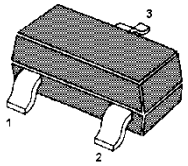
# BC846 ... BC850

for switching and amplifier applications

As complementary types the PNP transistors BC856...BC860 is recommended.




1.BASE 2.EMITTER 3.COLLECTOR

SOT-23 Plastic Package

**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| Collector Base Voltage | BC846 | $V_{CBO}$ | 80 | V |
| | BC847, BC850 | $V_{CBO}$ | 50 | V |
| | BC848, BC849 | $V_{CBO}$ | 30 | V |
| Collector Emitter Voltage | BC846 | $V_{CEO}$ | 65 | V |
| | BC847, BC850 | $V_{CEO}$ | 45 | V |
| | BC848, BC849 | $V_{CEO}$ | 30 | V |
| Emitter Base Voltage | BC846, BC847 | $V_{EBO}$ | 6 | V |
| | BC848, BC849, BC850 | $V_{EBO}$ | 5 | V |
| Collector Current | | $I_C$ | 100 | mA |
| Peak Collector Current | | $I_{CM}$ | 200 | mA |
| Power Dissipation | | $P_{tot}$ | 300 | mW |
| Junction Temperature | | $T_j$ | 150 | °C |
| Storage Temperature Range | | $T_{stg}$ | - 65 to + 150 | °C |

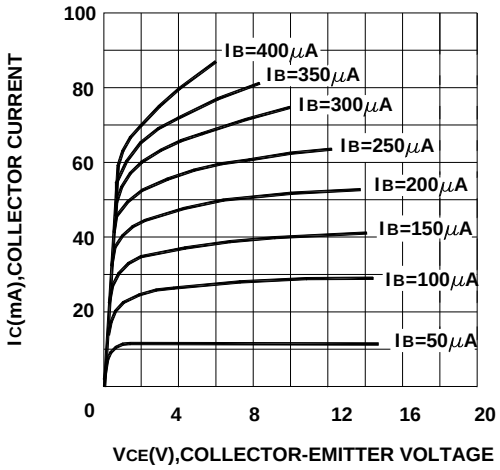
# BC846 ... BC850

**Characteristics at $T_a$ = 25 °C**

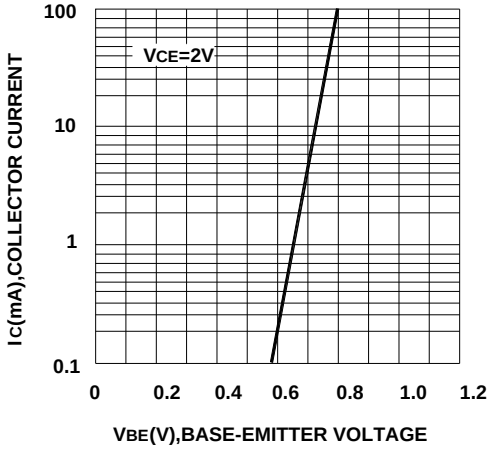
| Parameter | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| DC Current Gain | | | | | | |
| at $V_{CE}$ = 5 V, $I_C$ = 2 mA | Current Gain Group A | $h_{FE}$ | 110 | - | 220 | - |
| | B | $h_{FE}$ | 200 | - | 450 | - |
| | C | $h_{FE}$ | 420 | - | 800 | - |
| Collector Base Cutoff Current | | | | | | |
| at $V_{CB}$ = 30 V | | $I_{CBO}$ | - | - | 15 | nA |
| Collector Base Breakdown Voltage | | | | | | |
| at $I_C$ = 100 µA | BC846 | $V_{(BR)CBO}$ | 80 | - | - | V |
| | BC847, BC850 | $V_{(BR)CBO}$ | 50 | - | - | V |
| | BC848, BC849 | $V_{(BR)CBO}$ | 30 | - | - | V |
| Collector Emitter Breakdown Voltage | | | | | | |
| at $I_C$ = 2 mA | BC846 | $V_{(BR)CEO}$ | 65 | - | - | V |
| | BC847, BC850 | $V_{(BR)CEO}$ | 45 | - | - | V |
| | BC848, BC849 | $V_{(BR)CEO}$ | 30 | - | - | V |
| Collector Emitter Breakdown Voltage | | | | | | |
| at $I_C$ = 100 µA | BC846, BC847 | $V_{(BR)EBO}$ | 6 | - | - | V |
| | BC848,BC849,BC850 | $V_{(BR)EBO}$ | 5 | - | - | V |
| Collector Emitter Saturation Voltage | | | | | | |
| at $I_C$ = 10 mA, $I_B$ = 0.5 mA | | $V_{CEsat}$ | - | - | 250 | mV |
| at $I_C$ = 100 mA, $I_B$ = 5 mA | | $V_{CEsat}$ | - | - | 600 | mV |
| Base Emitter On Voltage | | | | | | |
| at $V_{CE}$ = 5 V, $I_C$ = 2 mA | | $V_{BE(on)}$ | 580 | - | 700 | mV |
| at $V_{CE}$ = 5 V, $I_C$ = 10 mA | | $V_{BE(on)}$ | - | - | 720 | mV |
| Transition Frequency | | | | | | |
| at $V_{CE}$ = 5 V, $I_C$ = 10 mA, f = 100 MHz | | $f_T$ | - | 300 | - | MHz |
| Output Capacitance | | | | | | |
| at $V_{CB}$ = 10 V, f = 1 MHz | | $C_{ob}$ | - | - | 6 | pF |
| Input Capacitance | | | | | | |
| at $V_{EB}$ = 0.5 V, f = 1 MHz | | $C_{ib}$ | - | 9 | - | pF |

# BC846 ... BC850

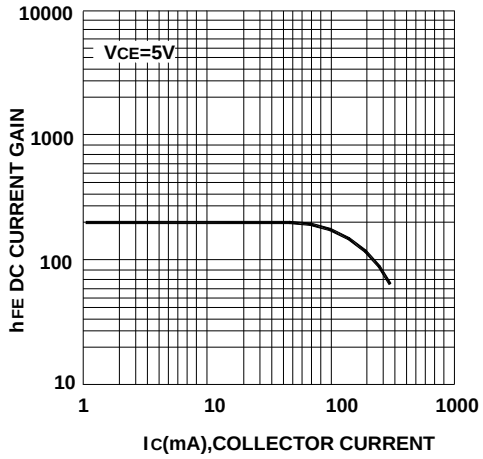
STATIC CHARACTERISTIC



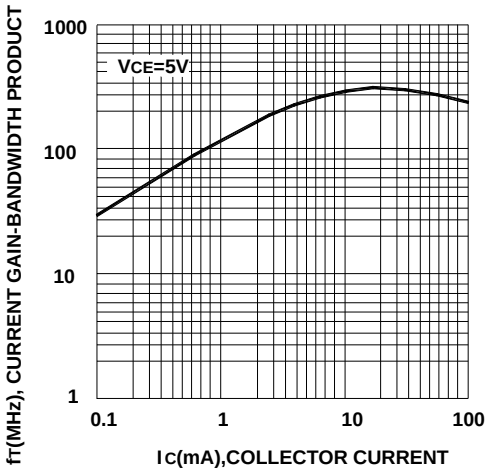

BASE-EMITTER ON VOLTAGE



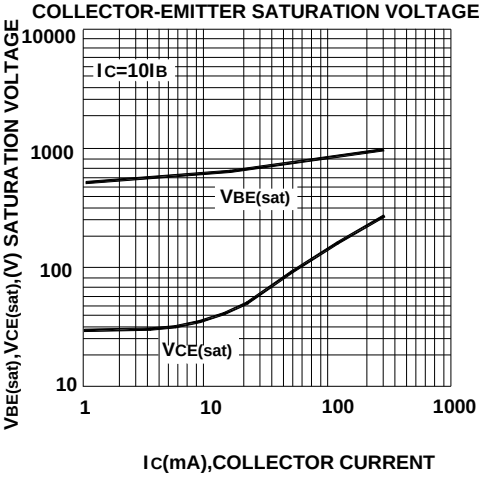

DC CURRENT GAIN



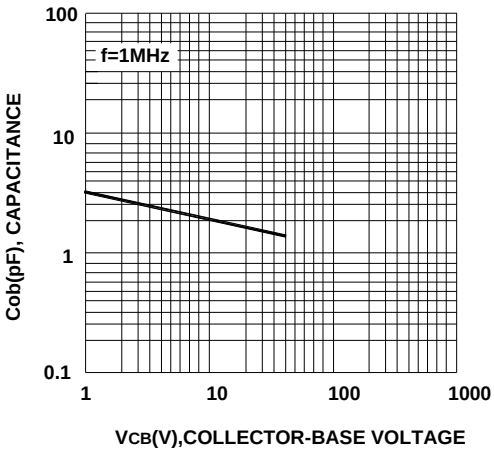

CURRENT GAIN BANDWIDTH PRODUCT




BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE




COLLECTOR OUTPUT CAPACITANCE




Note: Specifications are subject to change without notice. For more details and updates, please visit our website.