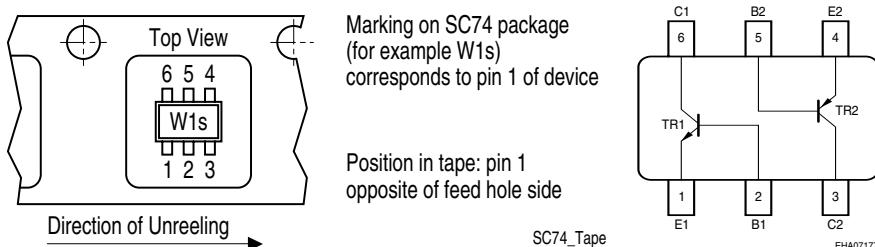
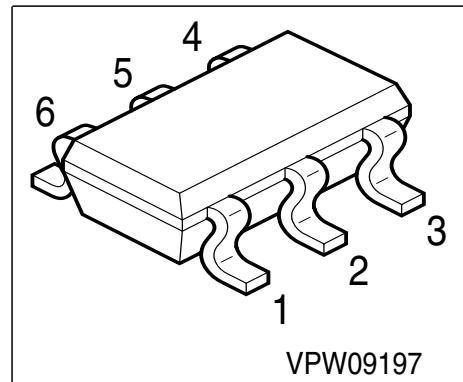


NPN/PNP Silicon Transistor Array

- 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



| 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, $T_S = 115^\circ\text{C}$ | P_{tot} | 330 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -65 ... 150 | |

Thermal Resistance

| | | | |
|------------------------------------------|------------|------------|-----|
| Junction - soldering point ¹⁾ | R_{thJS} | ≤ 105 | K/W |
|------------------------------------------|------------|------------|-----|

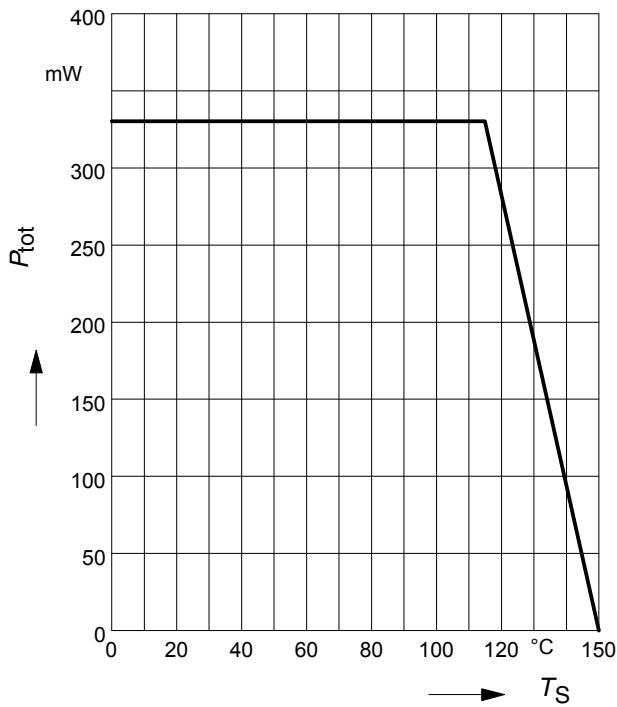
¹For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

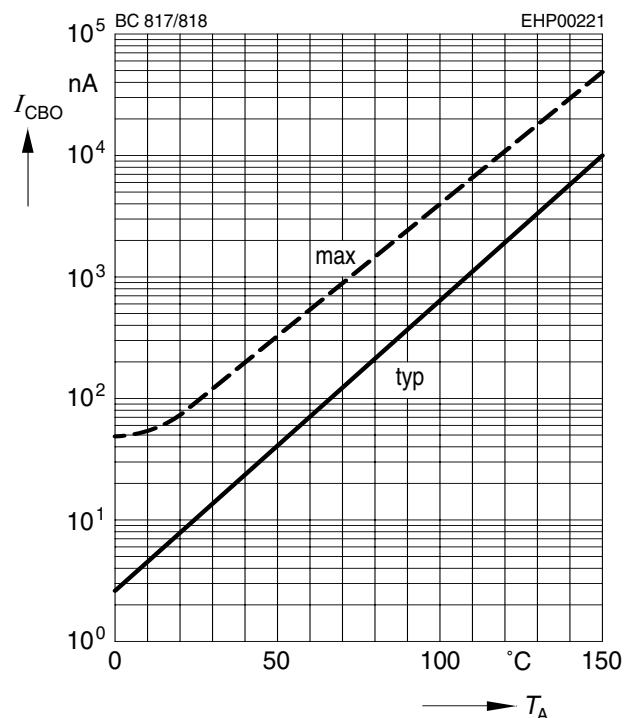
1) Pulse test: $t < 300 \mu\text{s}$; $D < 2\%$

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

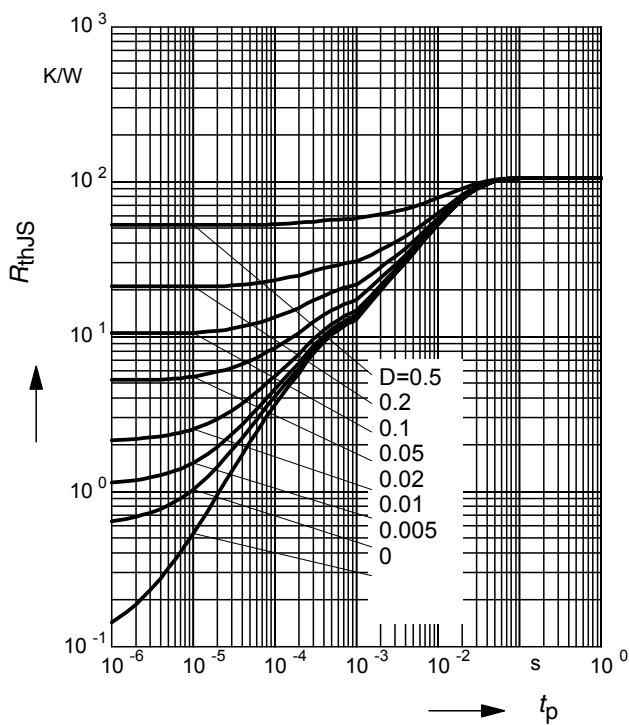


Collector cutoff current $I_{\text{CBO}} = f(T_A)$

$V_{\text{CB}} = 25\text{V}$

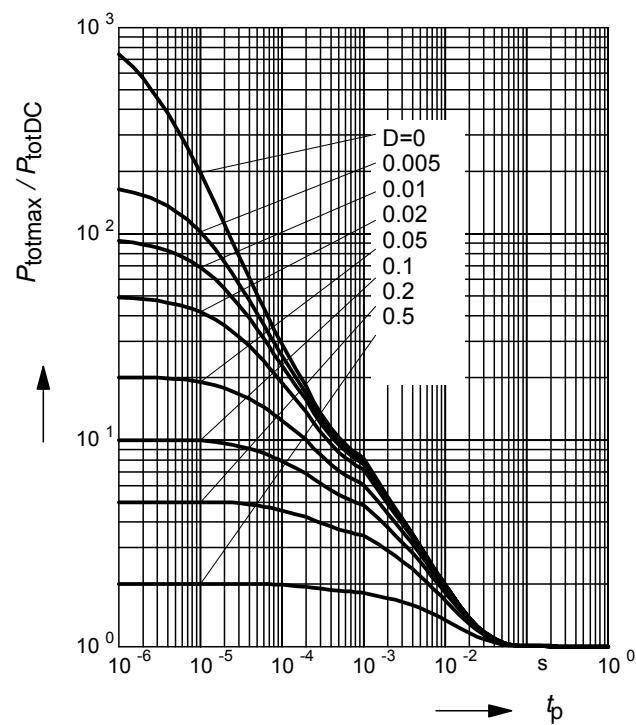


Permissible Pulse Load $R_{\text{thJS}} = f(t_p)$



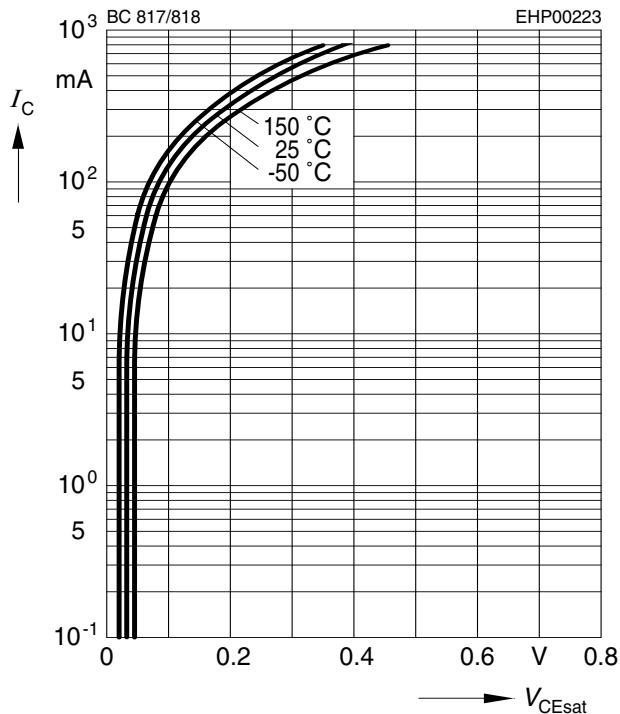
Permissible Pulse Load

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

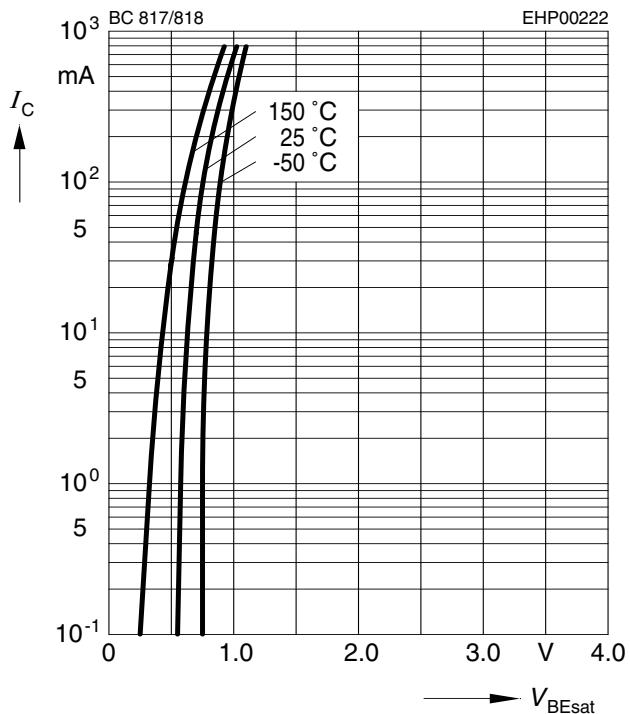


Collector-emitter saturation voltage

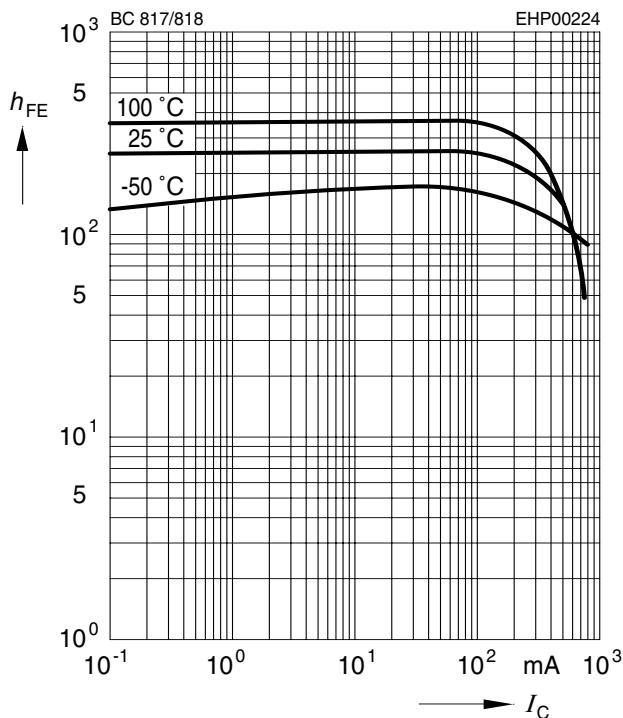
$$I_C = f(V_{CEsat}), h_{FE} = 10$$


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 $f_T = f(I_C)$

$$V_{CE} = 5V$$

