

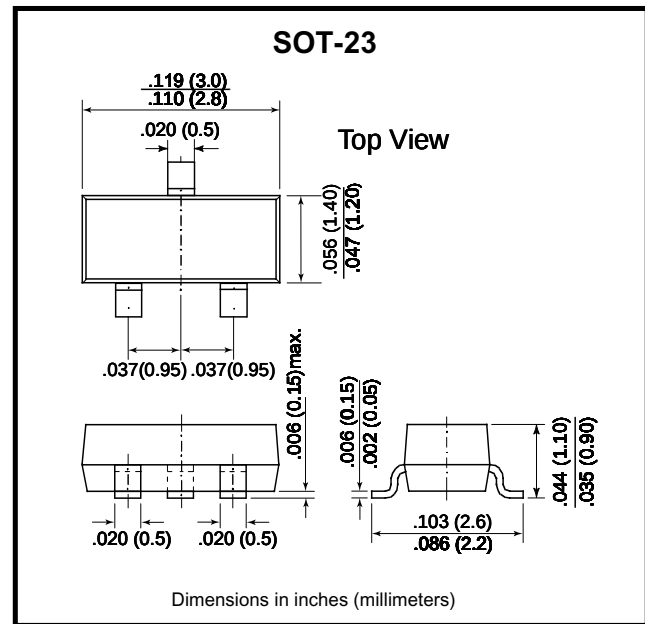
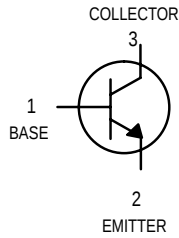
# High Voltage Transistor (NPN)

## BTC4505N3

### Features

High breakdown voltage. ( $BV_{CEO} = 400V$ )

Low saturation voltage, typically  $V_{CE(sat)} = 0.1V$  at  $I_C/I_B = 10mA/1mA$



| Parameter                 | Symbol    | Limit    | Unit |
|---------------------------|-----------|----------|------|
| Collector-Base Voltage    | $V_{CBO}$ | 400      | V    |
| Collector-Emitter Voltage | $V_{CEO}$ | 400      | V    |
| Emitter-Base Voltage      | $V_{EBO}$ | 6        | V    |
| Collector Current         | $I_C$     | 300      | mA   |
| Power Dissipation         | $P_d$     | 0.225    | W    |
| Junction Temperature      | $T_j$     | 150      | °C   |
| Storage Temperature       | $T_{stg}$ | -55~+150 | °C   |

## Characteristics (Ta=25°C)

| Symbol         | Min. | Typ. | Max. | Unit    | Test Conditions                 |
|----------------|------|------|------|---------|---------------------------------|
| $BV_{CBO}$     | 400  | -    | -    | V       | $I_C=50\mu A, I_E=0$            |
| $BV_{CEO}$     | 400  | -    | -    | V       | $I_C=1mA, I_B=0$                |
| $BV_{EBO}$     | 6    | -    | -    | V       | $I_E=50\mu A, I_C=0$            |
| $I_{CBO}$      | -    | -    | 10   | $\mu A$ | $V_{CB}=400V, I_E=0$            |
| $I_{CER}$      | -    | -    | 20   | nA      | $V_{CE}=300V, R_{EB}=4k\Omega$  |
| $I_{EBO}$      | -    | -    | 10   | $\mu A$ | $V_{EB}=6V, I_C=0$              |
| $*V_{CE(sat)}$ | -    | 0.1  | 0.5  | V       | $I_C=10mA, I_B=1mA$             |
| $*V_{BE(sat)}$ | -    |      | 1.5  | V       | $I_C=10mA, I_B=1mA$             |
| $h_{FE}$       | 52   | -    | 270  | -       | $V_{CE}=10V, I_C=10mA$          |
| $f_T$          | -    | 20   | -    | MHz     | $V_{CE}=10V, I_C=10mA, f=10MHz$ |
| Cob            | -    | 7    | -    | pF      | $V_{CB}=10V, f=1MHz$            |

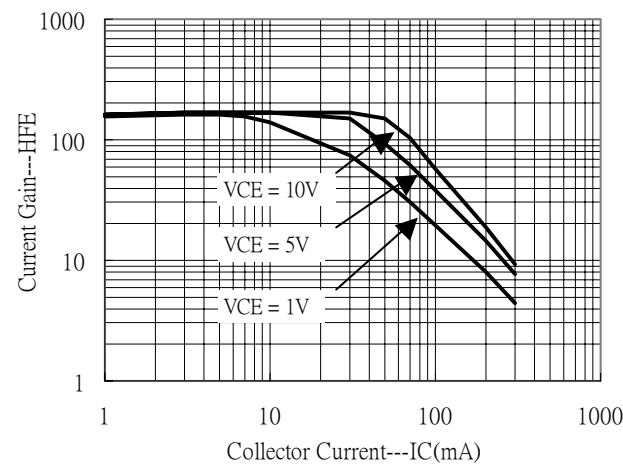
\*Pulse Test : Pulse Width  $\leq 380\mu s$ , Duty Cycle  $\leq 2\%$

## Classification Of $h_{FE}$

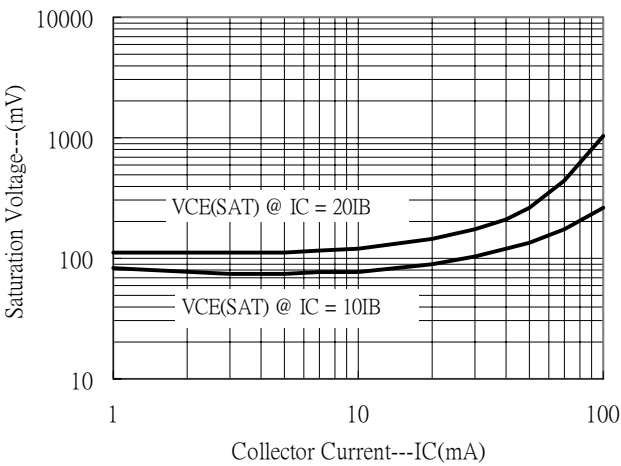
| Rank  | K      | P      | Q       |
|-------|--------|--------|---------|
| Range | 52~120 | 82~180 | 120~270 |

## Characteristic Curves

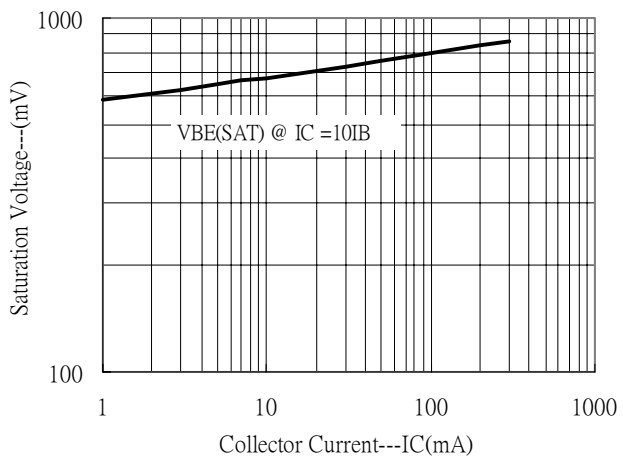
Current Gain vs Collector Current



Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current



Power Derating Curve

