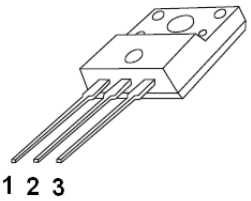
# TO-220F Plastic-Encapsulate Transistors

## KTB1367 TRANSISTOR (PNP)

TO – 220F

1. BASE
2. COLLECTOR
3. EMITTER




### FEATURES

- Low Collector-Emitter Saturation Voltage
- General Purpose Applications

### MAXIMUM RATINGS ($T_a$=25℃ unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | -100 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | -100 | V |
| $V_{EBO}$ | Emitter-Base Voltage | -5 | V |
| $I_C$ | Collector Current | -5 | A |
| $P_C$ | Collector Power Dissipation | 2 | W |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 62.5 | ℃/W |
| $T_j$ | Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature | -55~+150 | ℃ |

### ELECTRICAL CHARACTERISTICS ($T_a$=25℃ unless otherwise specified)

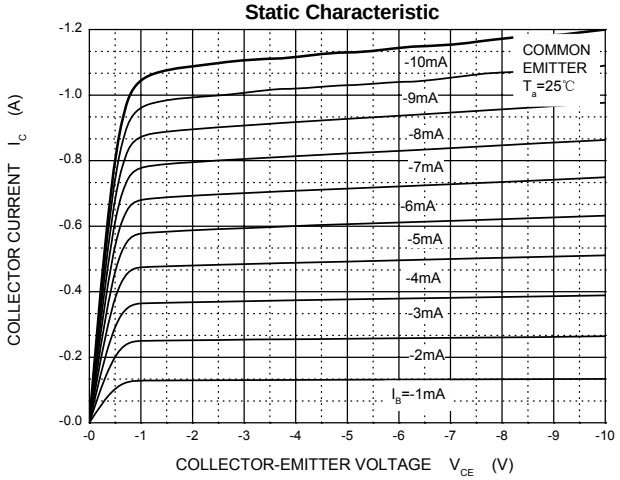
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Collector-base breakdown voltage** | $V_{(BR)CBO}$ | $I_C$=-1mA,$I_E$=0 | -100 | | | V |
| **Collector-emitter breakdown voltage** | $V_{(BR)CEO}$* | $I_C$=-50mA,$I_B$=0 | -100 | | | V |
| **Emitter-base breakdown voltage** | $V_{(BR)EBO}$* | $I_E$=-10mA,$I_C$=0 | -5 | | | V |
| **Collector cut-off current** | $I_{CBO}$ | $V_{CB}$=-100V,$I_E$=0 | | | -100 | μA |
| **Collector cut-off current** | $I_{CEO}$ | $V_{CE}$=-50V,$I_B$=0 | | | -500 | μA |
| **Emitter cut-off current** | $I_{EBO}$ | $V_{EB}$=-5V,$I_C$=0 | | | -1 | mA |
| **DC current gain** | $h_{FE(1)}$ | $V_{CE}$=-5V, $I_C$=-1A | 40 | | 240 | |
| | $h_{FE(2)}$ | $V_{CE}$=-5V, $I_C$=-4A | 20 | | | |
| **Collector-emitter saturation voltage** | $V_{CE(sat)}$ | $I_C$=-4A,$I_B$=-0.4A | | | -2 | V |
| **Base-emitter voltage** | $V_{BE}$ | $V_{CE}$=-5V, $I_C$=-4A | | | -1.5 | V |
| **Collector output capacitance** | $C_{ob}$ | $V_{CB}$=-10V,$I_E$=0, f=1MHz | | 270 | | pF |
| **Transition frequency** | $f_T$ | $V_{CE}$=-5V,$I_C$=-1A | | 5 | | MHz |

*Pulse test

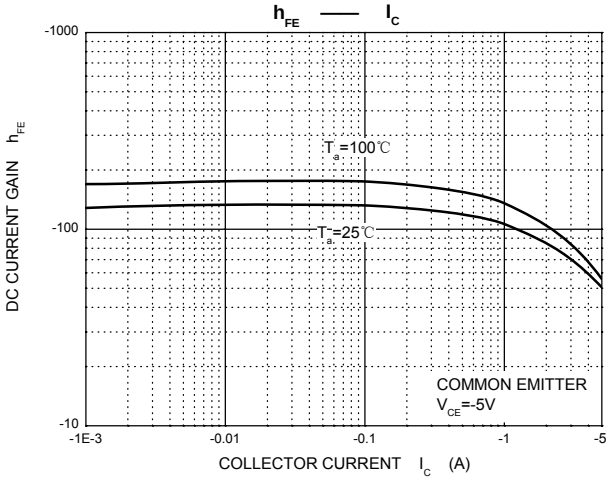
### CLASSIFICATION OF $h_{FE\ (1)}$

| RANK | R | O | Y |
|---|---|---|---|
| RANGE | 40-80 | 70-140 | 120-240 |

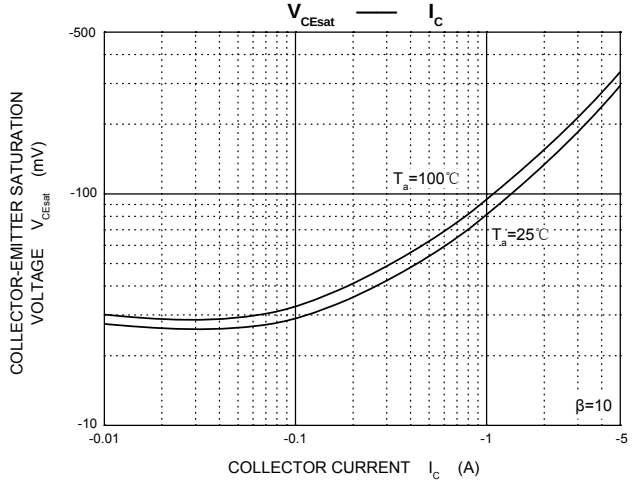
**Static Characteristic**



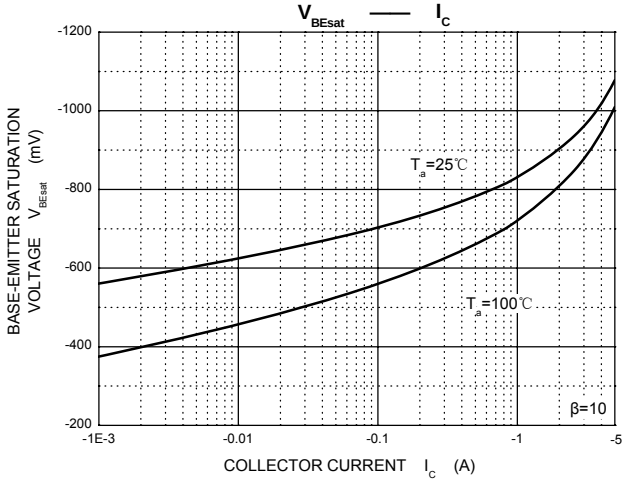

**$h_{FE}$ —— $I_C$**



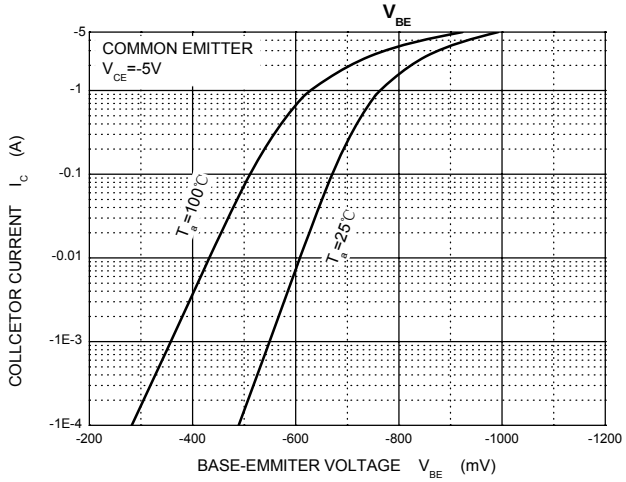

**$V_{CEsat}$ —— $I_C$**



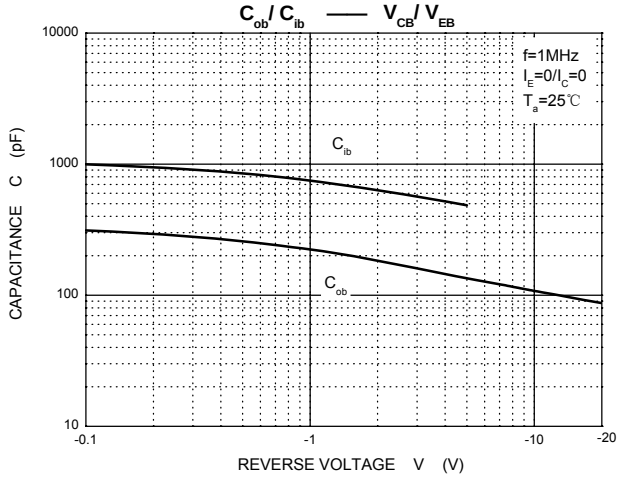

**$V_{BEsat}$ —— $I_C$**




**$V_{BE}$**




**$C_{ob}$ / $C_{ib}$ —— $V_{CB}$ / $V_{EB}$**




**$P_C$ —— $T_a$**