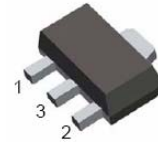
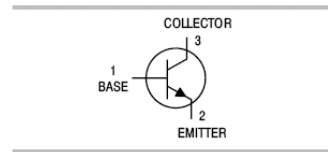


NPN Silicon AF Transistors

BCX54/BCX55/BCX56

FEATURES

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types:BCX51...BCX53(PNP)



SOT-89

ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| BCX54 | BA | SOT-89 |
| BCX54-10 | BC | SOT-89 |
| BCX54-16 | BD | SOT-89 |
| BCX55 | BE | SOT-89 |
| BCX55-10 | BG | SOT-89 |
| BCX55-16 | BM | SOT-89 |
| BCX56 | BH | SOT-89 |
| BCX56-10 | BK | SOT-89 |
| BCX56-16 | BL | SOT-89 |

MAXIMUM RATING @ Ta=25°C unless otherwise specified

| Symbol | Parameter | Value | Unit |
|----------------|--|-------------|------|
| V_{CBO} | Collector-Base Voltage | BCX54 | 45 |
| | | BCX55 | 60 |
| | | BCX56 | 100 |
| V_{CEO} | Collector-Emitter Voltage | BCX54 | 45 |
| | | BCX55 | 60 |
| | | BCX56 | 80 |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | DC Collector Current | 1 | A |
| I_{CM} | Peak Collector Current | 1.5 | A |
| I_B | Base current | 100 | mA |
| I_{BM} | Peak base current | 200 | mA |
| P_{tot} | Total power dissipation, $T_S=130^\circ\text{C}$ | 1 | W |
| T_j, T_{stg} | Junction and Storage Temperature | -65 to +150 | °C |

NPN Silicon AF Transistors

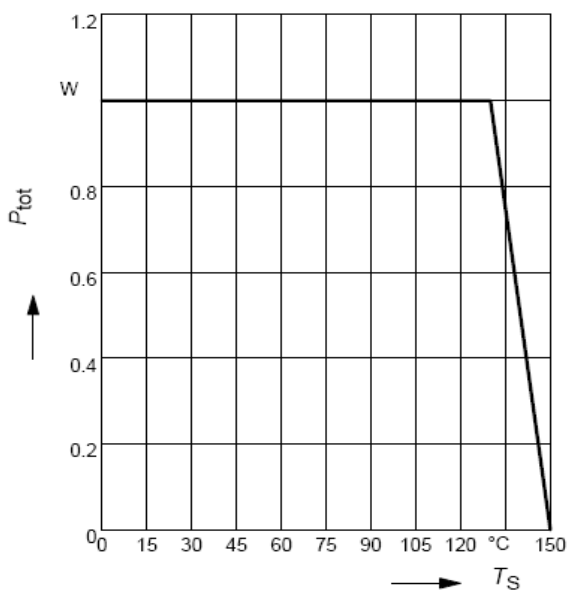
BCX54/BCX55/BCX56

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | MAX | UNIT |
|--------------------------------------|---------------|---|-----------------|-----|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu A, I_B=0$ BCX54 BCX55 BCX56 | 45 60 100 | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=10mA, I_B=0$ BCX54 BCX55 BCX56 | 45 60 80 | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$ | 5 | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=30V, I_E=0$ | | 100 | nA |
| | | $V_{CB}=30V, I_E=0, T_A=150^\circ C$ | | 20 | μA |
| DC current gain | h_{FE} | $V_{CE}=2V, I_C=5mA$ | 25 | | |
| | | $V_{CE}=2V, I_C=150mA$ | 40 | 250 | |
| | | $V_{CE}=2V, I_C=500mA$ | 25 | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500mA, I_B=50mA$ | | 0.5 | V |
| Base-emitter voltage | V_{BE} | $I_C=500mA, V_{CE}=2V$ | | 1 | V |
| Transition frequency | f_T | $V_{CE}=10V, I_C=50mA,$ $f=20MHz$ | 100 | | MHz |

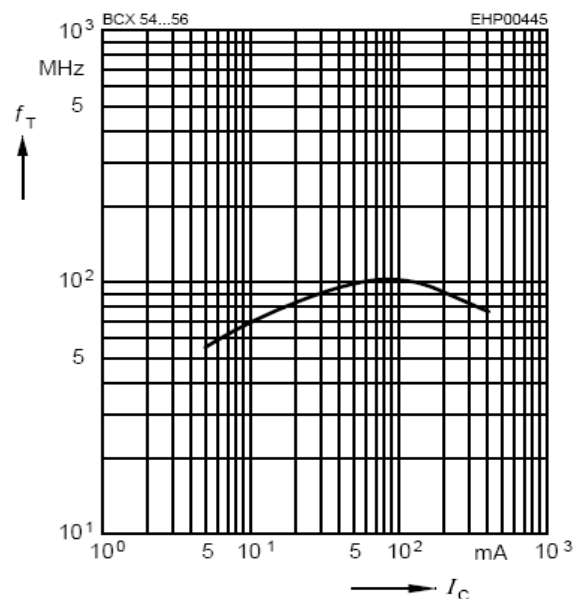
TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

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



Transition frequency $f_T = f(I_C)$

$V_{CE} = 10V$

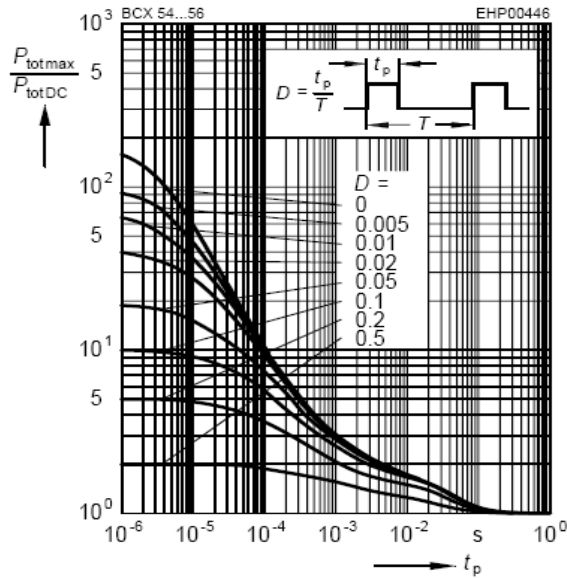


NPN Silicon AF Transistors

BCX54/BCX55/BCX56

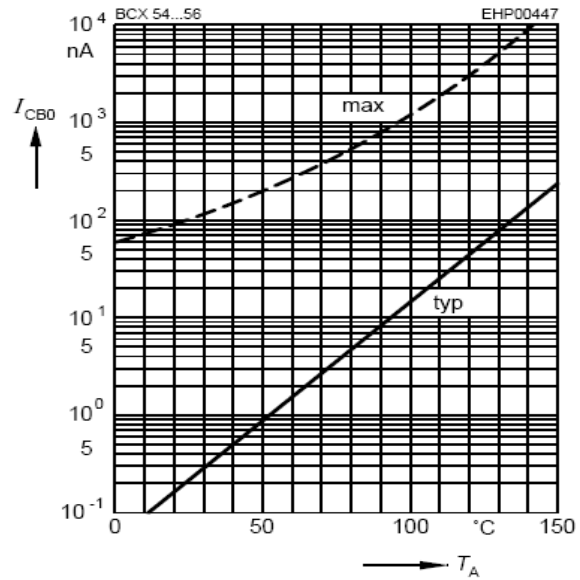
Permissible pulse load

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



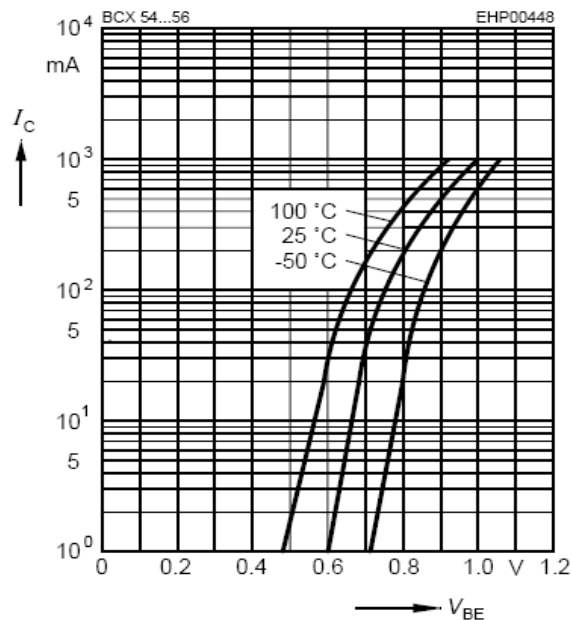
Collector cutoff current $I_{\text{CBO}} = f(T_A)$

$$V_{\text{CB}} = 30\text{V}$$



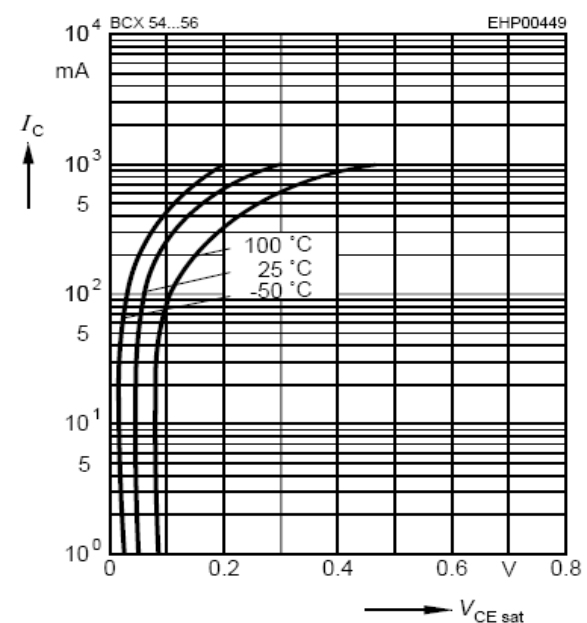
Collector current $I_C = f(V_{\text{BE}})$

$$V_{\text{CE}} = 2\text{V}$$



Collector-emitter saturation voltage

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



NPN Silicon AF Transistors

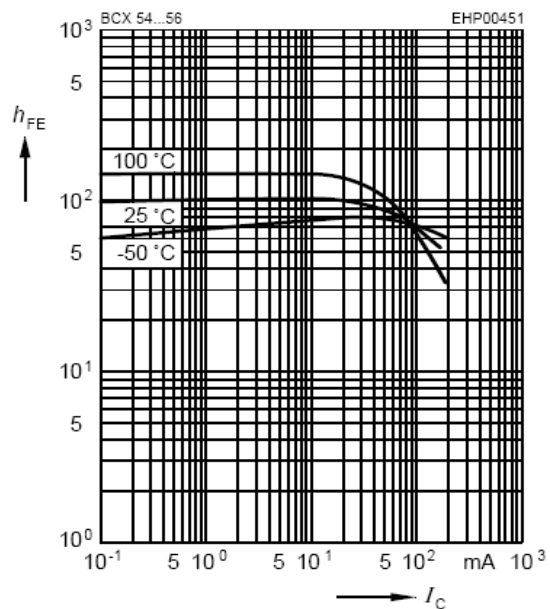
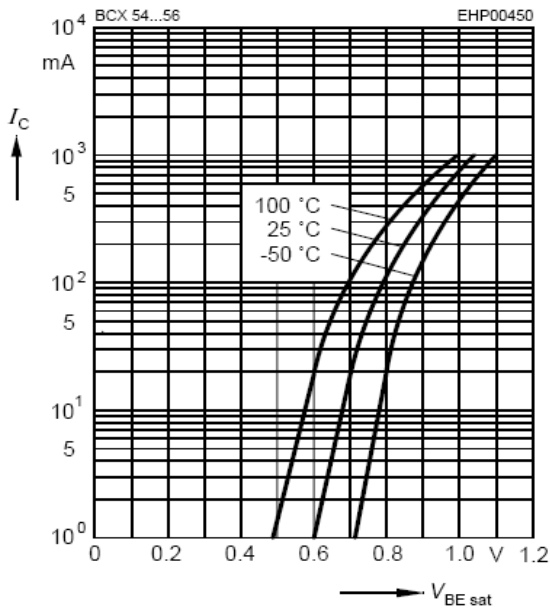
BCX54/BCX55/BCX56

Base-emitter saturation voltage

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

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

$$V_{CE} = 2V$$



PACKAGE OUTLINE

Plastic surface mounted package

SOT-89

Mechanical drawing of the SOT-89 package showing dimensions A, B, C, D, E, F, H, J, and K. The drawing includes a top view, a side view, and a bottom view.

| SOT-89 | | |
|----------------------|------------|------|
| Dim | Min | Max |
| A | 4.5 | 4.7 |
| B | 2.3 | 2.7 |
| C | 1.5Typical | |
| D | 0.35 | 0.55 |
| E | 1.4 | 1.6 |
| F | 0.4 | 0.6 |
| H | 1.55 | 1.75 |
| J | 0.4Typical | |
| K | 4.15 | 4.25 |
| All Dimensions in mm | | |

