# NPN small signal transistor

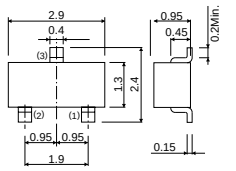
## BCX70J, K

**●Features**

1) Ideal for switching and AF amplifier applications.
2) Complements the BCX71.

**●Dimensions** (Unit : mm)

**BCX70J,K**




(1)Emitter
(2)Base
(3)Collector

Each lead has same dimensions

Abbreviated symbol : GAJ (BCX70J)
GAK (BCX70K)

**●Packaging specifications**

| | | |
|---|---|---|
| Type | Package | Taping |
| | Code | T116 |
| | Basic ordering unit (pieces) | 3000 |
| BCX71J, K | | ◯ |

**●Absolute maximum ratings** (Ta=25°C)

| Parameter | Symbol | Limits | Unit | |
|---|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | 45 | V | |
| Collector-emitter voltage | $V_{CEO}$ | 45 | V | |
| Emitter-base voltage | $V_{EBO}$ | 5 | V | |
| Collector current | $I_C$ | 0.2 | A | |
| Collector power dissipation | $P_C$ | 0.2 | W | |
| | | 0.35 | W | * |
| Junction temperature | Tj | 150 | °C | |
| Storage temperature | Tstg | −55 to 150 | °C | |

* Mounted on a 7×5×0.6 mm CERAMIC SUBSTRATE

●**Electrical characteristics** (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Collector-emitter breakdown voltage | $BV_{CEO}$ | 45 | – | – | V | $I_C$= 2mA |
| Emitter-base breakdown voltage | $BV_{EBO}$ | 5 | – | – | V | $I_C$= 10μA |
| Collector-emitter cutoff current | $I_{CES}$ | – | – | 0.1 | μA | $V_{CE}$= 45V |
| Emitter-base cutoff current | $I_{EBO}$ | – | – | 0.1 | μA | $V_{EB}$= 4V |
| Collector-emitter saturation voltage | $V_{CE(sat)1}$ | – | – | 0.35 | V | $I_C/I_B$= 10mA/ 0.25mA |
| | $V_{CE(sat)2}$ | – | – | 0.55 | V | $I_C/I_B$= 50mA/ 1.25mA |
| Base-emitter saturation voltage | $V_{BE(sat)1}$ | – | – | 0.85 | V | $I_C/I_B$= 10mA/ 0.25mA |
| | $V_{BE(sat)2}$ | – | – | 1.05 | V | $I_C/I_B$= 50mA/ 1.25mA |
| Base-emitter voltage | $V_{BE(on)}$ | 0.55 | – | 0.75 | V | $V_{CE}$= 5V, $I_C$= 2mA |
| DC current transfer ratio | $h_{FE1}$ | 250 | – | 630 | – | $V_{CE}$= 5V, $I_C$= 2mA |
| | $h_{FE2}$ | 90 | – | – | | $V_{CE}$= 5V, $I_C$= 50mA |
| Transition frequency | $f_T$ | 125 | – | – | MHz | $V_{CE}$= 5V, $I_E$= 10mA, f=100MHz |
| Collector output capacitance | Cob | – | – | 4.5 | pF | $V_{CB}$= 10V, f=1MHz, $I_E$=0A |
| Noise figure | NF | – | – | 6 | dB | $V_{CE}$= 5V, $I_C$= 200μA, f=1kHz,Rg=2kΩ |
| Collector-base cutoff current | $I_{CBO}$ | – | – | 20 | μA | $V_{CB}$= 45V, Ta=150°C |

This parts are classified into the categories below and given $h_{FE}$ item.

| Part. No | BCX70J | BCX70K |
|---|---|---|
| $h_{FE1}$ | 250 to 460 | 380 to 630 |
| $h_{FE2}$ | 90 or more | 125 or more |

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