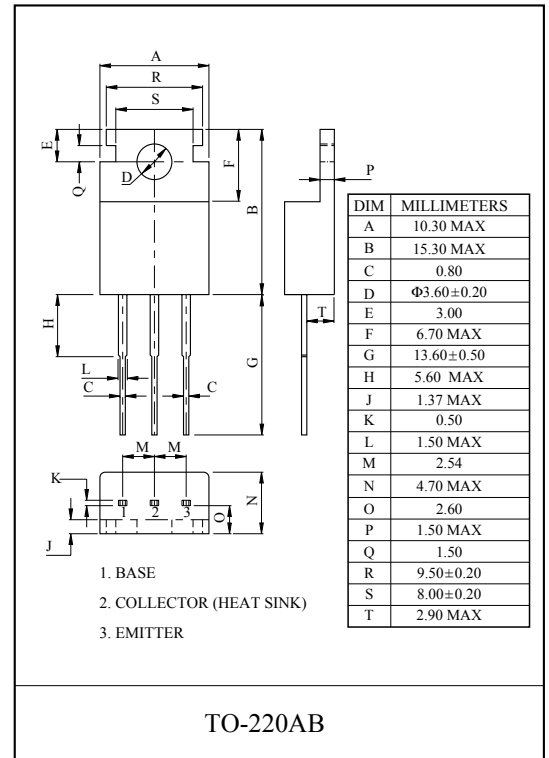


HIGH VOLTAGE AND HIGH RELIABILITY  
HIGH SPEED SWITCHING, WIDE SOA

### MAXIMUM RATING (Ta=25°C)

| CHARACTERISTIC                           |       | SYMBOL    | RATING    | UNIT |
|--|-------|-----------|-----------|------|
| Collector-Base Voltage                   |       | $V_{CBO}$ | 1100      | V    |
| Collector-Emitter Voltage                |       | $V_{CEO}$ | 800       | V    |
| Emitter-Base Voltage                     |       | $V_{EBO}$ | 7         | V    |
| Collector Current                        | DC    | $I_C$     | 3         | A    |
|  | Pulse | $I_{CP}$  | 10        |      |
| Base Current                             |       | $I_B$     | 1.5       | A    |
| Collector Power Dissipation<br>(Tc=25°C) |       | $P_C$     | 50        | W    |
| Junction Temperature                     |       | $T_j$     | 150       | °C   |
| Storage Temperature Range                |       | $T_{stg}$ | -55 ~ 150 | °C   |



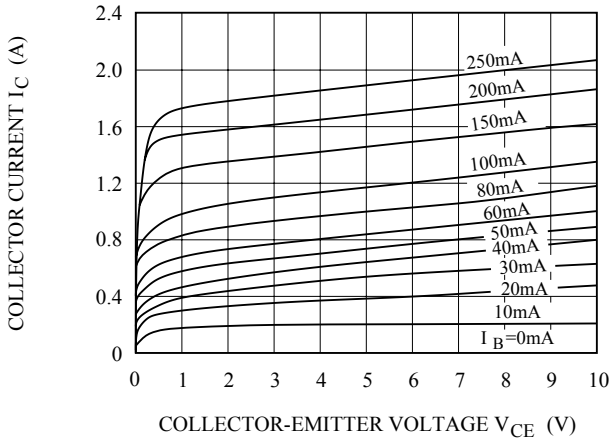
### ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC                       |              | SYMBOL             | TEST CONDITION   | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|--------------|--------------------|--|------|------|------|------|
| Collector Cut-off Current            |              | $I_{CBO}$          | $V_{CB}=800V, I_E=0$                                       | -    | -    | 10   | μA   |
| Emitter Cut-off Current              |              | $I_{EBO}$          | $V_{EB}=5V, I_C=0$   | -    | -    | 10   | μA   |
| Collector-Emitter Sustaining Voltage |              | $V_{CEX(SUS)}$     | $I_C=1.5A, I_{B1}=-I_{B2}=0.3A$<br>$L=2mH, \text{Clamped}$ | 800  | -    | -    | V    |
| Collector-Emitter Saturation Voltage |              | $V_{CE(sat)}$      | $I_C=1.5A, I_B=0.3A$                                       | -    | -    | 2    | V    |
| Base-Emitter Saturation Voltage      |              | $V_{BE(sat)}$      | $I_C=1.5A, I_B=0.3A$                                       | -    | -    | 1.5  | V    |
| DC Current Gain                      |              | $h_{FE}(1)$ (Note) | $V_{CE}=5V, I_C=0.2A$                                      | 15   | -    | 40   |      |
|                                      |              | $h_{FE}(2)$        | $V_{CE}=5V, I_C=1A$  | 8    | -    | -    |      |
| Collector-Base Breakdown Voltage     |              | $BV_{CBO}$         | $I_C=1mA, I_E=0$   | 1100 | -    | -    | V    |
| Collector-Emitter Breakdown Voltage  |              | $BV_{CEO}$         | $I_C=5mA, R_{BE}=\infty$                                   | 800  | -    | -    | V    |
| Emitter-Base Breakdown Voltage       |              | $BV_{EBO}$         | $I_E=1mA, I_C=0$   | 7    | -    | -    | V    |
| Collector Output Capacitance         |              | $C_{ob}$           | $V_{CB}=10V, f=1MHz, I_E=0$                                | -    | 60   | -    | pF   |
| Transition Frequency                 |              | $f_T$              | $V_{CE}=10V, I_C=0.2A$                                     | -    | 15   | -    | MHz  |
| Switching Time                       | Turn On Time | $t_{on}$           |  | -    | -    | 0.5  | μS   |
|                                      | Storage Time | $t_{stg}$          |  | -    | -    | 3    |      |
|                                      | Fall Time    | $t_f$              |  | -    | -    | 0.3  |      |

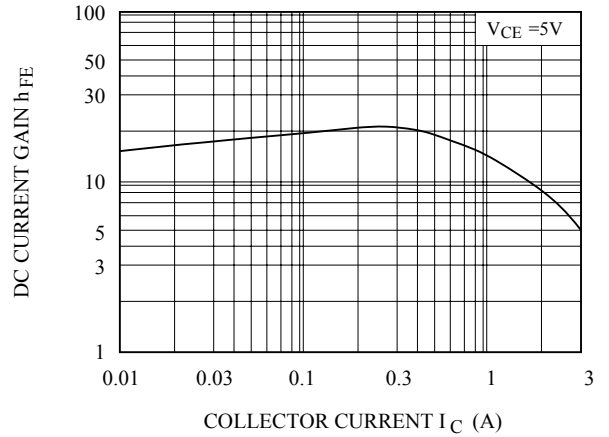
Note :  $h_{FE}(1)$  Classification R:15 ~ 30, O:20 ~ 40

# KTC4527

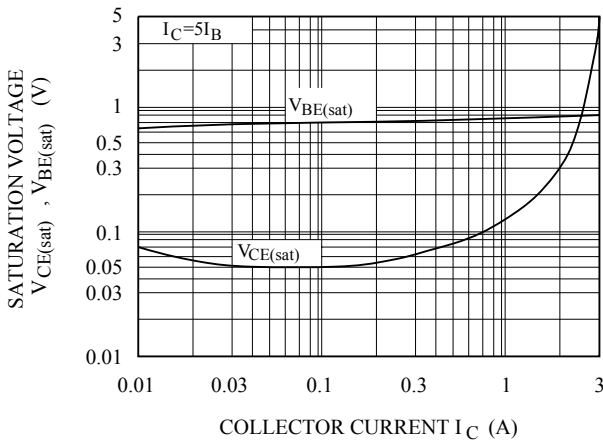
$I_C - V_{CE}$



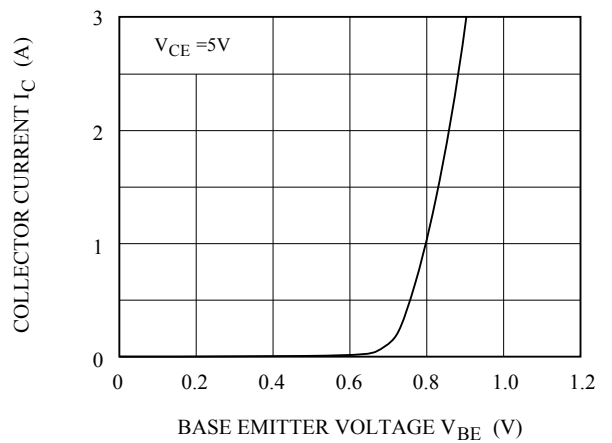
$h_{FE} - I_C$



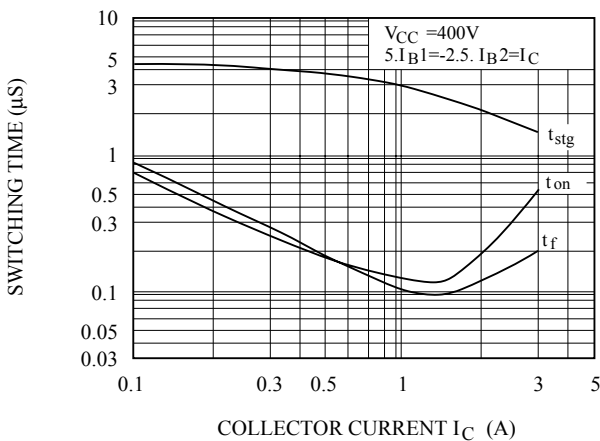
$V_{CE(sat)}, V_{BE(sat)} - I_C$



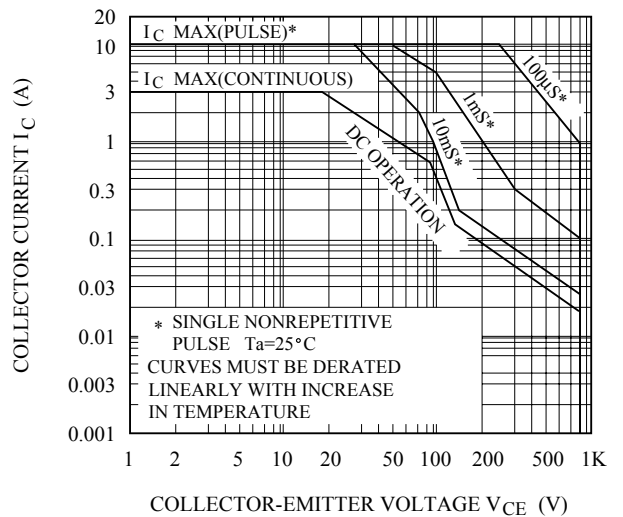
$I_C - V_{BE}$



SWITCHING CHARACTERISTICS

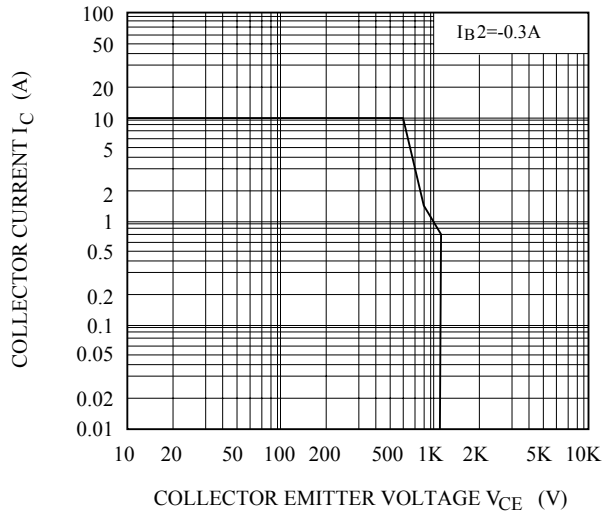


SAFE OPERATING AREA



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REVERSE BIAS SAFE OPERATING AREA



$P_c - T_a$

