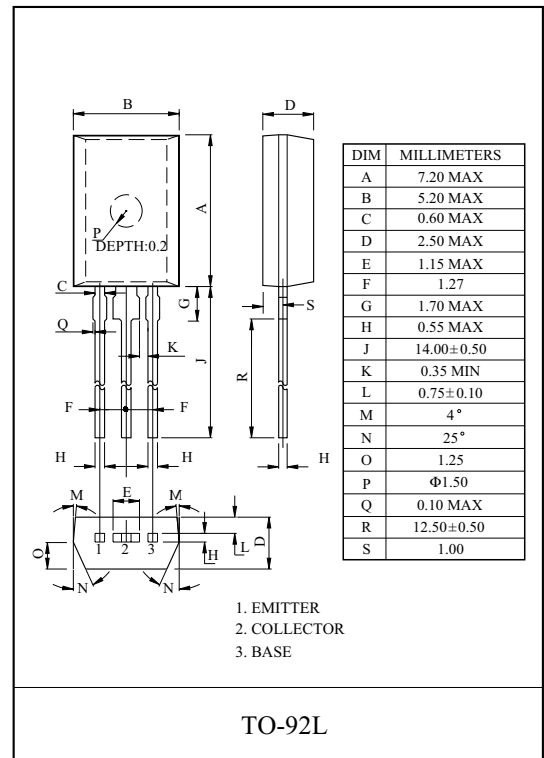


## FEATURE

- Low Collector-Emitter Saturation Voltage  $V_{CE(sat)}$ .
- High Collector Current Capability :  $I_C$  and  $I_{CP}$ .
- Higher Efficiency Leading to Less Heat Generation.

## MAXIMUM RATING (Ta=25 °C)

| CHARACTERISTIC              |       | SYMBOL    | RATING    | UNIT |
|-----------------------------|-------|-----------|-----------|------|
| Collector-Base Voltage      |       | $V_{CBO}$ | -120      | V    |
| Collector-Emitter Voltage   |       | $V_{CEO}$ | -100      | V    |
| Emitter-Base Voltage        |       | $V_{EBO}$ | -5        | V    |
| Collector Current           | DC    | $I_C$     | -1        | A    |
|                             | Pulse | $I_{CP}$  | -3        |      |
| Base Current                |       | $I_B$     | -300      | mA   |
| Collector Power Dissipation |       | $P_C$     | 1         | W    |
| Junction Temperature        |       | $T_j$     | 150       | °C   |
| Storage Temperature Range   |       | $T_{stg}$ | -55 ~ 150 | °C   |

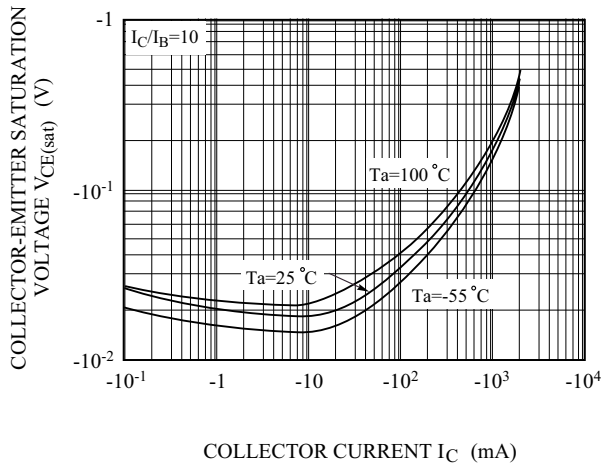


## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

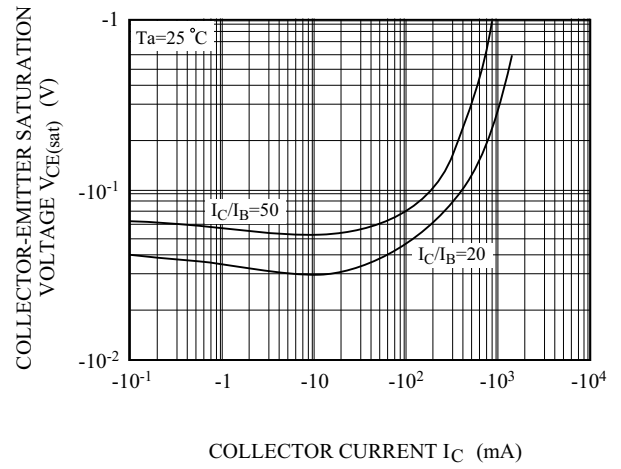
| CHARACTERISTIC                          | SYMBOL            | TEST CONDITION                           | MIN. | TYP. | MAX.  | UNIT |
|-----------------------------------------|-------------------|------------------------------------------|------|------|-------|------|
| Collector-Base Breakdown Voltage        | $V_{(BR)CBO}$     | $I_C = -100 \mu A$                       | -120 | -    | -     | V    |
| Collector-Emitter Breakdown Voltage **  | $V_{(BR)CEO}$     | $I_C = -1 mA$                            | -100 | -    | -     | V    |
| Emitter-Base Breakdown Voltage          | $V_{(BR)EBO}$     | $I_E = -100 \mu A$                       | -5   | -    | -     | V    |
| Collector Cut-Off Current               | $I_{CBO}$         | $V_{CB} = -80V, I_E = 0A$                | -    | -    | -100  | nA   |
| Emitter Cut-Off Current                 | $I_{EBO}$         | $V_{EB} = -4V, I_C = 0A$                 | -    | -    | -100  | nA   |
| Collector-Emitter Cut-Off Current       | $I_{CES}$         | $V_{CES} = -80V, V_{BE} = 0V$            | -    | -    | -100  | nA   |
| Collector-Emitter Saturation Voltage ** | $V_{CE(sat)} (1)$ | $I_C = -250mA, I_B = -25mA$              | -    | -    | -0.12 | V    |
|                                         | $V_{CE(sat)} (2)$ | $I_C = -500mA, I_B = -50mA$              | -    | -    | -0.18 |      |
|                                         | $V_{CE(sat)} (3)$ | $I_C = -1A, I_B = -100mA$                | -    | -    | -0.32 |      |
| Base-Emitter Saturation Voltage **      | $V_{BE(sat)}$     | $I_C = -1A, I_B = -100mA$                | -    | -    | -1.1  | V    |
| Base-Emitter Voltag                     | $V_{BE}$          | $V_{CE} = -5V, I_C = -1A$                | -    | -    | -1.0  | V    |
| DC Current Gain **                      | $h_{FE}(1)$       | $V_{CE} = -5V, I_C = -1mA$               | 150  | -    | -     |      |
|                                         | $h_{FE}(2)$       | $V_{CE} = -5V, I_C = -250mA$             | 150  | -    | -     |      |
|                                         | $h_{FE}(3)$       | $V_{CE} = -5V, I_C = -500mA$             | 150  | -    | 450   |      |
|                                         | $h_{FE}(4)$       | $V_{CE} = -5V, I_C = -1A$                | 125  | -    | -     |      |
| Transition Frequency                    | $f_T$             | $V_{CE} = -10V, I_C = -50mA, f = 100MHz$ | 100  | -    | -     | MHz  |
| Collector Output Capacitance            | $C_{ob}$          | $V_{CB} = -10V, f = 1MHz$                | -    | 17   | -     | pF   |

\*\* Pulse Width = 300  $\mu s$ , Duty Cycle  $\leq 2\%$ .

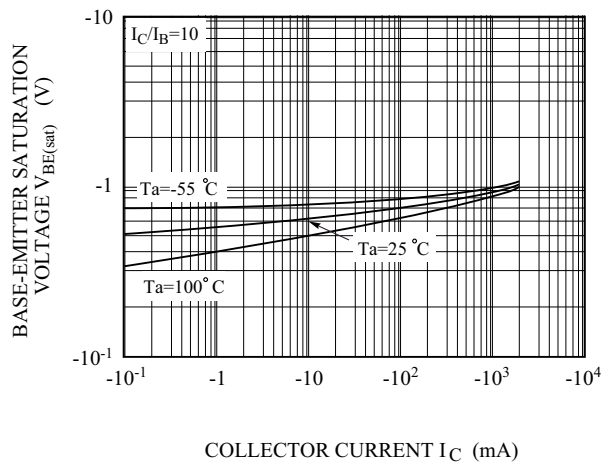
$V_{CE(sat)} - I_C$



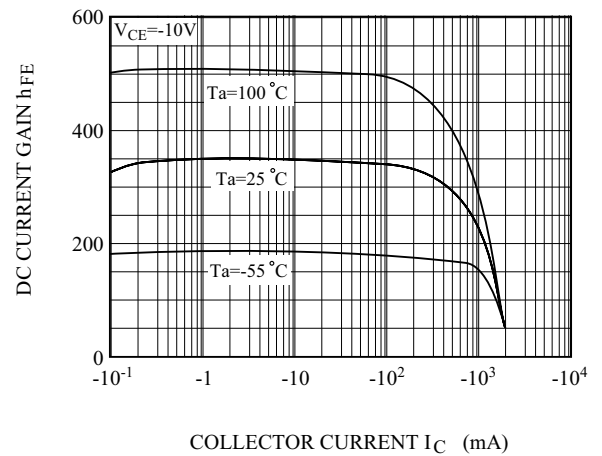
$V_{CE(sat)} - I_C$



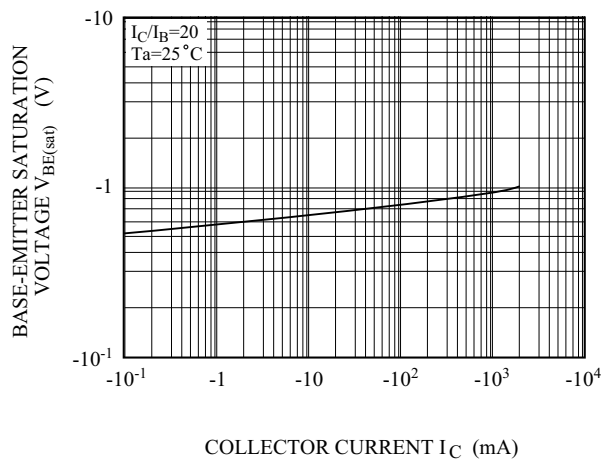
$V_{BE(sat)} - I_C$



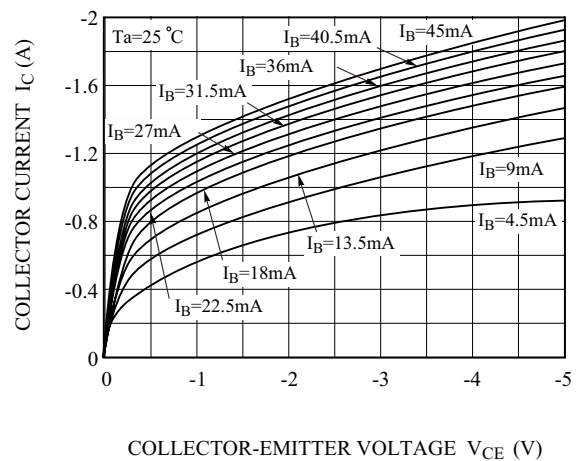
$h_{FE} - I_C$



$V_{BE(sat)} - I_C$



$I_C - V_{CE}$



## SAFE OPERATING AREA

