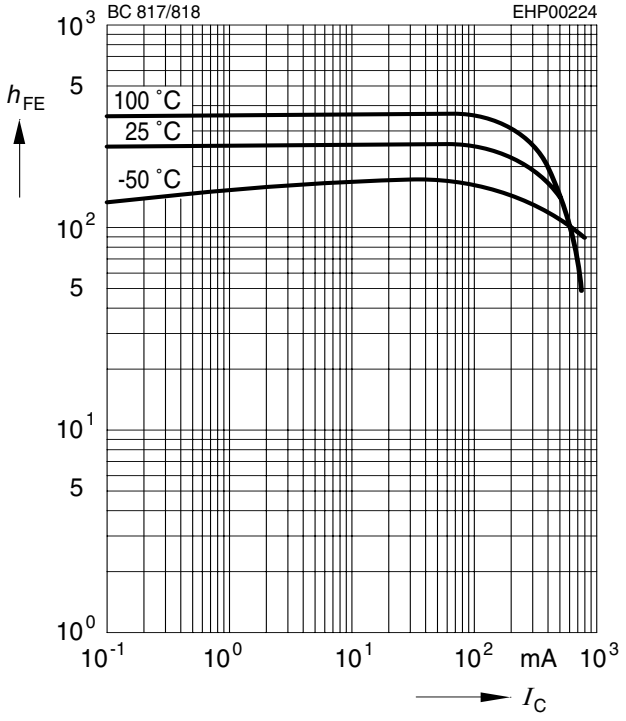
Base-emitter saturation voltage

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



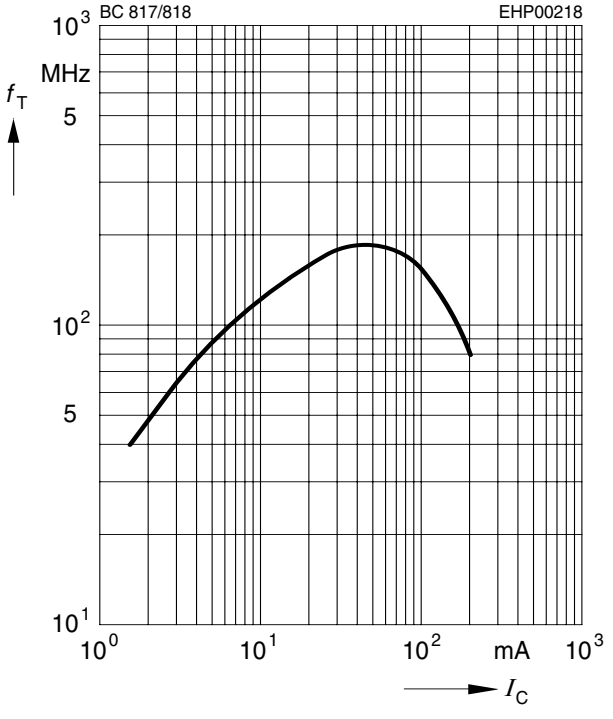
DC current gain $h_{FE} = f(I_C)$

V_{CE} = 5V



Transition frequency $f_T = f(I_C)$

V_{CE} = 5V



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Datasheets for electronics components.