Kingtronics®

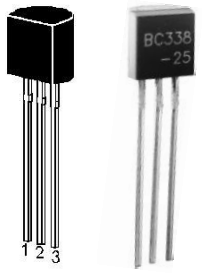
# BC337...BC338

## NPN Silicon Epitaxial Planar Transistor

## FEATURES

For switching and amplifier applications

These types are subdivided into three groups -16, -25 and -40, according to their DC current gain.




1. Collector 2. Base 3. Emitter
TO-92 Plastic Package

### Absolute Maximum Ratings (Ta = 25℃)

| PARAMETER | SYMBOL | BC337 | BC338 | UNIT |
|---|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | 50 | 30 | V |
| Collector Emitter Voltage | $V_{CEO}$ | 45 | 25 | V |
| Emitter Base Voltage | $V_{EBO}$ | 5 | | V |
| Collector Current | $I_C$ | 800 | | mA |
| Peak Collector Current | $I_{CM}$ | 1 | | A |
| Total Power Dissipation | $P_{tot}$ | 625 | | mW |
| Junction Temperature | $T_j$ | 150 | | ℃ |
| Storage Temperature Range | $T_{stg}$ | -55 to +150 | | ℃ |

### Characteristics at Ta = 25℃

| Parameter | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| DC Current Gain at $V_{CE}$ = 1 V, $I_C$ = 100 mA Current Gain Group | -16 | $h_{FE}$ | 100 | - | 250 | - |
| | -25 | $h_{FE}$ | 160 | - | 400 | - |
| | -40 | $h_{FE}$ | 250 | - | 630 | - |
| at $V_{CE}$ = 1 V, $I_C$ = 300 mA | | $h_{FE}$ | 60 | - | - | - |
| Collector Base Cutoff Current at $V_{CB}$ = 50 V | BC337 | $I_{CBO}$ | - | - | 100 | nA |
| at $V_{CB}$ = 30 V | BC338 | | - | - | 100 | |
| Collector Base Breakdown Voltage at $I_C$ = 100 µA | BC337 | $V_{(BR)CBO}$ | 50 | - | - | V |
| | BC338 | | 30 | - | - | |
| Collector Emitter Breakdown Voltage at $I_C$ = 2 mA | BC337 | $V_{(BR)CEO}$ | 45 | - | - | V |
| | BC338 | | 25 | - | - | |
| Emitter Base Breakdown Voltage at $I_E$ = 100 µA | | $V_{(BR)EBO}$ | 5 | - | - | V |
| Collector Emitter Saturation Voltage at $I_C$ = 500 mA, $I_B$ = 50 mA | | $V_{CE(sat)}$ | - | - | 0.7 | V |
| Base Emitter On Voltage at $V_{CE}$ = 1 V, $I_C$ = 300 mA | | $V_{BE(on)}$ | - | - | 1.2 | V |
| Gain Bandwidth Product at $V_{CE}$ = 5 V, $I_C$ = 10 mA, f = 50 MHz | | $f_T$ | - | 100 | - | MHz |
| Collector Base Capacitance at $V_{CB}$ = 10 V, f = 1 MHz | | $C_{cbo}$ | - | 12 | - | pF |

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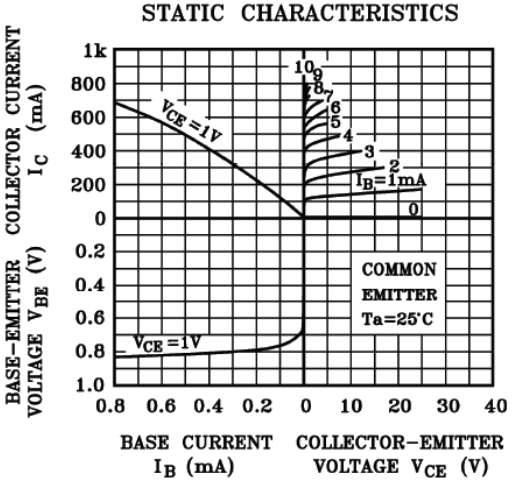
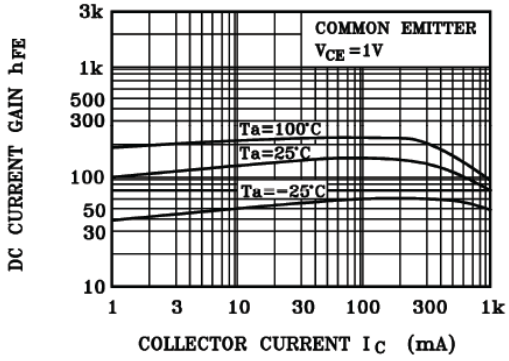
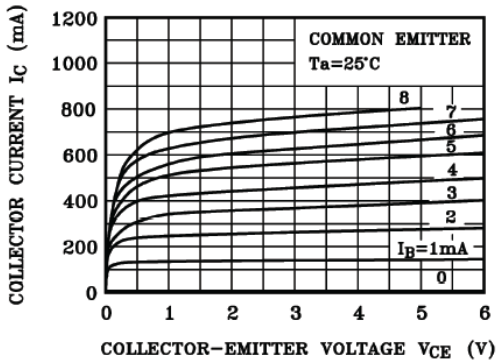
STATIC CHARACTERISTICS



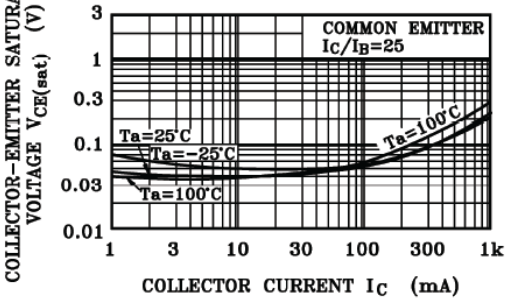

$h_{FE}$ – $I_C$



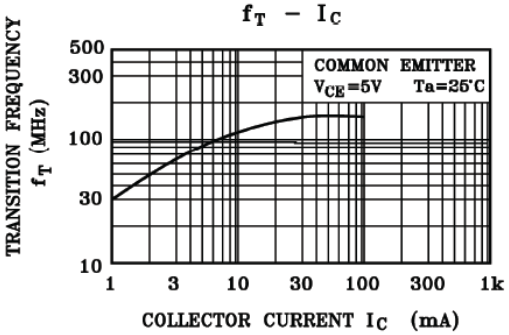

$I_C$–$V_{CE}$ (LOW VOLTAGE REGION)



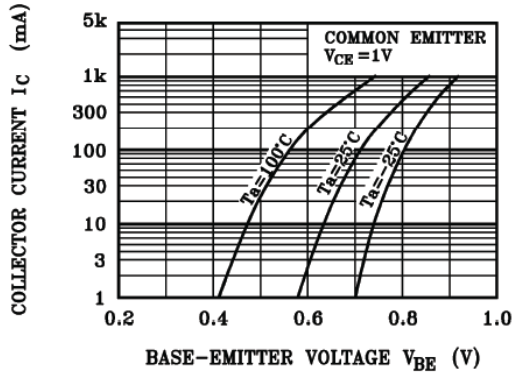

$V_{CE(sat)}$ – $I_C$




$f_T$ – $I_C$




$I_C$ – $V_{BE}$




$P_C$ – Ta